Financing Large Projects

Using Project Finance Techniques and Practices

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List of Abbreviations and Acronyms

AA	Accounts Agreement
AAA	Agency and Administration Agreement
ACT	Asia Container Terminals Limited
ADB	Asian Development Bank
AfDB	African Development Bank
AG	Attorney General
AIG	American International Group
AT&T	American Telephone and Telegraph
AWA	Amendment and Waiver Agreement
BDOT	Biiild-Develop-Operate-Transfer
BLT	Build-Lease-Transfer
BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
BP	British Petroleum
BT	Build-and-Transfer
BTO	Build-Transfer-Operate
CAB	Civil Aviation Board
CADS	Cash Available for Debt Service
CBOs	Collateralized Bond Obligations
CCGT	Combined Cycle Gas Turbine
CCR	Corporate Credit Rating
CD	Certificate of Deposit
CDC	Commonwealth Development Corporation
CEGD	Central Electricity Generating Board
CEND	Confiscation, Expropriation, Nationalization and Deprivation
CfD	Contract for Differences
CLOs	Collateralized Loan Obligations
CME	Chicago Mercantile Exchange
COD	Commercial Operations Date
COFACE	Compagnie Francaise d'Assurance pour la Commerce Exterieur, the French ECA
CPs	Conditions Precedents
CSA	Conditional Sale Agreement
CTA	Common Terms Agreement
CTS	Common Terms Sheet
DCF	Discounted Cash Flow
DCR	Drawdown Cover Ratio
DLDs	Delay LDs
DOJ	Department of Justice

DSCR	Debt Service Cover Ratio
DSPA	Debt Service Payment Account
DSRA	Debt Service Reserve Account
EA	Environmental Assessment
EBIT	Earnings before Interesr and Taxes
EBITDA	Earnings before Interest, Taxes, Depreciation and Amortization
EBRD	European Bank for Reconstruction and Development
ECA	Export Credit Agency
ECGD	Export Credit Guarantee Department, the UK ECA
EIA	Environmental Impact Assessment
EOD	Event of Default
EPC	Engineering, Procurement and Construction
ERISA	Employee Retirement Income Security Act
ESA	Equity Support Agreement
FASB	The Financial Accounting Standards Board
FCC	Federal Communications Commission
FCF	Free Cash Flow
FERC	Federal Energy Regulatory Commission
FM	Force Majeure
FSA	Fuel Supply Agreement
GJ	Gigajoule
GO	General Obligation
GOB	Government of Bangladesh
GOP	Government of Pakistan
GOSL	Government of Sri Lanka
GSA	Gas Supply Agreement
HDSCR	Historic Debt Service Cover Ratio
IA	Implementation Agreement
IADB	Inrer-American Development Bank
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
ICC	International Chamber of Commerce
ICR	Issuer Credit Rating
ICSID	International Center for the Settlement of Investment Disputes
IDA	International Development Association
IDC	Interest during Construction
IDCOL	Infrastructure Development Company Limited
IE	Independent Engineer
IEP	International Energy Partners
IFC	International Finance Corporation
ILFAs	Individual Loan Facility Agreements
IOUs	Integrated Investor-Owned Utilities
IPOs	Initial Public Offerings
IPP	Independent Power Producer
IRBs	Industrial Revenue Bonds
IRR	Internal Rate of Return
IRS	Internal Revenue Service
IsDB	Islamic Development Bank

JBIC	Japan Bank for International Cooperation
JEXIM	Japanese Export-Import
KfW	Kreditanstalt fur Wiederaufbau of Germany, the German ECA
kJ	Kilojoule
kW	Kilowatt
kWh	Kilowatt-Hour
LBOs	Leveraged Buyout
LC	Lenders Common Counsel
L/C	Letter of Credit
LCB	Limited Competitive Bidding
LCIA	London Court of International Arbitration
LD	Liquidated Damage
LIB	Limited International Bidding
LIBOR	London Interbank Offer Rate
LLA	Land Lease Agreement
LLCR	Loan Life Cover Ratio
LME	London Metals Exchange
LT	Leverlized Tariff
M&A	Merger and Acquisition
MAC	Material Adverse Change
MIGA	Multilateral Investment Guarantee Agency
MMRA	Major Maintenance Reserve Account
MPPs	Merchant Power Plants
MSCF	Million Standard Cubic Feet
MW	Megawatt
NCB	National Competitive Bidding
NFFO	Non-Fossil Fuel Obligation
NGC	National Gas Company
NGLs	Natural Gas Liquids
NGO	Nan-Governmental Organization
Norex	Northern Exploration Limited
NPV	Net Present Value
NYMEX	New York Metals Exchange
OM	Offering Memorandum
O&M Agreement	Operations and Maintenance Agreement
OPEC	Organization of Petroleum Exporting Countries
OPIC	Overseas Private Investment Corporation
OTC	Over-the-counter
PCG	Partial Credit Guarantee
PDSCR	Projected Debt Service Cover Ratio
PIM	Preliminary Information Memorandum
PLCR	Project Life Cover Ratio
PLDs	Performance LDs
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PRG	Partial Risk Guarantee
PSE	Philadelphia Stock Exchange
PSEDP	Private Sector Energy Development Project

PSEF	Private Sector Energy Fund
PSIDC	Private Sector Infrastructure Development Corporation
PSIF	Private Sector Infrastructure Fund
PURPA	Public Utilities Regulatory Policies Act
PFI	Private Finance Initiative
PV	Present Value
R&DLP	Research and Development Limited Partnership
RAP	Resettlement Action Plan
RCOD	Required Commercial Operations Date
RCR	Repayment Cover Ratio
RDs	Reserved Discretion(s)
RECS	Regional Electricity Companies
RFP	Request for Proposals
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
ROO	Rehabilitate-Own-Operate
ROT	Rehabilitate-Operate-Transfer
RPI	Retail Price Index
RSA	Resource Supply Agreement
S&P	Standard & Poor's
SCR	Sovereign Credit Rating
SEC	Securities and Exchange Commission
SOHIO	Standard Oil Company of Ohio
SOT	Supply-Operate-Transfer
SPFC	Special Purpose Finance Corporation
T&D	Transmission and Distribution
TEU	Twenty-Foot Equivalent Unit
UNCITRAL	United Nations Commission on International Trade Law
US Eximbank	US Export-Import Bank
VAT	Value-Added Tax
VPD	Vehicles Per Day
WACC	Weighted Average Cost of Capital

PREFACE

Financing of very large projects often involves the use of Project Finance techniques.

Project Finance represents an interesting confluence of ideas relating to finance, financial modelling, engineering, economics, environment and law. Yet, existing books on project finance tend to be either finance-centred, or legally rooted.[1] With the increased use of Project Finance techniques in large projects, it is now time that these separate strands be integrated for the benefit of practitioners – sponsors, lenders and government negotiators – and pedagogic use in the classrooms.

The book follows the development cycle of a "typical" infrastructure project in its presentation of materials. The first half of the book describes project origination and early development activities, negotiations with ceding authority and others of project agreements, sources of international finance and credit enhancements, and the sponsor's support required for classic and non-classic deals. The second half discusses the architecture of the typical financial model, due diligence and appraisal process conducted by lenders, scope and content of negotiations related to each of several finance documents, role of derivatives and hedges, and typical issues encountered in structuring a security package. The book is particularly thorough in its coverage of emerging market issues. At the same time, it also discusses the evolving nature of Project Finance in the industrialized world.

The authors use examples from various types of infrastructure projects to illustrate their points, including bulk water system, power generation, container port, toll road and telecommunications facility. They also discuss other types of Project Finance, including those related to oil and gas, mining, leveraged tax leasing, industrial revenue bonds, ship and aircraft, horticulture. etc.

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[1] An example of a Project Finance book that is finance-centred is Finnerty, John D., Project Financing, John Wiley & Sons, 1996. Books on the same subject and more oriented towards the legal aspects include Vintner, Graham D., *Project* Finance, Sweet & Maxwell, 1998, and Hoffman, Scott L., *The Law* and *Business* of International Project *Finance*, Kluwer Law International, 1998.

DISTINCTIVE FEATURES OF FINANCING OF LARGE PROJECTS USING PROJECT FINANCE TECHNIQUES AND PRACTICES

The book delves into a number of areas that are not covered adequately in the literature. The book, for example:

- Addresses the interface of "regulatory economics" with the evaluation of a project's viability. Determining the long-term viability of any infrastructure facility often involves a specialized assessment of the environment in which it will operate – an environment typically exposed to reform. Reform, of course, creates uncertainties for the borrower and lender, especially when it promises to bring great change. In an infrastructure sector, change may take the form of a vertical or horizontal unbundling of the national utility, its reorganization into a number of corporate entities, the introduction of competition in some activities within the sector and the introduction of independent regulation in others.

  Economics interfaces with Project Finance in yet another way.

  Because of the long tenors involved in Project Finance, international bankers located in money centres across the world cannot afford to overlook the political and economic outlook of the host country in which the project is located. From this perspective, evaluating the long-term viability of a project involves a parallel evaluation of the host country's ability to generate the foreign exchange needed to service the external debt of its resident corporations, including the debt service obligations of the project, itself. Such an evaluation makes use of tools, or concepts, distinctly unfamiliar to the average banker. When this appraisal cannot be met with any degree of precision, bankers will rely on specialized credit enhancements identified in this book.
- Covers environmental considerations involved in implementing a major facility. For readers who may be less aware of this aspect, Appendix **3.3** describes an environmental and social impact assessment and the major elements that go into its preparation.
- Simplifies concepts related to risk sharing, particularly in infrastructure Project Finance. Several areas are identified and analysed. For example, Chapter *5* examines the risk-sharing provisions of typical project agreements, including those related to power purchase and sale, engineering, procurement and construction, fuel supply and transport as well as operations and maintenance agreements; Appendix 5.1 provides guidelines for the purpose of assessing adequacy of liquidated damages in an engineering, procurement and construction contract; Appendix 5.2 as-

sesses the interrelationship between the off-take, fuel supply and engineering, procurement and construction contracts with regard to fuel use and reimbursement in a power project deal; and Appendix 6.2 and Appendix **6.3** provide general guidelines on how force majeure risks are shared between the off-taker and the project vehicle.

- Dissects the contract structure of the "classic" Project Financing with the objective of identifying those attributes that permit an undertaking to mobilize its debt and equity funding. In addition, however, Appendix 6.1 describes the variations found in Project Finance deals *that* do not ***meet*** the classic mould and explains the practices employed by lenders to "manage" the risks associated with these departures.
- Contains extensive material (Chapter 7) describing the architecture of a financial model, the purposes served by this very important tool, and the way in which it, along with other aids, is used by lenders to assist in evaluating as well as negotiating the terms and conditions of project loans. In addition, Chapter 7 addresses the use of debt-cover ratios in Project Finance and the reliance placed on these for structuring and profiling a loan as well as designing financial covenants.
- Describes how Monte Carlo simulation, possibility analysis and real options analysis may be used to assess specialized project concerns. From the sponsor's perspective, particularly, Appendix 7.1 highlights some of the more poignant disadvantages of relying on models based on discounted cash flow analysis to assess project's viability.
- Probes thoroughly into the special role of financial economics, in providing risk-management solutions to typical Project Finance problems. Almost all project loans have a derivative or two associated with their finance plan. Use of derivatives adds predictability to a project's cash flow forecasts and, in that manner, reduces the probability of future distress. Using an interest rate swap as an example, Chapter 11 is devoted to the pricing, or valuation, of this particular derivative and the commercial issues involved in its negotiation.

  Seeks an appropriate balance in describing the commercial issues that arise in loan agreements that will have a potential impact on other finance documents. Examples of commercial issues that are discussed in this book, not typically addressed elsewhere, include those arising from the financial model (Chapter 7), reserved discretion(s) (Chapter 8), the sponsor support package (Chapter 9), subordination arrangements (Chapter 10), interest rate swap agreement (Chapter 11) and the direct agreements (Chapter 12).

THE PLACE OF THIS BOOK IN THE CORPORATE FINANCE LITERATURE

The book can be used as a text for a one-semester elective course in an MBA programme. The authors have used the manuscript in five project finance courses consisting of 30 lectures each.

It can also serve as a ready handbook for sponsors, government officials, lawyers, bankers and professionals from multilateral or bilateral agencies involved in initiation, development and/or negotiation of project finance deals. Our goal has been to stress concepts and their application. Hence, the book does not presuppose an extensive background in corporate law, finance, financial arithmetic, modelling or economics.

Although the book is on Project Finance, its coverage of issues extends beyond this specific type of financing to issues that affect all international lending.

ORGANIZATION OF THIS BOOK

Chronologically, the book is organized in a manner that mirrors the project development process and is divided into four parts:

- Part I: The Setting
- Part II: Project Documents and Support
- Part III: Project Evaluation Tools
- Part IV: Finance Documents

Part I, The Setting, includes Chapters 1–4. In the first two chapters, the authors trace the post-World War II history of Project Finance and its growing importance in industrialized and emerging countries. In Chapter 3, the authors identify the three stages of project development, particularly the challenges that must be overcome by sponsor(s) and governments to arrive at financial closing. Chapter 4 describes the growing, but still inadequate, sources of Project Finance available to projects, even creditworthy projects, in emerging markets. Throughout, the discussion is centred on developing countries, given the added complexity involved in originating and financing projects in that part of the world.

Part II, Project Documents and Support, consisting of Chapters 5–6, analyses the contractual framework of a typical project, specifically, its project agreements and credit enhancements. Using a power generation project as its key illustration, Chapter 5 describes the key elements of a "classic" Project Financing and the contractual attributes that must exist to make the project finance-able. The discussion in the same chapter is expanded subsequently to other projects, located either in developing or

industrialized countries with attributes different from those of the classic model, and identifies *additional* provisions or circumstances required to raise financing. Chapter 6 contains an extensive description of credit enhancements that apply in both industrialized and developing countries, although some of the support mechanisms are found only in developing country projects.

Part III, Project Evaluation Tools, contains Chapter 7 and discusses the tools available to lenders for a project evaluation, whether in industrialized or developing countries. The chapter broadly addresses the lenders' use of the debt offering memorandum (OM), the recruitment of expert advisors to assist in the technical or commercial evaluation of the project, and the great variety of applications reserved for the financial model. At one level, the chapter focuses on the architecture of a typical financial model, its changing role during project development, types of commercial issues negotiated with its assistance and subsequently, its continued use for the purpose of monitoring and tracking the progress of the project during construction and operations. At another level, Chapter 7 also describes the additional tools available to the lenders for the purpose of preparing a project appraisal report, i.e., the sponsor's offering memorandum (OM) and the variety of experts recruited to bring specialized expertise to the conduct of due diligence. Appendix 7.1 contains a good discussion of the strengths and weaknesses of a discounted cash flow (DCF) financial model and the use of alternative models – Monte Carlo simulation, possibility analysis and real options analysis – that may be employed to compensate for these weaknesses.

Part IV, Finance Documents, comprises Chapters 8–12, which provide a basis for understanding the contents of the finance and security documents in both developing and industrialized countries. Chronologically, these include the loan agreement in Chapter 8; the equity support agreement, accounts agreement and agency agreement in Chapter 9; the intercreditor agreement in Chapter 10; the interest rate swap agreement in Chapter 11; and the security agreement in Chapter 12. Areas unfamiliar to general readers hut that may be of special interest are discussed in Appendix 8.1, which contains an outline of lenders' reserved discretions that typically accompany a Project Finance credit agreement; in Chapter 10, which delves into the use of subordinated debt in a Project Finance deal, and the negotiating issues between senior and subordinated lenders in the intercreditor agreement; in Chapter 11, which identifies a nutnber of commercial issues, typical of interest rate swap agreements, and approaches to their resolution; and in Appendix 12.1, which has a comprehensive overview of direct agreements and their purpose in perfecting security.

LEARNING FEATURES

This book incorporates a number of special learning features that will maintain the reader's interest in the presentation and help with the understanding of the material.

Case studies. Selected chapter discussions are accompanied by case studies that reinforce material covered earlier, illustrating its applicability in real situations and, in some cases, extending the reader's creativity to use lateral thinking in arriving at a solution. Chapter 7 contains a comprehensive case study which is extended over to Chapter 8, and may be developed by students over several modules, working individually or in teams, and delivered either as a final examination or a course paper.

- **A** financial model. As a working tool, an electronic model is included, permitting students to develop a lenders base case model using principles and concepts described in the book. The financial model (which can be downloaded from www.pearsoned-asia.com/khan) allows the student to simulate participation in the development of a container port project as it evolves through its due diligence stage and the respective negotiations related to loans, sponsor's support, subordinated loans and interest rate swaps.
- Outline of common terms sheet. To enhance understanding of the numerous terms and conditions related to a Project Finance loan, this comprehensive terms sheet is divided into ten parts (A–J) – each one setting forth the loan terms and conditions found in a separate finance agreement. The terms sheet augments the discussion for those chapters covering the finance documents, namely Chapters 8–12.
- Special boxes. Less central topics that nonetheless offer particularly vivid illustrations of points made in the text are treated in boxes. Information contained in these boxes is useful generally in understanding the historical or contextual background related to the key points made in any given chapter.
- **A** glossary of **key** terms. Included is a glossary of important terms, its purpose being to provide a ready reference for all key terms and concepts discussed in the book and serve as a ready guide in facilitating comprehension or review.

  Review questions. Each chapter is followed by a number of questions intended to test and solidify students' comprehension of the basic concepts. Questions range from simple to complex, in some cases requiring computation to arrive at an answer.

CONVENTIONS USED IN THE BOOK

With regard to terminology, this book will use the term *sponsor(s)* to apply to the corporate entity responsible for implementing the project except in those cases where the use of singular or plural is better. For consistency, the authors use the term project vehicle throughout to refer to the corporate entity organized by the sponsor(s) to implement a project, rather than the more state-of-the-art term, *project* company. The authors feel that the latter term is inappropriate, and often misleading to an international audience, especially when it is used in the context of a US-style limited partnership, or trust.

The authors use the terms developing country and emerging market country synonymously. However, to avoid misreading of the text, the term industrialized country is preferred by the authors to its synonym developed country. Throughout, host government refers to the central government of the country where the project is located and ceding authority is that entity within a developed or industrialized country that grants a concession or off-take agreement to a private company. We duly note that in the US and other industrialized countries, a ceding authority may be either a private or public entity. For example, an investor-owned utility in the US may act as a private ceding authority when it bids out a project, subsequently entering into a long-term power purchase agreement with a project vehicle. In contrast, the state highway commission, a public entity, may enter into a concession granting the rights to a private concessionaire to build a private toll road.

Throughout the discussion on finance documents in Chapters 8–12, the authors use terms that are not universal. However, the reader should note that the terminology used, as well as the concepts and methods of documenting transactions, is not common to all Project Finance. This specialized lending is a very deal-specific craft. There are many varieties of documents found in the business. Some vary, depending on the nature of the transaction. Document names and acronyms often differ from project to project as do the titles applying to the various project participants and finance parties. For example, the term common terms sheet which we use in this book, may be a term used in large projects on occasion, but in others that same document may be called a common agreement and, in smaller and other transactions, there may not exist such an agreement. In lieu thereof, and in smaller deals particularly, an appendix or annex will set forth definitions common to all project documents. An accounts agreement, another term used in this book, may be an escrow account agreement in some other transaction. Similarly, a finance party such as an inter-creditor agent may be known in other documents as simply an agent or a trustee. In view of

these difficulties, we trust that those readers who are conversant with the differences will bear the authors' preferences for document names, titles of parties and acronyms. Throughout this book, the authors do their best to capture that which is generic to the craft, particularly the principles upon which lenders base their decisions.

As a final note, abbreviations and acronyms are defined the first time they are used in a chapter. Nevertheless, to assist readers who may not be familiar with these abbreviations or acronyms, a complete list can be found in the front section of this book.

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Chapter *6:* Credit Enhancements	Paolo Lombardo, Director of Project Development, ABB Ltd., Zurich, Switzerland
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PART I

The Setting

chapter 1

WHAT IS PROJECT FINANCE?

INTRODUCTION

This book focuses on the financing of large projects' that rely on Project Finance techniques and practices in order to raise debt and passive equity.

A Project Finance transaction involves the mobilization of debt, equity, contingent equity, hedges and a variety of limited guarantees through a newly organized company, partnership or contractual joint venture (a project vehicle). These commitments and instruments are mobilized through the project vehicle for the purpose of building a large, capital-intensive facility and operating a discrete business activity. In such a transaction, lenders look to the assets of the project vehicle as collateral and its projected cash flow for full recovery of their loans.

The term ***Project* Finance** was developed by bankers to refer to a particular method of mobilizing corporate finance. Projects that use this technique are highly leveraged and financed by lenders with limited recourse to the sponsor(s). Broadly, lenders finance a large corporate undertaking through one of two different ways: (a) a traditional loan backed by the full faith and credit of corporate balance sheet; or (b) a limited recourse loan. Under the former, the lending decision is based on the prospects of the project to be built and also the general credit standing of the corporate borrower, i.e., its sponsor(s). Even if the project is not generating as much cash flow as originally anticipated, the lenders can expect to get paid if the cash flows from the various other commercial activities of the corporate entity remain robust. In Project Finance, the lenders' sources of debt repayment are limited to the discrete cash flow and other assets belonging to the project vehicle.

There are other differences between a "traditional" and a "Project Finance" loan. The latter involves the construction of a ***new*** project and its

[1] **Sized at US$50** million, or more.

operation, hence it is sometimes referred to as a greenfield financing, whereas the former may be used for a variety of corporate purposes. In addition, Project Finance loans have fairly uniform characteristics: (a) a roll-up of interest during construction; (b) an amortizing loan repayment structure with a notable absence of balloon payments; (c) tight tailoring, for example, during construction between loan draws and stage payments and during operations, between cash flow generation and loan repayments; (d) sharing with lenders of operating control of the project vehicle; (e) creation of various accounts and/or cash traps ro meet operating needs and contingencies; and (f) complex documentation. With the exception of the first characteristic, the rest have the effect of structurally shifting risk from lenders to sponsor(s), or other third parties, to mitigate the risks they will incur in providing debt finance to such facilities.

Project Financing is distinguished additionally from other lending mechanisms in various aspects: the capitalization and revenue structure of the borrower is commercially segregated from that of its sponsor(s); the sponsor(s) assumes the completion risk during the construction phase of the project; and the sponsor(s) pledges all of the assets of the project vehicle to the lender. The vast majority of projects financed in this manner have a revenue contract: or what will be referred to throughout this book as an off-take agreement, with relatively high financial leverage, and a complex risk-sharing and mitigation structure that involves the allocation of individual risks to any one of several major parties.

Full, Limited or Non-Recourse Financing

A debt financing may be arranged on the basis of full, limited or non-recourse to sponsors.

A full recourse financing occurs when the sponsor(s) is responsible for the repayment of the project debt, without limitation, throughout the entire loan term. In contrast, limited recourse financing implies a finite commitment on the part of the sponsor(s) beyond the level of committed base equity. The added support is "limited" to contingent equity and/or performance bonds drawn only to cover specifically identified and negotiated construction and operating risks. Most Project Finance is limited recourse financing.

'Although there are numerous examples of Project Finance deals that have been completed without revenue contracts, the output of the facility in such a case must enjoy a demand that is immune to business-cycle developments; its production or processing costs, lower than those of competitors; and its price structure, competitive relative to competing facilities.

In a non-recourse financing, a relatively rare form of Project Finance, the sponsor(s) is not required by lenders to deliver any support to the project apart from the normal commitment to deliver base equity.

BENEFITS AND DISADVANTAGES OF PROJECT FINANCE

Established, well-capitalized corporations often select a Project Finance structure to assist in undertaking large debt commitments while minimizing any direct impacts on the corporate balance sheet. Entrepreneurial developers rely on project financing to permit development of several projects in different geographic areas, each based on its own merits with its own equity requirements and independent of the financial obligations of the other projects.

Important financial objectives sought by such corporations when mobilizing Project Finance for their individual projects include:

1. Minimizing, as well as tailoring, the equity commitment to be delivered to any one particular project.
2. Negotiating risk-sharing arrangements that are appropriate to the project being developed, the primary purpose being to move risk away from the project as well as its sponsor(s), with the intention of reallocating it to some other party and thereby improving the potential for project leverage.
3. Segregating project's liabilities from the corporate balance sheet from a commercial and accounting perspective. This is achieved generally by creating a special-purpose vehicle to undertake the project (referred to throughout this book as a project vehicle).
4. Reducing taxes by using a limited partnership or contractual joint venture structure to implement the project – effectively avoiding the double taxation that the tax authorities e.g. the US Internal Revenue Service (IRS)impose on corporations.
5. Avoiding restrictive covenants on the corporate balance sheet arising from the projects' debt financing.
6. Achieving diversification of exposure and revenue among a (future) portfolio of projects.
7. Matching each commercial undertaking with the specific assets and liabilities required to build and operate it.

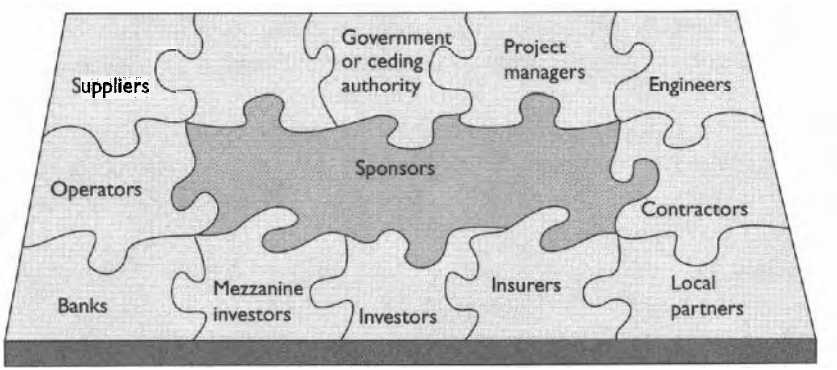
Depending on the project, corresponding disadvantages of a Project Financing may include any one, or all, of the following:

1. An adequate risk-sharing structure is often difficult to put in place and almost always creates unanticipated delays in achieving financial closing.
2. Lenders consider this type of finance to be riskier and, hence, charge a higher risk premium for associated loans.
3. Lenders insist on having greater oversight of the project, and thus the sponsor(s) or project management has less managerial discretion over it. Significantly, Project Finance lenders, rather than project managers, control the application of cash flows from the project to meet operating expenses or pay dividends.
4. Lenders view the insurance arrangements as part of the risk-sharing structure and require more comprehensive and costlier cover than would be alternatively required for a normal commercial loan.
5. Documentation is lengthy and complex, and costs a great deal to put into place. As a result, this type of financing is cost-effective only for relatively large deals.

MAJOR PARTICIPANTS

A greenfield development involves a large number of project participants (see Figure 1.1). The discussion below segregates these participants into two categories: (a) participants found in all Project Finance deals; and (b) participants found in some, but not all, deals.

Figure 1.1 Major Participants in Infrastructure Financing



Participants Found in All Project Finance Deals

Sponsor(s)

A project sponsor(s) may consist of an individual but more often is organ-

ized as a company. It usually has some previous experience in the implementation and operation of the project that is being undertaken. For example, the sponsor(s) of a power project is usually an existing independent power producer (IPP) or power utility. The sponsor(s) of a road project may he a toll road operator or a construction company experienced in building and operating toll roads. In both cases, the sponsor(s) must demonstrate that it possesses a previous track record and relevant experience in the implementation and operation of the facility that is to be built and/or operated. Often, hut not always, sponsor(s) originate in industrialized countries.

Project Vehicle

Sponsor(s) generally organize a special-purpose (incorporated or unincorporated) vehicle that is registered in the host country for the purpose of implementing and operating a given project. Where a corporate joint venture or limited partnership is used, the rights and obligations in terms of funding, administration, profit sharing, transfer of interests, termination and other issues are defined in a shareholders, or joint venture, agreement.

Sponsor(s) are required to make capital investments in the project vehicle according to the terms of this agreement. In almost all cases, there is usually a designated **lead sponsor.** In the case of a corporate joint venture, the lead sponsor is the leader of the consortium and in the case of a partnership, it is the dominant partner under the venture arrangements.

Construction Contractors

The construction contractor is the entity that builds the project under an engineering procurement and construction (EPC) contract, the terms of which guarantee the fixed-price, required specifications and schedule of construction and commissioning associated with the facility. The EPC contractor backs up its guarantees through contractual liquidated damage (LD) provisions in addition to performance bonds, retention bonds and other instruments contractually imposed on the contractor and which can be called upon to remedy any breach thereof. Lenders prefer a single EPC contract because it gives them a single-point responsible party for all subcontractors and activities. Occasionally, however, two separate contracts by two affiliated parties are used to define the construction arrangements: (a) an installation, erection and commissioning contract with one contractor; and (b) a supply of equipment contract with another. To achieve the contractual equivalent of single-point responsibility, each contractor is required by the lenders to cross-guarantee the other's obligations.

Lenders[3]

There are many types of lenders. Some of the principal loan sources available in a sophisticated market such as the US are discussed in Chapter 2. Others available in emerging countries are detailed in Chapter 4. Those of particular interest in this book include:

- Multilateral and bilateral agencies. Multilateral organizations encompass organizations such as the World Bank, International Finance Corporation (IFC)and Multilateral Investment Guarantee Agency (MIGA). The term also includes regional development banks such as the Asian Development Bank (ADB) or the Inter-American Development Bank (IADB). Multilateral institutions are often present, through their loan and guarantee products, in Project Finance transactions located in developing countries — where a great deal of this type of finance takes place. Bilateral agencies are also quite active in emerging markets. These include export credit agencies (ECAs),described further below, and investment promotion agencies. Examples of investment promotion agencies are the US Overseas Private Investment Corporation (OPIC) and the UK Commonwealth Development Corporation (CDC).From a historical perspective, there has never been as much involvement by public sector lenders in the mobilization of products and services related to Project Finance, particularly for infrastructure projects.
- Commercial lenders. The commercial lenders are commonly private banks, insurance companies, credit corporations and other financial institutions, based either abroad or in the host country. In higher income emerging market and industrialized countries, the largest part of the debt financing mobilized for a given project is forthcoming usually from commercial lenders. (For less developed countries, donors and ECAs are very active in assisting with the financing of projects sited in these countries.)
- ECAs. An example of an ECA is the US Export-Import Bank (Eximbank). ECAs assist in supporting exports from their country generally through the use of direct loan and guarantee mechanisms. Since the mid-1990s, several ECAs have established Project Finance divisions, designed to assist exporters to compete in new international infrastructure projects

[3]**Two observations are appropriate about "lenders" in this context: (a) not every class of lenders described herein is present in every deal; and (b) even lenders that specialize in Project Finance are nor always involved in the financing of a project's construction. As discussed in Appendix 1.2, sometimes the sponsor(s) finances the project's construction and after its commissioning, refinances the project in the financial markets.**

and other types of Project Financing. Six of the more important of these agencies are the US Eximbank, Export Credit Guarantee Department (ECGD) of the UK, Japan Rank for International Cooperation (JBIC), Compagnie Francaise d'Assurance pour la Commerce Exterieur (COFACE) of France and Kreditanstalt fur Wiederaufbau (KfW) of Germany.

- Private placement and bond market. Investors in capital market instruments generally shy away from projects that are not able to achieve an investment grade rating of BBB or better (see rating scale below), although this is not always the case. Established bond markets are in US, UK, Germany and Japan. Other bond markets in Europe and Asia are only now emerging.

  Bonds issued to the public receive a rating by a recognized rating agency, These are prepared by such agencies as Standard & Poor's, Inc. (S&P), or Moody's Investor Services, Inc. (Moody's). S&P's ratings range from AAA (best quality; small investment risk) to D (payment defaults exist or the issuer has filed for bankruptcy). Equivalent ratings by Moody's are Aaa–D, as summarized below:

S&P	Moody's	
AAA	Aaa	best quality
AA	Aa	high quality
A	A	upper-medium quality
BBB	Baa	medium quality
BB	Ba	speculative
B	B	lack desirable qualities
CCC	Caa	poor quality
CC	Ca	highly speculative
C	C	lowest rated
D	D	in default or bankruptcy

Insurance Providers

The project sponsor(s) will procure all insurance coverage required by applicable law. In addition, the terms of the service agreement and the requirements of lenders often result in the need to obtain a broader portfolio of insurance policies and coverage. In some cases, sponsor(s) may seek additional insurance coverage, such as political-risk insurance, to protect their investment. Chapter *6* provides a comprehensive overview of the purposes of credit enhancements and the specific risks that are covered with these instruments.

Other Parties

Depending on the project, there may be other parties involved, e.g. third-party equity sources (straight equity provided by parties which are unaffiliated with the sponsor(s)), or mezzanine investors or lenders (whose participation may take the form of convertible debt). Mezzanine investors tend to be passive, totally uninvolved with operations of the facility. There are also potential local partners who, unlike investors, do expect to participate actively in the operations of the project. Finally, there are the project managers who are designated by the active sponsor(s) to run the facility as well as other parties who assist during the development or operation period, e.g. financial advisors, engineering consultants, environmental advisors and lawyers.

Participants Found in Many, but Not All, Project Finance Deals

Off-taker

The off-taker is the name given to the entity that is the single purchaser of all of the project output subject to a formal contract. In some deals, there may be more than one off-taker, but this is relatively uncommon. Other projects may not have any off-takers, or off-take agreements, e.g. a toll road, container port or mass transport system. When an off-take agreement exists, it generally defines the minimum amount of revenue that will be generated by the project vehicle based on a minimum level of product or service that is to be sold at prices (including annual escalation) that are well defined. As will be discussed in Chapters *5–6*, the off-take agreement is designed frequently to permit the project vehicle to hedge against certain other risks, including inflation and foreign exchange parity risks. Payments due under the off-take agreement constitute a major element in determining the finance-ability of the project.

Third-Party Operator

The third-party operator is responsible for the operations and maintenance (O&M) of the project. The operator customarily receives a fee, subject to upward or downward adjustments based on performance results of the project. When a third-party operator is not used in a project, one of the sponsors may undertake this role. However, if the operator is a shareholder of the project vehicle at the time of contract negotiation or later, a conflict of interest arises in the negotiation and implementation of the O&M agreement between the project vehicle and the operator.

Resource Supplier

The resource supplier is responsible for the delivery to the project of necessary fuel (for a power project), bulk water supply (for a water-treatment facility), or utility services (such as water and electricity which many, if not most, projects require). For power projects using fossil fuels, project sponsor(s) and lenders are concerned with the underlying economics of the supply arrangements (in relation to expected revenues) and the ability of suppliers to perform under their contracts (including payment of damages in the event of non-performance).

Gouernment

In industrialized countries, the central government is rarely involved in Project Finance. If the government is involved at all, it is at the municipal level, for example, as a ceding authority, i.e. the entity that conducts a tender and/or awards the licence. In the US and other industrialized countries, the ceding authority may be a public or private sector entity. This is not true generally in developing countries. In many, if not most emerging markets, the central government and a number of its agencies may play a key role in assisting the project development. Some of these roles which include those performed by the ceding authority entail providing indirect credit support by purchasing a project's product or service; acting as supplier, providing key resource inputs; offering fiscal or other incentives and/or making available special guarantees. The government's role in emerging market project development is specifically discussed in Chapters 3–6.

RISK SHARING

The term *risk sharing* is frequently mentioned and discussed in Project Finance. While it appears to be a new concept, in reality it is not. Defined narrowly, there has always been some element of risk sharing in all Project Finance transactions – even those located in industrialized countries. To illustrate this important point, construction contractors have always been found willing to accept certain risks related to the construction of a new facility that the sponsor(s), or lenders, were unwilling to assume. In return for a higher priced turnkey construction contract, the contractor agrees to accept the risk of building a facility on time, on schedule, and absorbing (within defined limits) any cost overruns that may occur. This service is tremendously beneficial to the sponsor(s) and lenders because it mitigates key uncertainties related to the construction of the facility.

What is new in recent years is the expansion of the concept, especially as it applies to infrastructure projects located in emerging market countries. Since the 1990s, a broader and more intricate form of risk sharing for such projects has materialized. What makes risk sharing possible in this broader form is a perceived convergence of interest among those major parties; general agreement that has developed over time in respect of the principles of risk allocation; and some experience fashioning new instruments to perfect the mitigation of risk. We will discuss these factors generally below and in more detail in subsequent sections of this book.

Interest of the Major Parties

Major parties to an infrastructure facility located in a developing country will have some basic interests, as described below.

Host government. The host government, including its regulatory authority and its ceding authority, typically will seek to protect certain fundamental public interests, for example:

- Provision and continuity of the infrastructure services.
- Satisfaction of environmental protection, health, safety, security and quality standards applicable in the host country.
- Appropriate prices charged for the project services.
- Non-discriminatory and fair treatment of customers and users.
- Appropriate level of disclosure of information on operations and activities of the project vehicle.
- Flexibility to meet changed conditions in the future.
- Fitting the project in the current or anticipated future market structure.

Private sponsor(s). For private investors, certain interests are fundamental, such as:

- Ownership rights and/or protection of private investment.
- Timely issuance of consents and permits from government at all levels needed to build and operate the proposed facility.
- Enforceable contracts.
- Currency conversion and transfer.
- Recourse to international arbitration, when needed.

Lenders. Apart from rhe predictability of a project's cash flow and its ability to service debt, the lenders will generally have several main concerns in a Project Finance deal:

- Enforceable security interests.
- Credit enhancements from reliable parties.
- Legitimate step-in rights.
- Effective arbitration.

For purposes of dispute resolution, sponsor(s) and Lenders will usually prefer final and binding arbitration in a neutral forum and generally consider the United Nations Commission on International Trade Law (UNCITRAL) arbitration rules to be acceptable. The applicable arbitration rules are, of course, subject to negotiation by the parties. Host governments generally prefer the UNCITRAL rules, but many Asian projects use the rules of the London Court of International Arbitration (LCIA), the International Chamber of Commerce (ICC) or the International Center for the Settlement of Investment Disputes (ICSID).

Principles of Risk Allocation

Given the above interest of major parties, an important part of any project is the allocation of project risks. Each of the major participants approaches the risk sharing/allocation from the perspective of its own set of interests, as discussed above. The identification, analysis, mitigation and allocation of risk are crucial to the planning and success of every project. By structuring risk appropriately, the project participants can maximize the likelihood that the project will be successful. As a matter of principle, ***risk should be allocated, by contract or otherwise, to the party that is best able to mitigate or control such risk.*** Economic benefits may be, but are not always, adjusted in relation to the risks assumed. If the project vehicle is subject to relatively few risks, the return on investment should be lower.

Since Project Financing is a type of ***limited recourse financing,*** equity investors often are not willing to risk more than their initially committed equity and a limited amount of contingent equity. The project vehicle is expected to bear commercial risks (which in part, are transferred to contractors, suppliers or operators). The EPC contractor is expected to accept risks that are linked to the construction of the project facilities, and an O&M operator is expected to accept risks linked to the operation of the project. Typically, governments are willing to accept political risks in the host country: legislative changes; failures and interference of host government authorities; currency inconvertibility; general strikes and other non-project-specific labour-related interference; political unrest; war and similar events involving the host country, etc. Host governments do not normally accept the commercial or financial risks of a project except as may be the case indirectly, for example, through an off-take agreement.

Types of Risks and Mitigation Measures

The fair and equitable allocation of risks among the participants is a key element of a successful Project Financing. The various types of risks inherent in a Project Financing are identified as follows:

Completion risk. Completion risks are those associated with (a) failure to complete the project at all; (b) a construction delay and/or a cost overrun; (c) failure of the project to perform to technical specifications resulting in shortfalls in expected capacity, output, efficiency, etc.; (d) shortfalls in expected resources (reserves); (e) occurrence of a force majeure (FM) event leading to a construction delay and cost overrun; and (f) unavailability of qualified staff, managers and reliable subcontractors.

This is the single most important risk that is faced by the sponsor(s). Its mitigation measures include: (a) seeking performance bonds and/or guarantees from third parties covering the performance of the contractor, its suppliers and subcontractors; (b) obtaining adequate levels of commercial insurance; and (c) negotiating an adequate level of LDs for delays and performance. Appendix 5.1 introduces a methodology for determining the adequacy of LDs.

Credit risk. The perceived credit risk of a facility has a significant impact on the ability of the project to raise financing. It is the risk that the borrower will not be able to service its debt to the lenders. To assess this risk properly, it is necessary to examine the risks associated with the project's sources of revenue, including an assessment, for example, as to whether (a) payments from an off-taker may be interrupted due to an inability or an unwillingness to pay; or (b) in the absence of an off-take agreement, total revenue derived from its collective usage by the consuming public will be below expectation.

The ability of the sponsor(s) to mitigate these risks through the use of detailed market studies becomes critical in the risk-sharing process.

Marketing and operating risk. Once commissioning of the project is achieved, sponsor(s) must address other risks associated with the sale of its products. Market risk becomes significant for projects in the transportation sectors where user fees are a key source of project revenue. Sponsor(s) faces risks that (a) actual usage of, or demand for, services are below forecasted amounts; (b) unexpected competition develops; (c) tariff barriers are stronger than contemplated, affecting cost of inputs or ability to export; (d) physical access (i.e. transportation) and commercial access (i.e.

market entry) are denied due to government regulations or similar factors; (e) technology becomes obsolete; and (f) new technologies utilized by the project fail outright or result in cost overruns from delays. There is also the related risk of performance, i.e. whether the project will perform according to the expectations of the off-taker. For its part, the sponsor(s) can reduce this risk by operating the project efficiently through the use of experienced managers and staff (or an experienced operator) and the application of strong O&M programmes.

Mitigation measures include the negotiation of long-term, take-or-pay contracts (power, resource extraction projects); throughput agreements (pipelines);shadow tolling agreements (toll roads) or minimum deficiency guarantees (transportation projects). In the absences of such contractual arrangements, a number of additional sponsor support measures may be needed to make the project bankable, as discussed in Chapter **6.**

Financial **risk.** The potential impact of financial developments outside the control of the project is a source of project risk to both lenders and sponsor(s). These include the variability of (a) exchange rates; (b) interest rates; (c) world commodity prices which in turn affect energy supplies and raw materials; (d) decreases in world prices of the product produced by the project; (e) inflation; and (f) international trends in trade, tariffs and protectionism.

Mitigation measures include use of (a) currency swaps; (b) interest rate swaps; (c) commodity forward or option contracts; (d) hybrid debt instruments; (e) negotiation of tariff indexation and pass-through mechanisms; and (f) forward sales and option contracts. Chapters 2 and 11 discuss the use, respectively, of interest rate and currency swaps, debt hybrids and other techniques to manage interest rate, currency parity and commodity price risks. Chapter 5 addresses aspects of indexation and pass-through mechanisms found in off-take agreements.

Political **risk.** Political risk includes several components: (a) there are future changes to existing legislation related to tax, import duties, customs procedures, ownership, foreign exchange laws and environmental mitigation, leading to an adverse impact on the project; (b) a future administration decides to confiscate, expropriate or nationalize project facilities; (c) permits, licences and other consents from the government are not in place in a timely fashion or are not granted or maintained; (d) restrictions are placed on repatriation of profits and interest payments; (e) controls or restrictions apply on the rate of depletion of the project's reserves; (f) war,

revolution or political violence breaks out in the country, negatively affecting project performance; and (g) devaluation occurs in the local currency, leading to a reduced value of the dividend stream.

To mitigate these risks, sponsor(s) and lenders obtain (a) protection against change in law and similar events through the implementation agreement (IA) entered into with the host government; (b) political-risk insurance as an added cover; and (c) other undertakings from the government that licences and permits will be granted in a timely fashion and be transferable to lenders in the event of project vehicle default, and that all waivers would be granted for import duties and similar assurances. (See discussion in Chapter *6* related to the mitigation of risk through an IA.)

Legal **risk.** This risk is defined as the (a) inability to enforce security arrangements; (b) absence of adequate protection for intellectual property; (c) inability to enforce foreign judgements; (d) absence of a choice of law; or (e) inability to refer disputes to arbitration or to have a choice with regard to arbitration rules, venue and language. Mitigation measures for most of these risks are not always available and the contractual allocation of these risks to the parties that are most able to control or address them becomes critical. Chapter 12 discusses an approach used by lenders' counsel in mitigating legal risk.

Environmental and social **risk.** The preservation of the environment and the protection of the resettlement rights of individuals who are displaced as a result of the implementation of a project are increasingly becoming an important concern among governments, lenders and sponsor(s). Environmental risk relates to the failure of the project to comply with environmental and resettlement standards and regulations established by the government. Failure to comply could generally result in public outcry, project delay, litigation, and/or imposition of fines and penalties that increase project liabilities and raise lender concerns.

Mitigation measures applied by lenders include (a) requirement that an environmental impact assessment (EIA) and resettlement action plan (RAP) be prepared on the project by a qualified, internationally respected company; and (b) preparation of a plan to implement mitigation measures with regard to concerns identified in the EIA and the RAP, the costs of which are absorbed by the project. Environmental and social risks are discussed in more detail in Appendix **3.3.**

FM **risk.** This risk is created potentially by events outside of the reasonable control of the affected party to a contract, which it could not have pre-

vented by good industry practices or by the exercise of reasonable skill and judgement. In a typical Project Finance deal, provisions with regard to FM typically excuse the affected party from contract performance during the period that it is in effect. Nonetheless, there may be adverse financial effects on the project. Mitigation measures are usually negotiated between sponsor(s) and lenders or other third parties. An illustration of how FM risk is mitigated is provided in Appendix 6.2.

Further to our discussion above, Appendix 1.1 outlines the basic terms used in Public-Private Partnerships, a business arrangement found more frequently outside the US, while Appendix 1.2, through illustrations, compares and contrasts full recourse and limited recourse financing.

DIMENSIONS OF PROJECT FINANCE IN DEVELOPING COUNTRIES

Project Finance is common in industrial countries, discussed in Chapter 2, and emerging market countries. Particularly impressive, however, is the cumulative investment in infrastructure projects that has taken place in developing countries during the 1990s, as summarized in Figure 1.2.

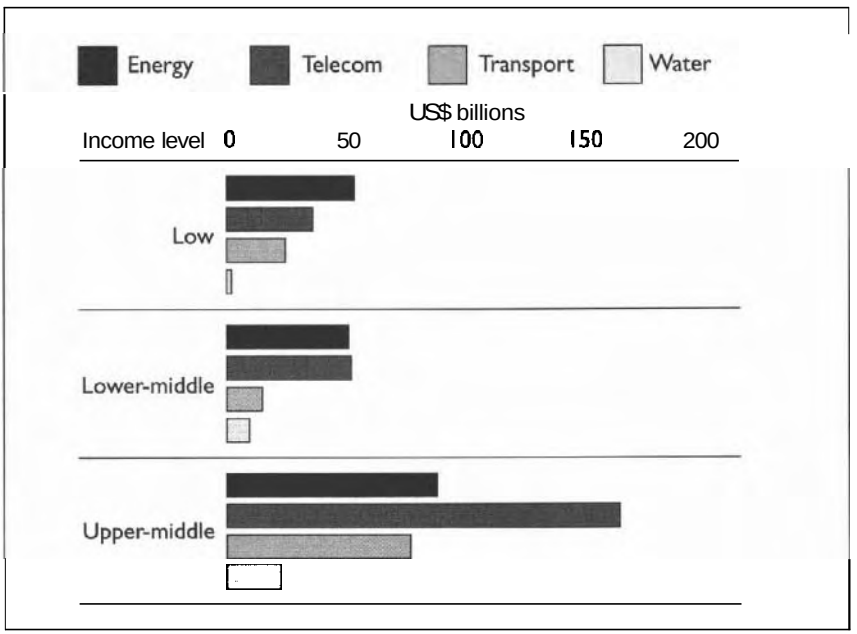
Outside the US and other industrial countries, the best known application of Project Finance is for privately owned infrastructure projects. "Infrastructure", as used in this book, includes power generation, oil and gas pipelines, telecommunications facilities (cellular and mainline), ports, roads, heavy and light rail equipment, airports, hospitals, prisons, water and sewerage and other similar facilities.

World Bank data indicate that the private sector undertook more than 1,900 infrastructure projects between 1990 and 2000 in developing countries involving a total investment in infrastructure of US$580 billion. From Figure 1.3, we can see that about US$180 billion went into greenfield construction and US$240 billion into divestitures. Well over one-half of the total investment is in countries classified as upper-middle-income developing countries[4]

World Bank data include statistics for projects that have achieved financial closing. The information captures new investment in: (a)telecommunications; (b)power generation and transmission; (c)natural gas trans-

[4] Income **Groups are defined in World Bank 2000 in terms of 1998 GNP per capita: (a)low-income, US$760 or less;** (b) **lower-middle income, from US$761 to** US$3,030; **(c) upper-middle income, from US$3,031 to US$9,360; and** (d) **high-income, US$9,361 or more.** High-**income countries include industrialized countries for which the World Bank does not monitor nor track investment.**

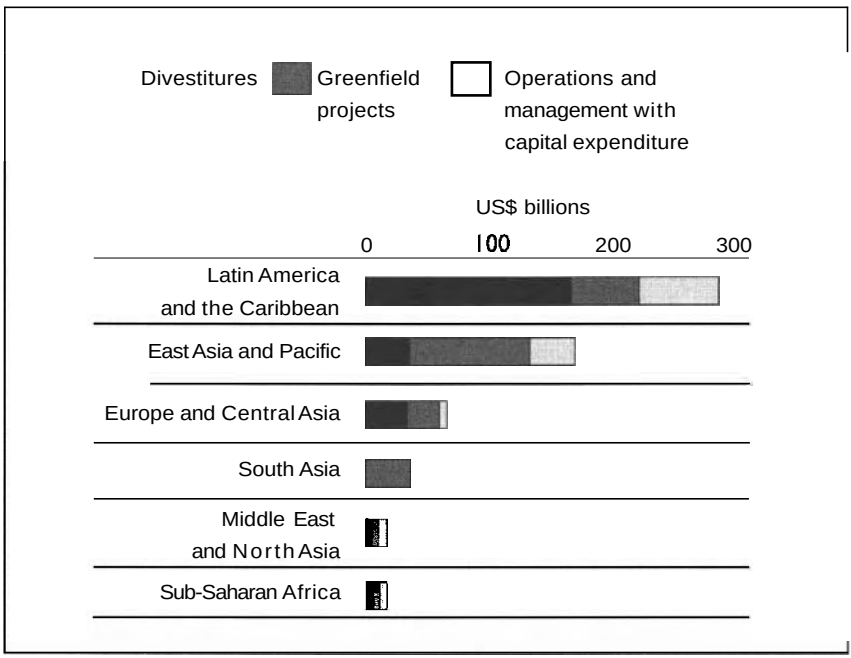
Figure 1.2 Cumulative Investment in Infrastructure Projects with Private Participation in Developing Countries by Type of Project and Income Group, 1990–99



Source: World Bank PPI Data Base, and Houskamp. Melissa and Tnan, Nicola, "Private Infrastructure: Are the Trends in Low-Income Countries Different!", The World Bank-Private Sector (www.worldbank.org), Note 216, October 2000, p. 1.

mission or distribution; (d)passenger and cargo transport through air, rail or road facilities; and (e)other municipal infrastructure such as bulk water treatment and supply, sewerage, solid waste disposal and other similar facilities. To qualify for inclusion in the statistics, an enterprise within the private sector must have contracted with government agencies, or ceding authorities, to accept completion risk, operations risk, or both. Less than half of these projects, however, involve the private sector's assumption of completion risk, but it is this subset which accounts for the lion's share of investment. Within this same subset are investments that require the private sector to build a greenfield facility, or expandlimprove the operations of an existing facility that has been privatized **(divested**project). Generally, it is the large greenfield projects that lead to the use of Project Finance as a technique to mobilize funds. Divested projects, on the other hand, require a different form of limited recourse finance, referred to as Acquisition Finance. There are some occasions, however, when a divestiture and greenfield project are financed in similar, if not identical, ways.

Figure 1.3 Investment in Infrastructure Projects with Private Participation in Developing Countries by Type of Project and Region, 1990–99



Source: World Bank PPI Data and Izaguirre, Ada Karina and Rao, Geetha, "Private Infrastructure: Private Activity Fell by 30 Percent in 1999", The World Bank-Private Sector (www.worldbank.org), Note 215, September 2000. p. 4.

Table 1.1 highlights the percentage of developing countries that have at least one infrastructure project with private participation, although it should he noted that it does not distinguish between greenfield and divested projects.

Noteworthy points in relation to this table are the following:

- With the exception of the Middle East and North Africa, 75% of all the countries in each region have been able to achieve financial closing on at least one privately owned infrastructure project.
- Perhaps surprisingly, 100% of the low-income countries in three regions – East Asia and the Pacific, Latin America and the Caribbean, and Middle East and North Africa – have at least one project under contract with a private operator. Taken together, 81% of all low-income developing countries fall into this category, a higher percentage than that applicable to the other income categories.
- Together, 77% of all countries falling into the lower-middle-income category have achieved financial closing on at least one private infra-

Table 1.1 Percentage of Developing Countries with Infrastructure Projects Involving Private Participation by Income Group and Region, 1990–99

Income group	Sub-Saharan Africa	East Asia and the Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	All regions
Low	76	100	83	100	100	67	81
Lower-middle	67	70	86	81	67	100	77
Upper-middle	80	50	88	73	80	NA	76
All income groups	76	77	86	79	73	75	78

Source: World Bank PPI Data Base, and Houskamp, Melissa and Tnan, Nicola, "Private Infrastructure: Are the Trends in Low-Income Countries Different?", The World Bank-Private Sector (www.worldbank.org), Note 216, October 2000, p. 2.

structure project. Essentially, this means that a higher proportion of lower-middle- and low-income developing countries, as discussed above, have been able to close on a private infrastructure deal than is true for the upper-middle-income countries. This undoubtedly reflects the work of the multilateral and bilateral institutions that are active in the financing of projects located in low-income developing countries, a subject we will return to in Chapters 4–6.

Table 1.2 identifies the types of projects and their investment volumes by sector, region and year throughout the 1990s. A close examination leads to the following conclusions:

- The most substantial investments have been made in telecommunications, energy and transport, in that order.
- Geographic regions receiving the most investment include Latin America and the Caribbean, East Asia and the Pacific, and Europe and Central Asia, in that order. With the exception of China, a country that falls into the low-income category, the countries that are in these regions are among the most developed.

Investment into developing country infrastructure topped up in 1997 and, due to the Asian financial crisis, tailed off somewhat in 1998 and perceptibly in 1999. However, investment was still strong in the Latin American and Caribbean regions in 1998, the bulk of which went into the telecommunications sector. This was the year that Brazil divested Telebras, the national telecommunications company, for an unprecedented US$19

Table 1.2 Total Investment in Infrastructure Projects with Private Participation in Developing Countries by Sector, Region and Year, 1990–99

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
Sector											
Telecommunications	6.7	13.3	8.1	11.0	19.6	24.0	29.9	42.8	54.3	39.2	249.0
Energy	1.6	1.2	12.1	14.6	17.0	24.1	33.7	47.9	25.7	14.9	192.8
Transport	8.0	3.1	4.2	7.7	8.2	10.1	16.5	22.4	17.6	8.4	106.1
Water and sanitation	—	0.1	1.9	7.5	0.7	1.7	2.2	8.9	2.6	5.9	31.4
Region											
East Asia and Pacific	2.6	4.1	8.9	16.2	17.7	23.4	33.4	38.8	9.5	14.1	168.6
Europe and Central Asia	0.1	0.3	1.3	1.5	3.9	8.6	11.6	15.1	11.5	8.7	62.5
Latin America and the Caribbean	13.2	12.6	15.8	18.5	18.9	19.4	28.8	51.1	71.0	36.3	285.6
Middle East and North Africa	0.0*	—	0.0	3.4	0.3	0.1	0.4	5.3	3.5	2.4	15.3
South Asia	0.3	0.8	0.1	1.3	4.0	7.6	6.1	7.1	2.3	4.0	33.5
Sub-Saharan Africa	0.1	—	0.1	0.0	0.7	0.8	2.1	4.5	2.4	2.9	13.6
Total (US$ billions)	16.3	17.8	26.1	40.9	45.5	59.9	82.3	121.9	100.2	68.5	579.3

— None.

* 0.0 means zero or less than half the unit shown. Data may not sum to totals because of rounding.

Source: World Bank PPI Data Base and Izaguirre, Ada Karina and Rao, Geetha, "Private Infrastructure: Private Activity Fell by 30 Percent in 1999", The World Bank-Private Sector (www.worldbank.org), Note 215, September 2000, p. 3.

billion. The sale effectively marked the decade's high point for international investment flows into developing countries with amounts receding substantially thereafter.

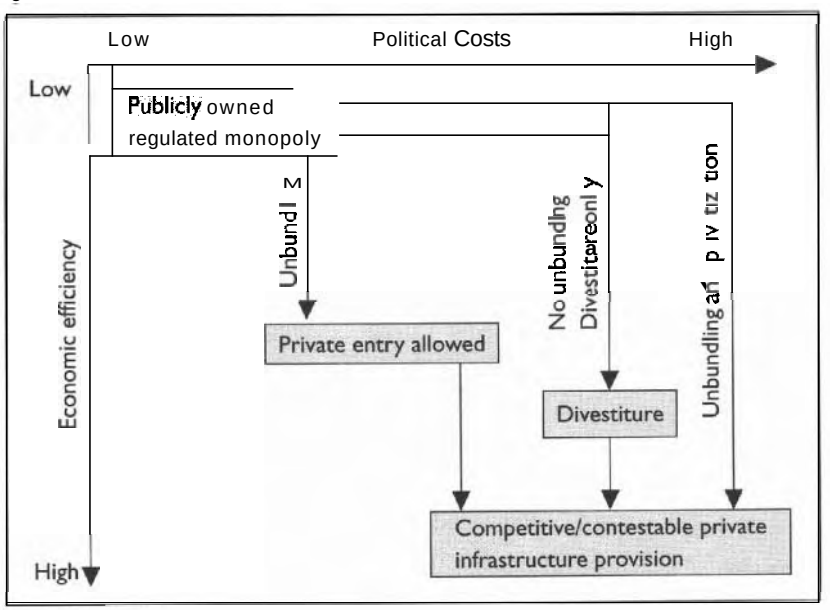
Generally, individual countries attracting the largest investment flows are those that have taken the most difficult transition paths with regard to the privatizing of infrastructure. This involves unbundling the sectors: deregulating activities and privatizing existing facilities.

Figure 1.4 shows the transition paths in infrastructure privatization in relation to economic efficiency and associated political costs.

Unbundling the sector may involve vertical unbundling and horizontal unbundling.

Vertical unbundling occurs when upstream activities are separated from downstream ones. For example, in the power sector, the generation of power may be separated vertically from the transmission and distribution func-

Figure 1.4 Transition Paths in Infrastructure Privatization



Source: International Finance Corporation, "Lessons of Experience # 4: Financing Private Infrastructure", 1995–96, p. 5.

[5] "Unbundling" refers to a process of segregating sector activities into subsectors (e.g. power sector can be unbundled into three subsectors: (a) generation; (b) transmission; and (c) distribution) with the objective of permitting different levels of private participation, regulation and/or competition in each, for the benefit of the consumer.

tions. Once these functions are organized into separate companies and an independent regulatory commission is formed, the government may decide to privatize the generation and distribution companies it has created but not transmission, since transmission may be regarded as a true monopoly function. ***New*** investment in greenfield generation may be permitted either by the newly organized private companies or by new entrants, depending upon rules and procedures created by the independent regulatory commission.

Horizontal unbundling takes place when one or more parallel activities of a monopolist provider are divided among separate companies, which may either compete directly with one another or may be permitted to retain a monopoly over a smaller territory. For example, instead of continuing with one public-sector-owned and -controlled telecommunications utility, a country may reorganize its communications sector by spinning out the domestic fixed-line and the international fixed-line telephone systems from the national telephone utility. Other companies may be created as well.

Comprehensive Sector Reform

Comprehensive Sector Reform generally involves simultaneous vertical and horizontal unbundling. The discussion in Box 1.1 illustrates, step-by-step, the typical process followed by governments in putting a comprehensive sector reform programme into place. The reader will note the early focus in creating an enabling legal framework (step 1); creation of an independent commission to regulate the sector (step 2); the unbundling of the sector by creating several companies (spinoffs) from the national utility (step 3); and restructuring the spinoff companies (step 4). Later processes involve privatization through the sale of a portion of the spinoff to a strategic investor (steps 5 and 6) and subsequent implementation of investment programmes by the newly privatized spinoffs (steps 7 and 8). The sector reorganization may have to be done over a transitional period where tariffs are initially defined by the regulator. Normally, these are set at a level that permits the strategic investor reasonable certainty that it will recover (a) operating costs; (b) capital costs associated with share and new equipment purchases; and (c) a reasonable dividend stream on its investment.

Certain observations should be made in respect of the above example. As implied previously, there are many different approaches to unbundling and the above example is only one illustration. For example, if the country is large enough, fixed-line domestic telephony may be reorganized into several regional companies, each of which is able to provide local and interna-

tional telephone service, and all of which have open access to the network. In such a case, there may be no need to create a dedicated international fixed-line telephone company. Moreover, if cellular services are provided by the state-owned utility, these services may be bundled into yet another company.

Box 1.1 Step-by-step Process of Reforming the Telecommunications Sector

Action by government or private sector	Response triggered by initiating action
Step 1 Update Telecommunications Act.	Examples of content include: • Broad guidelines in respect of the degree to which free competition is allowed during and after transition. Philosophy guiding interconnectivity between network operator and others. • Timetable with regard to the horizontal and vertical unbundling of national telephone utility and its privatization. • Definition of a transition period during which limited competition will apply while the sector is evolving towards its desired structure.
Step 2 Create an independent commission to regulate the market.	Regulator is mandated to establish clear operating rules of the game as regards: • Interconnectivity rules and fees. • Quality of service standards. • Management of scarce resources such as spectrum frequencies or numbering. • Extent of reliance on market to control prices, during and after transition. • Clear enunciation of timeframe for transition and competitive rules applying in each period.
Step 3 Prior to their privatization, create a handful of companies from the vertically and horizontally integrated domestic state-owned telecommunications company.	An example of unbundling the sector is the spinoff of the following: • Domestic fixed-line telephone company, capable of offering domestic, local and long distance service. • International fixed-line long distance company operating gateway and interconnectivity abroad.

Box 1.1 (continued)

Action by government or private sector	Response triggered by ...g action
	▪ Company responsible for modernization, maintenance and build-out of network, providing typical bearer services, e.g. leasing of lines. • Ancillary services company responsible for operation and maintenance of public (pay) telephones, maintenance of public directory services, and perhaps, a variety of others. e.g. facsimile.
Step 4 Restructure the spinoff companies to enhance their attractiveness prior to sell-off.	The following is an illustrative, but relatively common pattern to restructuring in order to maximize the attractiveness of the companies chat are to be sold: • Ensure assets, debts and share-holder accounts of state-owned utility are allocated fairly to spinoffs. • If resulting debt-equity ratio of the spinoff companies is, excessive, all (or a portion of) state-owned debt may be converted into equity. • Long-term concession, or licence, other permits and consents are issued by regulator to spinoffs. • Transitional tariffs are established by the independent regulatory commission designed to allow spinoffs to generate adequate cash flow, recover new investments and make profits. • Long-term contracts are created between spinoffs, where appropriate, e.g. capacity will be leased by the network company to operators, reflecting tariffs approved by regulator.
Step 5 Determine sell-off strategy.	Government, with its financial advisor, decides how best to conduct sale: ▪ Key issue is whether government's objective is to maximize price of shares or size of investment programme and how much weight to give each component.

Box **I.I** (continued)

Action by government or private sector	Response triggered by initiating action
	▪ Among other matters, strategic partners are informed by the tendering documents what transitional arrangements have been put into place to guide the sector's evolution during and after transition. Each spinoff may lose its monopoly after transition period when competition (subject to considerations related to monopoly) is open and free. • The network company may be privatized last. after the other three companies (domestic fixed line, international fixed line and ancillary services) are privatized since the identity and investment plans of the new strategic partners will be known by then. • Because of the existence of off-take agreements, the permanent financing put in place, particularly for the network company, will look like a Project Finance structure.
Step 6 Conduct the tender. While government may be willing, or may be forced, to cede control of the management of these new companies, they will normally retain some percentage of shareholding.	Apart from experience and reputation of the strategic partner(s), evaluation of offers may focus on (a) price offered for the shares that are being sold; (b) strategic partners' proposed "vision" and investment programme; or (c) a combination of both.
Step 7 The new, privately controlled companies launch a major investment programme of their own.	For the strategic partner, the purpose of the investment programme is multifold, including some or all of the following: (a) modernize corporate infrastructure as per commitments made in bid and formalized in licensing or concession agreement entered into with regulator; (b) improve existing customer services or introduce new ones as permitted by regulator during transition; and (c) consolidate market position and dominance within franchise area prior to the end of the transition period.

Box 1.1 (continued)

Action by government or private sector	Response triggered by initiating action
Step 8 The four privately controlled companies carry out expansion work, some of which is done on a corporate finance basis, while some on a Project Finance basis.	Relatively few Project Finance opportunities initially, because market is untested and in transition stage. Under transitional reform conditions, the following businesses may not be finance-able using Project Finance techniques: equipment manufacturers (if any), ISP offering Internet access, commercial online service providers or sophisticated business services, cable TV, and video service companies. Some examples of investment that may be made in the host country on a Project Finance basis include the following: • Domestic network build-out because other operators will commit to leasing future capacity addition on a long-term basis. • International submarine cable, or satellite, capacity to further expand the capacity of domestic operators to service their customers. Expansion of network into fibre optics, as this will lead to new services based on broadband technology, e.g. in Internet access, video and cable. Fixed-line extension programme in a major metropolitan city, if the demand is there and the area has been excluded from the franchise of the national service provider.

Post-transition, some or all of these companies, may he allowed to compete against each other. Generally, however, the network company will be more restricted than the other companies in the range of future activities that it can undertake. In addition, the regulator may take the approach of allowing competition to determine the tariffs for the competitive companies within the sector, such as domestic and international fixed-line telephone services, while continuing to determine the tariff for the monopolistic elements of the sector, such as the network company.

Countries that have unbundled large segments of their telecommunications, power or transport sectors include, among industrialized countries,

the US, UK, Norway and Australia; in the Latin American and Caribbean regions, Brazil, Argentina, Mexico and Chile; and in the East Asian and Pacific regions, China, Malaysia and the Philippines. This has created extensive opportunities for Project Finance and led to its globalization.

Consequences of Globalization

Globalization of Project Finance has been accompanied by several noteworthy developments:

- Virtually every important institution in the international financial markets is involved in Project Finance, including, aside from host governments, investment banks, commercial banks, export credit agencies, multilateral and bilateral institutions, collective investment funds and stock exchanges. Also, Project Finance deals attract every conceivable type of offering, including third-party equity, convertible debt, construction loans, long-term loans, backstop facilities, finance leases and tax-oriented leases as well as project bonds.
- Emphasis on risk sharing, outlined further below and discussed in greater detail in Chapters *5–6*, has made Project Finance a useful means for investors, creditors and other unrelated parties to share the costs, risks and benefits of new investment in an economically efficient, transparent and fair manner.
- The host country's financial markets, discussed further in Chapter 4, have proved to be reliable participants in the mobilization of local currency debt and equity resources for greenfields and divestitures, especially in the richer, more developed countries. Similar projects in low- and middle-income developing countries continue to be financed largely by foreign equity and debt.
- Governments have moved beyond the power and telecommunications sectors, which as previously mentioned, have captured the preponderance of interest thus far, to introduce policy reforms aimed at attracting investment into other sectors, e.g. water supply and wastewater treatment as well as a variety of transport projects.

Review Questions

1. Distinguish between Project Finance and other forms of Corporate Finance. Discuss the unique characteristics of the former relative to more traditional lending.
2. What advantages and disadvantages are there in the application of Project Finance to small or large projects?

3. What does the term ***with full*** recourse mean? Limited recourse?
4. Which of the following projects are not likely to involve Project Finance: (a) supermarket; (b) defence installation; (c) automobile manufacturer; (d) downstream extension of an existing plant; and (e) toll road. Give reasons.
5. Identify the major project participants found in Project Finance deals.
6. Explain the major types of risks that are usually allocated among the various project participants. What principle is used in allocating such risks?
7. Distinguish between Build-Operate-Transfer (BOT) and Build-Own-Operate (BOO) methods of private participation in the provision of infrastructure (see Appendix 1.1). From the perspective of government, how is choice rationalized as between the two methods? What is the preference of the private sector in this regard?

APPENDIX 1.1

TERMINOLOGY OF PUBLIC-PRIVATE PARTNERSHIPS

Acceptance of private participation in the provision of basic infrastructure is growing all across the world, in virtually every area. The trend has given rise to a form of public-private partnership that was non-existent up to a few years ago but is now highly formalized. In support of this partnership, several generic contractual arrangements have been developed, particularly in emerging market countries, as discussed below.

Build-Operate-Transfer (BOT)

The BOT model is used when the government seeks to eventually acquire, by transfer, an asset that has been developed, constructed and operated for a fixed term by the private sector. A BOT project involves a grant by the host government to private sector parties of a right (based on a contract, licence or concession) to own and operate a project for a determined length of time, often up to 30 years and sometimes more. Private parties develop, build, operate and manage the project for the duration of the agreed term, subsequent to completion of construction, with the goal of recouping construction, operation and financing costs, and making a profit. At the end of the contract term, the project is transferred to the host government.

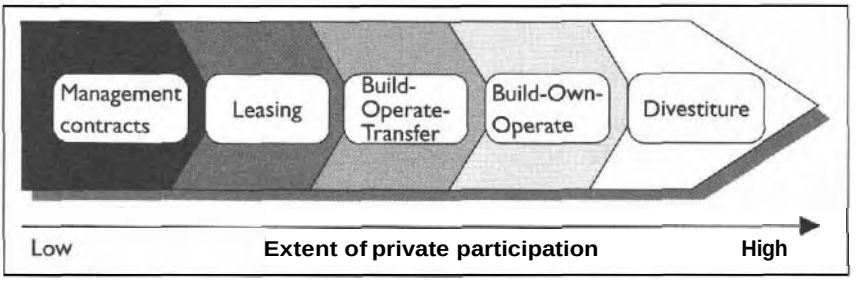
BOTs are attractive to governments that have not decided to withdraw totally from the provision of infrastructure services to the consuming public. In this respect, two features of the BOT model should be considered. First, the host government to whom the project is transferred should have the managerial expertise and technological capability to effectively control and operate the project. Second, the contracts should create incentives for the private sponsor(s) to ensure that the project, at the time of transfer, will be capable of being operated economically and efficiently for its expected remaining useful life.

Since the government has a potential ownership stake in BOT, its risk-sharing involvement in this type of project, as shown in Figure A1.1 is more significant, i.e., it should be willing to absorb more risk than would be the case for a Build-Own-Operate (BOO).

Build-Own-Operate (BOO)

BOO arrangements differ from BOTs in that there is no transfer of the project to the off-taker or government at the end of the concession period.

Figure A1.1 Private Involvement in Infrastructure



Source: International Finance Corporarion. "Lessons of Experience #4: Financing Private Infrastructure", 1995–96, p.46.

The project is developed, constructed, owned and operated by the sponsor(s) for as long as it has a contract, concession or licence to do so. BOOs are attractive to governments interested in removing themselves altogether from providing infrastructure services to the public.

Several variations in both BOOs and BOTs have emerged in the past decade. These allow sponsor(s) a variety of options to participate in infrastructure development and permit governments a range of options in mobilizing private capital for modernizing infrastructure systems, a few of which are described below:

- Supply-Operate-Transfer (SOT). The manufacturer of equipment and machinery for a given infrastructure facility builds and operates the plant, providing in the process technology transfer and training to nationals. After a predefined period, the supplier transfers the facility and its operation to the government.
- Build-and-Transfer (BT). A construction management firm undertakes the financing and construction of a given infrastructure facility and, upon its completion and acceptance, transfers its legal title to the government agency or local government unit which commissioned it. The latter pays the contractor on an agreed schedule its total investments expended on the project, plus a reasonable rate of return on capital employed thereon. This arrangement may be used in the construction of any infrastructure or development project, including critical facilities that, for security or strategic reasons, must be operated directly by the government.

  Build-Lease-Transfer (BLT). A sponsor(s) is authorized to finance and construct an infrastructure or development facility and, upon its completion and acceptance, transfers ics legal title to the government agency or relevant local government unit. It then enters into a sale and lease-

back of the facility over a fixed period. At the conclusion of the lease, the government agency or relevant local government unit may assume ownership and operation of the facility.

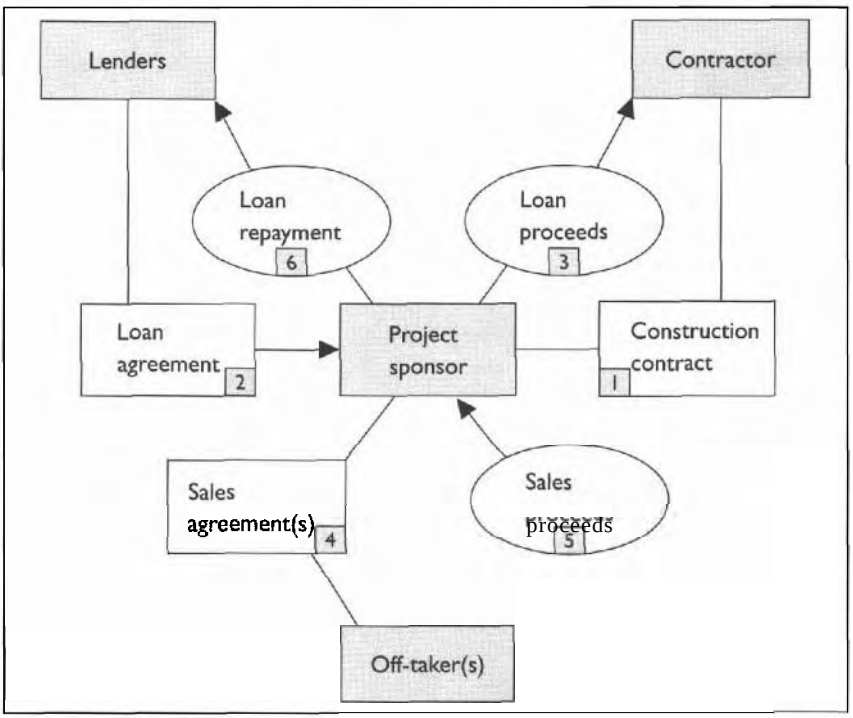
- Build-Transfer-Operate (BTO). Pursuant to a contract with a public sector entity, a private contractor builds an infrastructure facility on a turnkey basis, assuming cost overrun, delay and specified performance risks. Once the facility is commissioned satisfactorily, title is transferred to the implementing agency. The private entity, however, assumes the operation of the facility on behalf of the implementing agency under a separate operating agreement.
- Build-Develop-Operate-Transfer(BDOT). This is a contractual arrangement whereby additional rights and benefits are awarded to a sponsor(s) in return for building an infrastructure project, thereby giving the latter the right to enjoy income from two, or even more, developments. (For example, the sponsor(s) is commissioned to build a road and is granted the additional right to build and operate restaurants off the roadway, or to sell advertisement space.) This type of arrangement is used when the revenues from the infrastructure facility are not attractive enough on their own to attract private interest in the arrangement.
- Rehabilitate-Operate-Transfer (ROT). In this option, an existing facility is turned over to the private sector to refurbish (rehabilitate), operate and maintain for a franchise period, at the expiration of which the legal title to the facility is turned over to the government. The term is also used to describe the purchase of an existing facility from abroad, importing, refurbishing, erecting and operating it within the host country.
- Rehabilitate-Own-Operate (ROO). In this case, an existing facility is turned over to the private sector to refurbish and operate with no time limitation imposed on ownership. As long as the operator is not in violation of its franchise, it can continue to operate the Facility in perpetuity.

APPENDIX 1 2

THE CONTRACTUAL FRAMEWORK

Figures A1.2.1 and A1.2.2 provide a visual description of the contractual structure of a BOT project, identifying the basic project and finance docu-

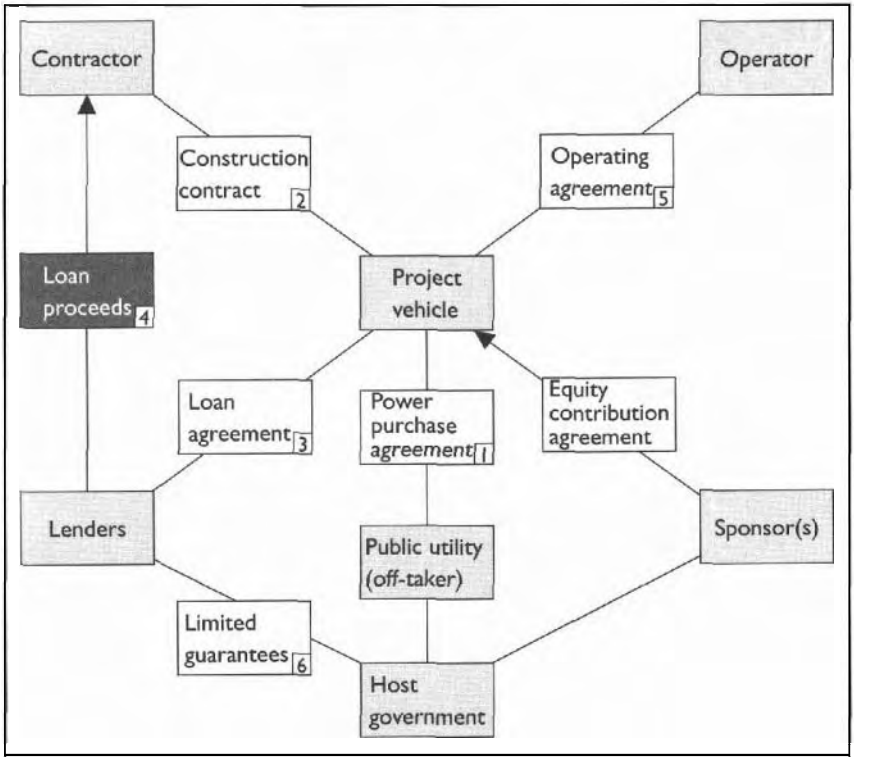
Figure A1.2.1 Full Recourse Structure[6]



[6] Summary:
Under "full recourse", sponsor(s) remains 100% liable for debt service payments, and thus the lenders rely on the general credit of the sponsor(s) for loan repayment and price the financing in line with its creditworthiness.
Steps:

1. The sponsor(s) enters into an EPC contract with the contractor for construction of the project.
2. The sponsor(s) enters into a loan agreement with the lenders.
3. Loan proceeds from the lenders are used by the sponsor(s) to finance construction of the project.
4. Once the project is completed, the project output is sold to one or more off-takers, pursuant tn the off-take agreement.
5. Proceeds generated by product sales are paid directly to the sponsor(s).
6. Amounts due under the loan agreement are paid from the general cash resources of the sponsor(s).

Figure A1.2.2 **Limited Recourse Structure**[7]



Source: Based on material prepared by the US Project Finance law firm of Hunton and Williams for a lecture series delivered in February 2000.

'Steps:

1. From Figure A1.2.2, the project vehicle and the off-taker enter into a power purchase agreement granting the project vehicle a long-term right to build and operate a power generation plant. The off-taker agrees to purchase power through capacity and energy payment, and the project vehicle grants the off-taker an option to purchase the project after a certain number of years.
2. The project vehicle enters into an EPC contract with the contractor for construction of the project.
3. The project vehicle enters into a loan agreement with the lenders; debt service is to he made from the revenue generated under the power purchase agreement with the off-taker.
4. Loan proceeds are used to finance construction of the project.
5. The project vehicle enters into a long-term O&M contract with the operator to operate the project post-completion; payments due to the operator are made from the revenue generated under the power purchase agreement with the off-taker.
6. To secure the off-taker's obligations under the power purchase agreement with the project vehicle, assuming the off-taker is owned by the host government, the latter may enter into an IA with rhe lenders.

mentation involved for projects located in developing and, with minor exceptions, industrialized countries.

Figure **A1.2.1** shows a full recourse structure while Figure **A1.2.2** shows a limited recourse structure. In the first case, it is the sponsor(s) that undertakes the project with full recourse to the lenders; in the second, it is the project vehicle, organized by the sponsor(s), that does so on the basis of limited recourse to lenders.

Figure **A1.2.2** also provides a complete outline of the BOT documentation structure. The structure and nature of the host government support to a project located in a developing country are discussed in Chapter 6.

CASE STUDY

HARD QUESTIONS BY THE PC

You are an advisor to the Privatization Commission (PC)of country X and you are responsible for the unbundling and restructuring of the telephony sector. The Commission consists of seven members all drawn from the private sector who are trying to understand the step-by-step process that you have outlined for the purpose of eventually promoting more competition in the sector. You, as team leader, and your team, in separate formal hearings, are asked the following questions related to the private sector. How would you answer them?

(Note: You may assume for the purposes of this case study that all of the debt that has been assumed by the national utility, prior to its reallocation to the spinoffs, is owned by the state, and not by banks or other commercial institutions, and that the step-by-step approach to unbundling and restructuring of the telephony sector that has been put forth to the PC is identical to that shown in the example you came across earlier.)

Questions

1. Explain why it is necessary to create an independent regulatory commission and to define the rules of the game for ten full years.
2. Why is it necessary to consider converting a portion, or all, of the state-owned debt into equity when restructuring the spinoffs?
3. When evaluating bids that are delivered by recruiters, should the evaluation be weighted more heavily towards share price, capital investment programme or equally to both? What factors influence this decision?
4. Why should the capital investment programme committed by the strategic investor be structured in the form of debt rather than equity?
5. What will be the function of the network company during transition? Post-transition? Why is it necessary to restrict its commercial activity? Why will tariffs continue to be set for this company by the regulator, post-transition?
6. Would it not be more appropriate to have several network companies competing with each other, post-transition, thereby obviating the need for the regulator to set tariffs for this activity?
7. Is it truly necessary to have all of the contractual arrangements between the spinoffs, as well as all permits and consents, in place prior to conducting the tender?

8. Why are you recommending that the network company be sold off last?
9. What safeguards should be put into place, post-transition, that will prevent one or more companies from dominating the sector as monopolies, which would defeat the purpose of this restructuring?
10. Why do you assume that there are likely to be more Project Finance opportunities, post-transition?

chapter 2

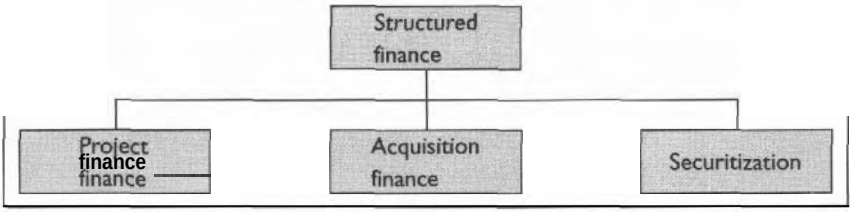
ORIGINS AND APPLICATIONS OF PROJECT FINANCE

INTRODUCTION

A discussion on the modern origins of Project Finance encompasses the evolution of at least two other products (approaches) related to limited recourse finance: Acquisition Finance and Securitization' (see Figure 2.1). Project Finance is the oldest of the three, reintroduced into the US financial markets early in the post-World War II period. Since then, and as we will see later in this chapter, the Project Finance approach to mobilizing debt has been applied on a global scale to a wide variety of economic activities.

Apart from the attribute of limited recourse which they share, the three products have a number of additional common characteristics. For example, to perfect the legal separation of the sponsor(s) from the proposed commercial undertaking, and thereby preserve the limited recourse attribute of the financing, all involve the use of a newly created shell company (or project vehicle). Often, the proposed capital structure of the project vehicle is highly leveraged, or geared, compared to traditional industry financing standards, i.e., the amount of debt mobilized is high relative to the amount

Figure 2.1 Three Approaches to Structured Finance



'Arguably, this distinction is arbitrary. Some authors would include venture capital as limited recourse financing. The authors do not include venture capital in this category because it usually does not involve the mobilization of straight debt.

of committed equity. For this reason, the repayment of debt is structured, that is, debt amortization is "tailored" to forecasts of revenue, operating costs and tax payments. Nonetheless, through negotiation with the sponsor(s), the rate of amortization provides the sponsor(s) with an opportunity to capture a portion of free cash flow (FCF) through dividends or other participations, and hence earn an expected return on invested capital. For purposes of this book, FCF is defined as the liquid balances available to the project vehicle after all its obligations, including debt service, are met. It differs from cash available for debt service (CADS), defined as the amount of cash available to service debt after all essential operating expenses have been met.

The appropriate balance between sponsor(s) and lender returns is a source of great tension in a Project Finance negotiation. Generally, lenders will not place themselves in a position where debt recovery is more uncertain than investor returns. They do, as discussed subsequently in Chapters 8–10, permit the payout of FCF as dividends, provided the sponsor(s) meets certain conditions designed to keep the project vehicle financially solvent, including the ability to meet its current and projected obligations. Lenders initially and sponsor(s) thereafter (and only after project vehicle debt is fully paid out) control the project vehicle's FCF. This distinction is critical because in traditional corporate financing it is the ***corporate managers,*** rather than ***lenders*** or ***investors,*** who have significant, if not total, discretion over FCF.

There are differences between the three financial products as well. Each serves a different purpose and features a different approach. A Project Finance mobilizes ***debt*** and passive ***equity*** for a greenfield facility. During the construction period, interest is rolled up and capitalized. Acquisition Finance mobilizes ***debt, quasi-equity*** and ***equity*** to purchase an operating company pursuant to a divestiture or merger, while Securitization mobilizes ***debt*** and ***quasi-equity*** from investors for the purchase of a company's receivables such as bills, notes and loans. For the latter two, there is no construction period and roll-up of interest during this period. All three financial products ***may involve*** the financing of a commercial activity with a finite life, i.e., an operating life limited by the project vehicle's organizational documents. There are exceptions to this rule, particularly in Project Finance and Acquisition Finance. Project Finance typically uses only two layers in its capital structure: senior debt and equity; Acquisition Finance may use three or more. However, when needed, all the products, including Project Finance, rely on the use of complex capital structures involving multiple layers of debt and quasi-equity, with each layer representing a different priority claim on CADS, or for that matter, FCF. Establishing clear

understanding among the parties with regard to these priorities is one reason why limited recourse financing is sometimes referred to as structured finance.

Early Project Finance

The first recorded use of Project Finance was probably in 1800 BC, some 4,000 years ago. Under the Code *of Hammurabi*, ship-owners used to raise money for vessel construction using a form of mortgage finance known as bottomry. The loans were paid back from the revenues derived from commercial trading. If the ship were lost during a voyage, prior to the full repayment of loans, any remaining balances due to the lender were discharged.[2]

Although the principles of extending debt capital have differed over many centuries since then, the financing of discrete economic activity was the rule in banking until 325 years ago. With regard to trading expeditions, cargoes and ships were liquidated at the end of each voyage with the profits divided among the investors. A new voyage required new efforts to solicit old or new investors. Some investors might have specialized willingly in this type of financing and were available for future investments. It is likely, however, that they made decisions on an ad hoc basis, presumably after a full evaluation of the financial objectives of the next trading expedition and the returns to be obtained from its undertaking.?

Once trading became continuous, rather than on an ad hoc basis, a need for permanent capital became the rule rather than the exception. Companies or individuals could no longer afford to return capital to investors at their option if their ships and inventories were constantly at sea. Both the Dutch East India Company and the British East India Company began operations under charters that authorized investors to withdraw their capital at will. That privilege was suspended in 1612, but it took another 50 years before the purchase of stock certificates, and the right of the professional corporate managers to dictate the pace of return on this permanent capital, became accepted by the markets.[4]

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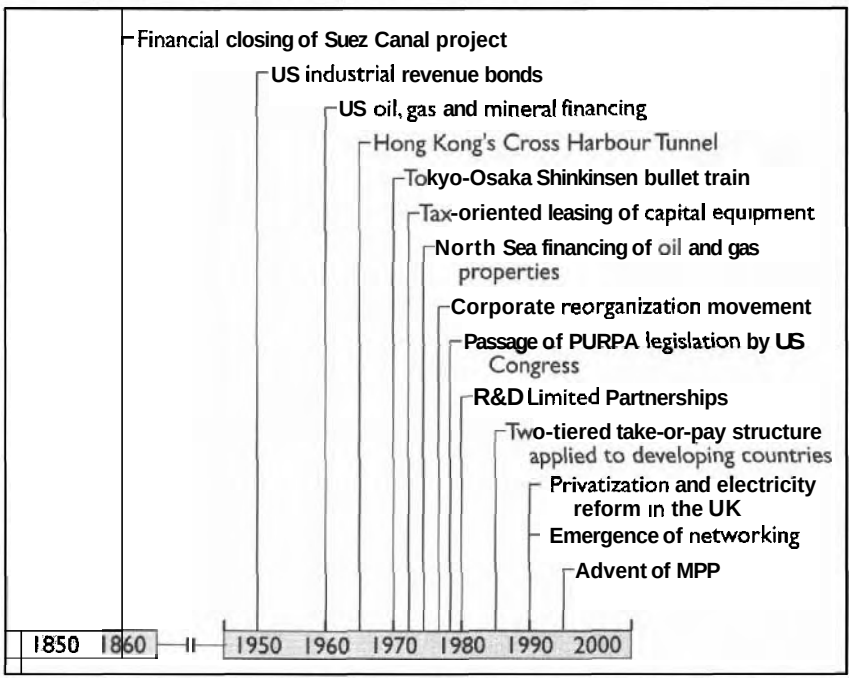
[2] Bernstein, *Peter L., Against the Gods: The Remarkable Story of Risk, JohnWiley & Sons, 1996,* p. *92.*

[3] Kensinger, *John W. and Martin, John D., "Project Finance: Raising Money the Old Fashioned Way", in The New Corporate Finance: Where Theory Meets Practice, ed. Donald H. Chew,* Jr., McGraw-Hill, *1993,* p. *326.*

[4] Ibid.

Project Finance appears to have receded from the public record as the concept of permanent capital took hold, As shown in Figure 2.2, it made its reappearance in the middle of the 19th century, very likely for the first time in 200 years, with the financing of the Suez Canal in 1858. The Suez Canal transaction was a precursor of ***infrastructure*** Project Finance deals of today, although it contained some marked variations from current deals. For example, the Anglo-French concessionaire, which was its sponsor, was awarded a 99-year concession to build, operate and maintain the canal by the Government of Egypt, whereas today's concessions rarely last longer than 30 years. Also, it took 11 years from financial closing to its commissioning on 17 November 1869. It is doubtful that sponsor(s) of major infrastructure facilities would experience success in raising money today for such an extended construction period.

Figure 2.2 Project Finance Timelines



Source: A variety of historical and trade references.

Post-World War II Project Finance

Project Finance today is a product of the corporate reorganization or corporate control movement currently reshaping a number of economic sectors within the US and the industrial economies in Europe and Asia-Pacific

regions.' This chapter will focus on the expanding requirement for Project Finance stimulated by corporate restructuring and other developments, including:

- Regulatory and technological drivers fuelling corporate reorganization. The corporate reorganization or control movement, among other effects, has led to the divestiture of companies in mature industries for sale to third parties willing to pay a premium relative to the stock market, or current owner's, evaluation of the company. The eventual sale of the company to third parties has meant that its current shareholders recapture what otherwise might have continued to be "permanent" investment. This new liquidity, has often been recycled by the beneficiaries into new investment vehicles, or funds, specializing in finite-life investment funds dedicated to venture capital, research and development, corporate acquisitions and Project Finance.
- Innovation in Project Finance applications. Arguably, the earliest example of modern Project Finance involves the financing of US municipal and regional infrastructure through the issuance of industrial revenue bonds (IRBs). A later advance during the 1960s was developed for the financing of US oil, gas and mineral properties. In the late 1960s, as a harbinger of things to come, a noteworthy development was the mobilization of Project Finance for two infrastructure projects – one in Japan, the other in Hong Kong. In the 1970s, the technique continued to be applied to large, very complex, transactions, e.g. the tax-oriented leasing of capital equipment in the US, UK and Japan and the financing of oil and gas properties in the North Sea. During the 1980s, the approach was extended to the financing of US power generation plants stimulated by the US Public Utility Regulatory Policy Act (PURPA) of 1978. This was followed in the 1990s by a great extension in the application of Project Finance, by project type, in the UK under the Private Finance Initiative (PFI), as well as geographically throughout the developing world through efforts made by the World Bank and other donors. Simultaneously, the first attempts to mobilize debt for merchant power plants (MPPs) were made in the UK, Norway, Chile, Australia, Argentina and, eventually, the US using modified Project Finance approaches.

'The discussion in this chapter focuses on the Anglo-Saxon perspective of Project Finance. It should he recalled that banks in Continental Europe and Japan traditionally have been the principal suppliers of corporate finance services to corporations (including, quite possibly, Project Finance services in some form or other). Banks in the US, UK, Canada and Australia, historically, have been more oriented towards short-term lending with the investment banks and capital markets servicing corporate needs for long-term finance.

- Milestones outlined in Figure *2.2* consisting of individual projects, legislation or simply corporate trends significant to the evolution of Project Finance.

To aid in organizing our discussion of these developments, we segregate our discussion in this chapter into three distinct time periods: 1955–78, 1978–90 and 1990–present. Sources of finance supporting Acquisition Finance in the US is also discussed.

PROJECT FINANCE, 1955–78

As will be described in some detail in this section, early Project Finance had the following attributes:

- Complex approaches to financing infrastructure, extraction of fossil fuels or minerals, or development of non-traditional financing e.g. leveraged tax leasing.
- Use of a newly created project vehicle to separate the new business being financed from the sponsor's balance sheet and to arrive at limited recourse.
- Delay, cost overrun and specification risk deflected from the project vehicle to the construction contractor.
- Reliance placed by lenders on third-party experts to assist in the conduct of due diligence.
- Finance-ability, with minor exceptions, based on the existence of a take-or-pay contract entered into with a creditworthy firm, or a similar mechanism.
- Creation of security over all of the project vehicle's assets in favour of the lenders.

Financing of U S Municipal Infrastructure through IRBs

In 1913, about 50 years after the Suez Canal was built, the US Congress gave tax-exempt status to income interest received by bondholders for issues by a state or its political subdivision (hereinafter municipality). By convention, these issues are classified either as general obligation (GO) bonds in which the full-faith-and-credit of the municipality backs the issue or an IRB. A revenue hond is not backed by the full-faith-and-credit of the municipality. Rather, as the name implies, the instrument finances a revenue-generating project backed in some cases solely by rhe project and its cash flow prospects.

US states issue bonds to finance a variety of infrastructure services, including public activity services, i.e., those undertaken by states, or their

agencies on behalf of the public welfare, or private activity services, i.e., those undertaken by the private sector in furtherance of a public good closely linked to a private activity, such as pollution control, waste disposal or selected industrial development. Public activity services or resources (such as government buildings) are financed generally by GO bonds or "tax-anticipation" notes for shorter term borrowings, while private activity services are financed by revenue bonds. At the time the activity was first codified, interest earned by the bondholders on either type of bond was exempted from federal taxes.

Traditionally, private activity bonds are issued by the municipality that desires the economic activity. The process of issuance can follow either a limited or broad placement of the securities. Usually, the private entity, or sponsor(s), that will build and operate the project organizes a project vehicle to separate its business from that of the project activity. The municipality, as issuer, acts as a conduit of funds between the bondholders and the project vehicle. The latter uses the proceeds from the issue to buy land, build a facility and/or purchase plant, equipment, furniture and fixtures. Once commissioned, title to the facility is retained by the municipality, leased to the project vehicle or alternatively sold under instalment sale or loan. Debt service, instalment or lease payments due from the project vehicle to the municipality are tailored to meet the payment obligations to the municipal securities holders. The issuer pledges all of the assets of the project, including its revenues, but does not guarantee repayment from municipal tax revenues or other sources of funds.

Box 2.1 compares the broad terms and conditions typically associated with a revenue bond with those of a modern Project Finance infrastructure deal, as it has emerged today. The reader will notice the similarities between covenant structures and, particularly, those provisions that govern priorities in the application of cash to operating needs. The creation of numerous accounts and conditions related to cash-application priorities, including restrictions on the payment of dividends, are a hallmark of Project Finance deals. We will return to the subject of cash waterfall provisions in much more detail in Chapter 9.

Although the documentation is complex and expensive, specific advantage of a revenue bond is its lower interest expense, especially for activities that qualify for exemption from federal, state and local tax. Additional advantages include (a) exemption from Securities and Exchange Commission (SEC) registration requirements and state blue sky laws; and (b) a longer final maturity than is typically available under a traditional bank loan (because numerous investors desire tax exempt interest over many years). The income tax exemption from the interest earned on public and

Box 2.1 Comparison of Requirements: Revenue Bonds and Project Finance[6]

	Revenue bond	Project finance
Requirement for Due Diligence		
Technical study	Municipality recruits a consulting engineer to study the project and present an engineering report on its technical viability to include the economics of achieving required outputs, including project costs, construction rime and useful life of the plant.	Project vehicle must hire a consulting engineer to study the project and present an engineering report on its technical viability using terms of reference which are similar to those employed by the revenue bond.
Market study	If no off-take agreement, a financial consultant is hired usually to determine who the service or product will be sold to, on what terms. over what time periods and with what results.	If no off-take agreement, project vehicle must hire a market expert to determine who the service or product will be sold to, on what terms, over what time periods, and with what results.
Covenant Structure		
Rates covenant	Municipality pledges to maintain rates, or tariffs, at a level sufficient to meet all expenses. Project vehicle has no control over rates.	Project vehicle promises to adhere to terms of all of the project agreements, including the tariff schedule.
Maintenance	Municipality pledges to maintain the project in good working order.	Project vehicle pledges to operate the project according to sound practice and maintain the project in good working order.
Insurance	Municipality pledges to maintain appropriate insurance on the project. Expenses in this regard are underwritten by the project vehicle.	Project vehicle pledges to maintain appropriate insurance, as determined by the insurance advisor.

[6] Based on numerous published sources. Not all revenue bonds rely on expert opinion or waterfall provisions.

Box 2.1 (continued)

	Revenue bond	Project finance
Financial reports	Acceptable accounting firm is hired to do outside audits, and the municipality pledges to maintain appropriate records and avoid misuse of funds.	Project vehicle pledges to hire an acceptable accounting firm to do outside audit, to avoid misuse of money and to avoid making illegal payments.
Issuance of additional bonds	Municipality pledges to avoid issuing new bonds with same security.	Project vehicle pledges not to borrow any additional funds without permission from lenders.
Security	Municipality pledges all project assets and promises not to create security in favour of other parties.	Project vehicle pledges all project assets and promises not to create security in favour of other parties.
Security/Control over FCF		
Security	Municipality pledges all project assets.	Project vehicle pledges all project assets.
Obligation to create numerous accounts under the loan Indenture agreement	Accounts to be opened include Revenue Fund, Operations and Maintenance (O&M) Fund, Bond Service Fund. Bond Service Reserve Fund and Maintenance Fund	Accounts to be opened include Proceeds Account, O&M Account, Debt Service Account, Debt Service Reserve Account and Maintenance Account.
Observance of waterfall	Strict observance of cash flow applications according to pre-established criteria.	Strict observance of cash flow applications according to pre-established criteria.
Payment of dividends and other restricted payments	Dividends to be paid only if surplus cash available.	Dividends to be paid only if tests for making restricted payments are passed.

private activity bonds reflected a widely acceptable view. Under the US system of federalism, with its corresponding balance of power between the states and federal government, the federal government should nor have imposed a tax on the earnings generated by the investor in a state issue. (Conversely, federal interest earnings are exempt from state taxes.) Such action made the state less able to take care of its own infrastructure needs and, ultimately, increased reliance on the federal government for funding.' While this was the prevailing view up until the mid-1980s, the substantial proliferation in the variety of state and local government issuers prompted

Congress to place restrictions through the Tax Reform Act of 1986 on tax exemption for interest earned on ***private*** activity bonds.

Bonds issued for traditional government purposes such as construction and operation of roads, municipal buildings and other capital projects continued to enjoy tax-exempt status.

All other categories of bonds were classified as private activity bonds. A private activity, or revenue bond, is now defined as one in which at least 10% of the proceeds from the issue are used to finance a facility that will be used by a private entity, and at least 10% of the bond proceeds are secured by property used in the private entity's business. Several other restrictions introduced or expanded under the Tax Reform Act of 1986 included limitations on the purposes for which tax-exempt private activity bonds could be issued and on the total dollar volume a state could issue.

Currently, private activity bonds may still be tax-exempt if they meet certain criteria and fit within a specific category. The major types of tax-exempt facility bonds are those issued for airports, docks and wharves, bulk water supply, sewage, solid waste disposal, air pollution control and qualified low-income housing projects.

The volume of tax-exempt private activity bonds issued by municipalities increased from US$48 billion in 1988 to a high of US$68 billion in 1992. Following 1992, the volume steadily declined each year, reaching US$52 billion in 1995. Of this amount, US$24 billion represented refinancing issues to take advantage of lower interest rates, while US$28 billion represented new money issues. Within the new money issues, low-income housing (19%), airports (9%) and solid waste disposal (8%) were the largest single project categories. Small tax-exempt private activity bonds involving less than US$1 million per issue accounted for 8.7% of all volume.[8]

'A number of other reasons are given for the legitimacy of the exemption of tax on interest earned on revenue bonds issued by the states to pursue projects which serve the public interest: (a) conformity with Constitution; (b) freedom from federal controls over policy decisions which are properly in the sole province of state and local governments; (c) savings in the cost of borrowing without which "urban crisis would become more acute"; (d) freedom from uncertainties of the recurrent annual federal appropriation process; (e) freedom of access of states to capital markets; and (f) expedition in borrowing by being free of federal clearances. For similar reasons, proponents of state rights have always argued that there should be no further direct or indirect federal involvement in state and local government disclosure practices beyond that required to fulfil the federal government's investor protection and antifraud responsibilities.

[8] See Nutter, Sarah E., "Tax-Exempt Private Activity Bonds, 1988–95". The paper, by an assistant professor at George Mason University, was retrieved from the Internet.

Financing of Oil, Gas and Mineral Properties

Provision of finance on a reserves-oriented basis for exploration and development of oil, gas or mineral properties is the earliest Project Finance activity to have a tax-oriented focus. Dating back to the 1950s, expenses and depletion allowances could be transferred between parties as permitted by law to create tax benefits in a project, thereby creating a deferral of tax for an investor. Although the Tax Reform Act of 1969 (and subsequently that of 1986) removed some of the perceived abuses alleged to have occurred in these approaches, the basic transactional structures described below have survived because of their usefulness in achieving Project Finance objectives, including the primary objective of lowering the cost of capital.

With regard to oil and gas, lenders are rarely comfortable with exploration risks and few projects involving this activity are able to meet minimum investment criteria for lenders. By the very nature of the activity, there are inherent difficulties involved in gauging or dimensioning the risks involved in exploration. Hence, required funding during exploration is met by a company's internal cash flow generation. Borrowing on a Project Finance basis is more commonly available during the development and exploitation phases or to finance equipment and labour costs.

In the energy or mineral sectors, a typical Project Finance begins with a partnership, limited liability company or trust organized by the project sponsor(s) specifically for the purpose of owning and operating the project. The sponsor(s), of course, will own shares or participation rights in the project vehicle. The project vehicle, itself, typically will own related assets such as the site, mineral rights, equipment, fixtures, contracts, leases, licences and other approvals. As will be discussed in Chapter 3, the specific corporate form the project vehicle takes is influenced by the accounting objectives of the sponsor(s) particularly with regard to off-balance sheet treatment, tax-paying positions, relative credit ratings, corporate indenture limitations and other similar issues. Occasionally, project sponsor(s) may prefer (for credit, tax or other reasons) to establish a project as a tenancy-in-common where each sponsor(s) will own (directly or more commonly through its own special-purpose holding vehicle) an undivided interest in the project assets and a proportionate share of the project output. A tenancy-in-common, sometimes referred to as a contractual joint venture, is not an independent legal entity and does not have the legal capacity to borrow or enter into other agreements. Projects, when ownership is structured in this manner, can still be financed on a limited recourse basis. Each sponsor(s), through its wholly owned holding vehicle, will enter into virtually identical credit agreements by which each borrows a proportionate

share of the project debt from the same lenders, grants security in its undivided share of the project assets and output, and causes the assignment for security of its share of the project costs.

Three basic approaches to the financing of oil, gas or mineral development are described below:

- Production loans. Usually, a production loan is structured as a non-recourse revolving line of credit intended to complete construction of a well or mine and/or provide working capital to the owner of an oil, gas or mineral property during development. The maximum amount of the loan is defined by a pre-agreed percentage, say 75%, of proved reserve values in the ground as verified by the lenders' independent petroleum engineer or geologist. A production loan generally resembles a mortgage loan except that, after commissioning is achieved, the borrower continues to have rights to draw under the facility for working capital purposes.
- Production payment loan. The use of a production payment loan for the financing of natural resources was primarily developed in the US for hydrocarbon discoveries. A production payment loan is a reserve-based financing technique. It is a loan typically made to a project vehicle, secured by an assignment of future production of oil, gas or a mineral commodity. According to US practice, the project vehicle assigns to the lenders free of costs of production, a specified undivided share of the commodity in the ground coupled with the right to extract the commodity should the operator fail. A production payment loan is almost always a non-recourse loan, where the secured party looks exclusively to proceeds from production and sales for payment. Loan principal and interest are paid upon successful extraction of the commodity on a predetermined schedule and the periodic sale of the assigned share. In this sense, a production payment loan is self-amortizing; once repaid, the assignment to the lenders terminates. When the production payment ***includes*** interest, the present value of a production payment is defined as the future stream of production payments discounted by the agreed loan interest rate. If, conversely, the production payment ***excludes*** interest, the borrower pledges to pay an amount equal to the production payment plus an interest factor on the outstanding balance of the production payment. There are several variations of the production payment loan that have been developed, one of which is illustrated below:

Example

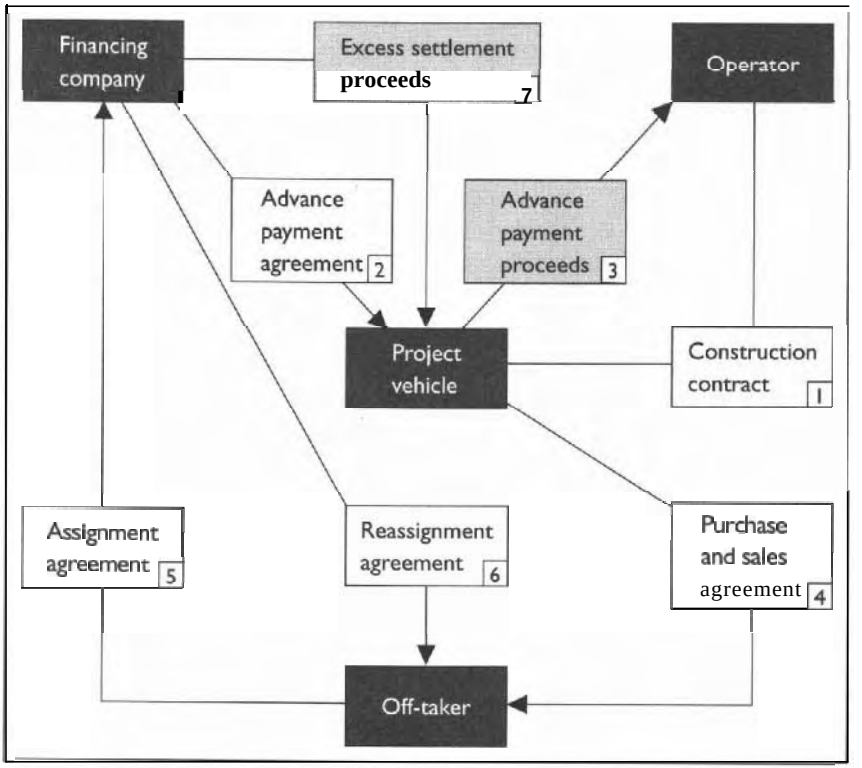
Party A, an owner-operator, sells a property to Party B, its affiliate, special project vehicle, for (a) $1 million in cash; and (b) a production payment con-

tract for $4 million plus an appropriate interest factor. Patty A, as operator, enters into a drilling contract with its project vehicle and procures Party C to enter into an off-take agreement with its affiliate for the purchase and sale of the commodity. The projcct vehicle takes the arrangements to the bank where it subsequently enters into a loan agreement for $4 million. It secures its borrowing with: (a) an assignment of its rights to the property and its production payment contract; and (h) an assignment of all other project agreements including the drilling contract with Party A as well as the take-or-pay contract entered into with Party C. Loan disbursement is made directly by the lenders to Party A, since it is the seller of the property. Party A takes over the drilling contract for the project. Party C, under separate agreement, will pay the lenders directly all proceeds arising from its purchase of the commodity. After applying the proceeds to outstanding amounts under the loan agreement, the lenders pay the remainder to the project vehicle.

- Advanced payments for oil, gas or mineral reserves. Advanced payment or forward-purchase agreements involve the purchase and sale of oil, gas or some other commodity *prior* to its production. A forward-purchase agreement is entered into between the project vehicle and the lenders – or more usually a financing vehicle owned by the lenders – under which the latter agrees to pay in advance for goods to be produced by the project vehicle. As shown in Figure 2.3, the project vehicle uses the purchase proceeds advanced to it for the construction of the project just as it would have if it had borrowed money to build the project. When the project is commissioned and operating, the project vehicle delivers the production to an off-taker. The sponsor(s) of such a project is usually looking for a source of supply of the commodity and becomes the off-taker, in effect providing an indirect guarantee of the loan through its agreement to purchase all future production. The off-taker pays the proceeds directly to the lenders in order to settle the amounts due under the loan agreement. As in the previous example, any remaining balances are turned over to the project vehicle.

Off-take agreements are central to the finance-ability of oil, gas or mineral commodity projects. Long-term contracts are negotiated to sell the output of the project to one or more users at certain time intervals at agreed prices with appropriate escalation. Agreements reached are initialled by the off-taker and the project vehicle prior to the latter's negotiations with prospective lenders. Prospective cash flow from this contract ensures the economic success of the project provided, of course, that production costs are as anticipated and the purchaser is reliable. The risk of non-performance by the off-taker presents a major market risk in oil, gas or mineral projects. If, for example, the off-taker defaults on its obligation to buy the

Figure 2.3 Advance Payment Structure [9]



[9] Steps:

1. The project vehicle enters into a drilling contract with the contractor for construction of the project.
2. The project vehicle enters into an advance payment agreement with a special-purpose financing company owned by the project lenders.
3. The project vehicle uses the advance payment proceeds received from the financing company to finance exploration.
4. The off-taker agrees to purchase the products generated by the project on a firm basis under the purchase and sales agreement.
5. The off-taker assigns to the financing company a portion of its rights and ohligations under the assignment agreement.
6. As assignee of a product for which it has already paid in advance, the financing company "settles" the balance due to the project vehicle on the purchase by offsetting these amounts against the project vehicle's repayment ohligation under the advance payment agreement. The financing company facilitates the sale of its portion of the product by reassigning such portion back to the off-taker at the time of the assignment in step 5 above.
7. FCFs in excess of amounts used to offset the project vehicle's repayment obligations are allocated as agreed.

Source: Based on material prepared by the US Project Finance law firm of Hunton and Williams, in support of a lecture series done in February 2000.

product or service provided by the project, debt service must still be strictly met. A default by the off-taker will cause a loss of revenue, which may result in a payment default under the project vehicle's loan or other contractual obligations. An off-take default may, in addition, trigger interruption of operations and cause defaults in contracts with suppliers and other parties in the production and sale chain.

In such a case, the project may have to turn to the spot markets to sell the product or service. When the project is a commodity such as oil, gas or other mineral, selling it in the open market carries the risk of uncertainty. Market demand and price, for example, will depend on many future (unpredictable) factors beyond the control of the sponsor(s) and lenders: (a) aggregate supply and demand conditions; (b) business-cycle developments; and (c) international and political events.

Since Project Finance loans are made on the basis of projected cash flows for the project, the sudden switch to spot markets will derail such projections, resulting in risks that may be unacceptable to lenders. Lenders insulate themselves against declining market through margin stabilization mechanisms imposed on the sponsor(s) such as price floors, support agreements or derivatives entered into with third parties, e.g. futures, forwards, options and swaps. All forms of support shift the risk of declining market prices to the off-taker and/or the sponsor(s) or third party. We will return to this topic in Chapter 6.

Noteworthy attributes of these deals were as follows:

- **Use of** extensive due diligence. A detailed technical and market study (for projects with no off-take agreement) was, and continues to be, a fundamental requirement. Among key variables, the technical study would analyse the level of proved and probable reserves; likelihood of achieving the anticipated periodic rate of production needed to retire the loans; expected quality of the product and probable costs of the production; and other similar factors. The market study, if needed, would identify probable markets, availability and adequacy of long-term fixed prices and escalation, probable cash flows, and pro forma financial statements.
- Reliance on risk sharing **to** provide project support. Several undertakings by third parties would be formalized in the project agreements to provide the project vehicle with support. For example in oil, gas or mineral Project Finance, there usually existed an undertaking binding the drilling contractor and/or sponsor to, ***inter*** *alia*, (a) provide the project vehicle with a completion guarantee, i.e., guarantee to complete the well(s) or mine within defined time limits; (b) provide equipment and other expenditures to achieve completion; (c) absorb any cost overruns; and (d) mine, extract or produce product within defined parameters

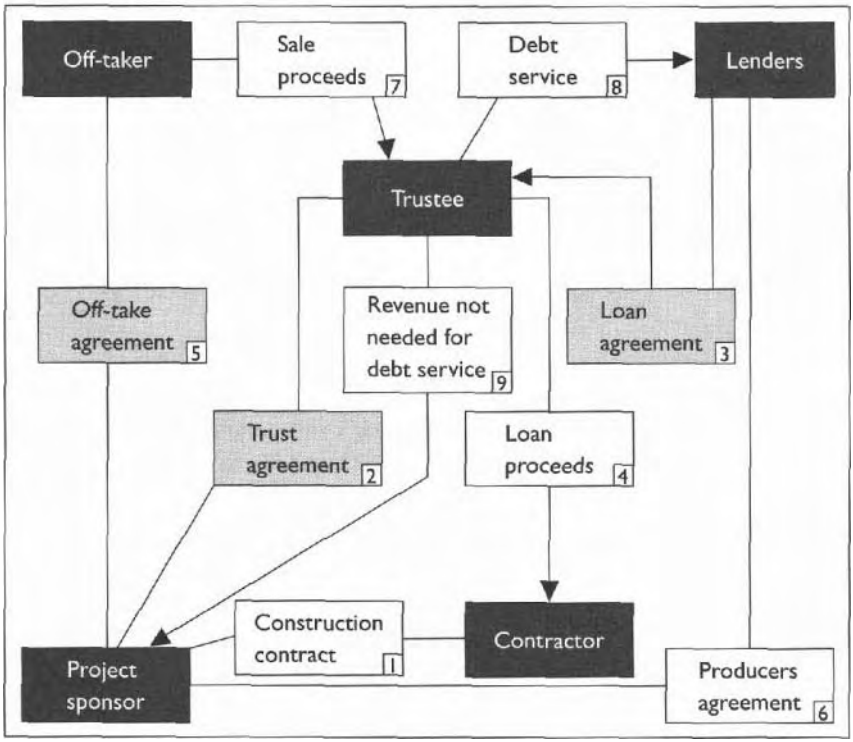
needed to amortize debt on a predetermined schedule. Similarly the off-taker, under the off-take agreement, undertook to purchase specific quantities, with amounts, prices, periodicity and clearly specified indexation.

- Control over CADS and FCF. Normally, the project vehicle would be bound by the terms of its loan agreement to cede, or at least, share control over **CADS** and FCF with the lenders. Principles of priority application of cash in respect of taxes, operating expenses, debt service, debt service reserve account and other such items would be identified and agreed to. As with a revenue bond, the project vehicle would commit to open and maintain several accounts and to observe explicitly any waterfall provisions agreed to in regard to the application of cash to the needs of the business. The lenders, in some cases, might require a security trustee borrowing structure similar to the one described in Figure 2.4, where a trustee was appointed by lenders to manage all of the project vehicle's cash flow, write checks and pay bills. In addition, dividend payments from the project vehicle to its parent would be made only after meeting several financial and operating tests.
- Creation of security over all assets including contracts and cash. The lenders would require assignment of all contractual rights of the project vehicle, including any drilling and take-or-pay agreements entered into by the parties. The security would include a pledge agreeing not to incur additional indebtedness other than that provided by the lenders pursuant to the development of the project on hand, nor to create security in favour of third parties.

Parallel to the emergence of the above Project Finance, a different approach was developed for the financing of oil and, particularly, gas pipelines in continental **US.**

Requirement for natural gas transport in the US arises from the physical attributes of the industry. Gas production is concentrated in the South, along the Gulf Coast in Louisiana, Texas and smaller producing regions in Southwest and central **US.** The most important gas consumers, however, are in the Northeast, Midwest and Pacific Coast region. The geographic imbalance between producers and consumers means that large quantities of natural gas must be transported great distances across the country. From its earliest days, the US gas industry was separated into an "unbundled" ownership structure with companies specializing either in production, pipeline transportation or distribution services. Pipeline companies entered into long-term take-or-pay contracts with producers for gas, the terms and conditions of which were exactly mirrored in the take-or-pay arrangements the pipeline companies had with the distributors further downstream. From

Figure 2.4 Trustee Borrowing Structure[10]



[10] Steps:

1. The sponsor(s) enters into an EPC contract with the contractor.
2. The sponsor(s) creates a trust to funnel various project-related payments. The trustee is the trust department of a large commercial bank, selected by the lenders, located in a major money centre.
3. The trustee and the lenders enter into a loan agreement; recourse under the loan agreement is limited to the assets of the trust.
4. Payments are made by the trustee to the contractor from the loan proceeds.
5. The sponsor(s), or third party, enters into an off-take agreement with the trustee.
6. The sponsor(s) enters into a "limited recourse" producers agreement directly with the lenders and agrees to operate and maintain the project. The sponsor(s) agrees to make cash payments to the lenders (subject to certain limitations) if there is a debt service shortfall caused by a failure on the part of the sponsor(s) to operate or maintain the project properly.
7. The sponsor(s) instructs the third-party off-taker to direct all proceeds due under the off-take agreement to the trustee.
8. The trustee uses the amounts received from the off-taker to pay debt service to the lenders.
9. Revenues not required for debt service, trustee's fees or cash traps such as reserve accounts are paid by trustee to the sponsor(s) on an ongoing basis.

Source: Based on material prepared by the US Project Finance law firm of Hunton and Williams, in support of a lecture series done in February 2000.

the perspective of financing, the pipeline companies were in an enviable situation, squeezed between their take-or-pay obligations with the gas companies on the one hand and supply-or-pay obligations to distributors on the other. Their position between two sets of creditworthy parties enabled them to secure financing readily, on conventional or specialized tax-oriented Project Finance terms. Historically, the transport tariff has been structured as a single tariff with two separate components: (a) capacity tariff to include fixed operating costs, debt service and profit; and (b) usage tariff encompassing variable costs of operation. The tariff structure is similar to the traditional power purchase agreement (PPA) developed later under PURPA except that capacity and usage tariffs were unified into one global tariff in the case for pipeline companies, whereas it consisted of two entirely separate components in the traditional PPA.

The gas companies entered into a throughput agreement with the pipeline company under which the former agreed to pass sufficient quantities of gas through the pipeline so as to enable the project vehicle to meet all of its operating and financial obligations with a comfortable margin of safety. Significantly, the agreement also contained a hell-or-high-water provision. If, for any reason, it became impossible to meet the gas or oil throughput requirement, liquidated damages would be payable in amounts large enough to enable the pipeline companies to meet their basic commitments. Such payments were, and continue to be, characterized as capacity reservation fees or **minimum** payment amounts. The pipeline companies assigned the benefit of their throughput agreements to their lenders. This gave the lenders the right to receive the payments and to enforce performance of the gas companies, as needed.

Lease Financing of Very Large Capital Equipment

In the 1960s, Project Finance was adapted to a new instrument – the leveraged tax lease – for the purpose of using existing tax laws to develop new approaches to mobilizing finance. A lease is a contract. By its terms, one party (the owner-lessor) grants to another (the lessee) the exclusive right to use and possess property or equipment for a specified period in return for a negotiated rental stream. A leveraged lease, often referred to as a true lease or tax-oriented lease, is a contract under which the owner-lessor is treated by the tax authorities e.g. US Internal Revenue Service (IRS) as the owner of the leased property for tax purposes and permitted to take tax benefits. Given the ability of the owner-lessor to claim these benefits, the lessor will offer lower rental payments to the lessee than would be the case under a non-tax-oriented lease. The lessee, in turn, was able to claim deductions on the rental payments made to the owner-lessor.

As continues to be true today, leveraged tax business entails matching an efficient tax payer, willing and able to purchase expensive capital equipment for the purpose of owning and leasing the equipment, to an inefficient tax payer. In this context, an inefficient corporate tax payer is an entity that needs to use capital equipment for some express business purpose but cannot absorb fully the tax benefits associated with outright ownership. For this reason, it is willing to lease the equipment directly from an efficient tax payer. In the 1960s, the efficient tax payer, aided by its financial advisor or lawyer, would organize a fully owned limited partnership or trust, to act as owner-lessor. For income tax filings, these particular vehicles permitted the flow-through (or consolidation) of operating results to the parent's financial statements.

As owner-lessor, the project vehicle would generate revenues in the form of lease rentals and expenses in the form of organizational and administrative expenses, interest and accelerated depreciation. Under tax laws prevailing at the time, it was also entitled to an investment tax credit. In the early years of a lease, the owner-lessor would book operating losses, as well as tax credits, that could be consolidated with the regular earnings of its parent, resulting in a sheltering of the parent's income that otherwise would be taxable. The tax deferral would continue some years into the lease until "cross-over" was reached. Up to cross-over in a typical lease, ***paper*** expenses and allowances such as accelerated depreciation and the investment tax credit (plus other ***real*** cash expenses) would exceed revenues, result in tax losses or credits, and (when flowed through to the parent) shelter the parent's normal income from taxes. Beyond cross-over, with tax losses or credits largely exhausted, revenues would now be greater than operating expenses and, when flowed through to the parent's tax filing, result in ***increased*** income and taxes. At cross-over, the parent, or efficient tax payer, would look for another opportunity to shelter corporate income, since its tax-paying position was exacerbated by the post-cross-over income generated by the lease.

The key issue was the value of the tax deferral up to cross-over. To magnify its value, the owner-lessor would finance up to 80% of the cost of the equipment with non-recourse leveraged debt, which meant that the tax shelter was amplified relative to the limited equity contributed by the owner-lessor, typically 20%. Moreover, to induce parties to participate in such a transaction, the value of the tax deferral was shared with (a) the lessee in the form of a lower rental stream; and (b) financial and legal advisors in the form of upfront fees. Hence the popularity of the arrangement: everyone came out ahead, except for the IRS!

In the absence of such an arrangement, the tax inefficient tax-payer

might not have been able to use the associated tax benefits. The arrangement was particularly important to lessees in the commercial airline and ocean-transport business where a cyclical-earning pattern made it difficult to use fully the benefits associated with the outright ownership of the capital equipment. Leveraged tax leasing during the 1970s was quickly expanded to include other forms of capital equipment, such as oil and gas pipelines.

Although tax leasing is still used in many sectors of the economy, as we will be discussing further below, the US Congress restricted the benefits associated with this finance through the Tax Reform Act of 1986.

New Applications

The latter part of the period under review, 1967–78, witnessed a strong period of global experimentation in the use of Project Finance. The following were among the more prominent examples:

- Project Finance was applied in Asia to at least two examples of showpiece infrastructure: (a)Hong Kong's Cross Harbour Tunnel, 1969; and (b)Japan's Tokyo–Osaka Shinkansen Bullet Train for Expo '70.

  The Cross Harbour Tunnel was completed in 1972 by private parties under a 30-year concession granted by the government. It was a first-of-its-kind project in Asia and preceded the next toll road in Hong Kong, the Eastern Harbour Crossing, by almost 20 years. The government provided no guarantees to the concessionaire in the Cross Harbour Tunnel case. Notwithstanding, it was, and has been, a very successful project, having operated at its full capacity of about 100,000 vehicles per day (VPD) for a number of years. Originally, the Cross Harbour Tunnel toll for cars was set at HK$5. In 1984, a further HK$5 passage tax was imposed. Since that time, however, the toll has not been increased – due in part to the great profitability of the tunnel – despite intense lobbying from the concession company.
- Tax-oriented finance was not only applied to a number of specialized situations in the US, as already discussed, but also in Europe and Asia. In a number of countries, it was also possible to organize an owner-lessor as a legally separate project vehicle and to flow through its operating results upstream onto the corporate income tax filing of the parent.

  During the 1960s, leasing in the UK was of special interest because of the 100% depreciation allowances that could be taken in the first year of the lease by the owner-lessor. Full first-year depreciation allowance resulted in a large deferral of tax on the corporate income of the owner-lessor's parent. As was true in the US, the value of that tax defer-

ral on a discounted cash flow (DCF) basis was then shared between the owner-lessor and the lessee in the form of lower rentals.

Key differences between UK and US tax laws applicable to tax leasing could be exploited readily, under certain conditions, resulting in duplicate tax benefits for the parties. For example, a transaction involving an export from the UK to a US party could be financed as a tax lease from the UK, qualifying for the full 100% depreciation allowances in the UK for the owner-lessor and thereby capturing the obligatory lower rental stream for the US lessee. Differences between tax rulings in the two countries enabled the parties to consider the transaction as a conditional sale agreement (CSA) for US tax purposes. A CSA, under US tax rules, entitles the US lessee to take full US depreciation allowances. Transactions structured to take advantage of differing tax rules in two jurisdictions were referred to as "double dip" or "double whammy" tax leases.

Other countries in Europe with favourable tax-oriented leasing, or double-dip potential, included Ireland, Italy, Spain, France and Germany.

Leasing in Japan began in the early 1960s with the formation of Japan Leasing and Orient Leasing. Initially, the emphasis in the industry was on domestic leasing, rather than cross-border (export) leasing on a Project Finance basis. By the latter 1970s, however, Japanese lessors became very active in providing cross-border leasing services to foreign airlines under a special Japanese Export-Import (JEXIM) programme designed to reduce the country's balance of payment surpluses. Under this version of a Samurai lease,[11] a commercial lessor would organize an "owner-lessor" project vehicle by infusing it with equity amounting to 20% of the funding needed to purchase a commercial airplane. At the same time, the project vehicle would contract a long-term loan from JEXIM for the balance needed to complete the acquisition of the airplane. Simultaneously, the project vehicle entered into a long-term lease with the commercial airliner that was to use the aircraft. Revenues derived from the lease were generally sufficient to provide the project vehicle with the ability to service JEXIM debt and provide a return to its parent on equity invested, net of the tax benefits that

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" A Samurai lease in Japan generally involves a Japanese lessor, a foreign lessee and a lease denominated in dollars. The leased equipment under a Samurai lease showed as an import for Japan because the Japanese leasing companies were the formal owners of the equipment. This is different from a Shogun lease, which **also involves a foreign lessee, a Japanese lessor and a lease denominated in yen rather than dollars.**

could be claimed by the parent or the owner-lessor. Also in Asia, as Australia had at the time, and continues to have, an active tax-leasing orientation suitable for application to Project Finance of very large capital equipment.

- By the mid-1970s, large magnitudes were being mobilized through Project Finance to develop oil and gas fields in the North Sea and elsewhere. In 1972, British Petroleum (BP) raised US$945 million in Project Finance from 66 banks for the development of its North Sea oil field (the Forties Field). The loan, up to that juncture, was the largest (and possibly the most complex) that had ever been made. As in the US examples of oil and gas financing, BP segregated its assets from those of the new venture by creating a project vehicle, Northern Exploration Limited (Norex), essentially controlled by the banks through loan and other finance provisions. The project vehicle entered into a development agreement with BP Development Limited, pursuant to which the latter was to develop the Forties Field and produce oil therefrom on some acceptable schedule. At the same time, Norex entered into another agreement with BP Trading Company Limited, under which the latter agreed to purchase all oil produced by BP Development.[12] A few years later, another very complex transaction, the Trans-Alaska Pipeline Project achieved its financial closing as a joint venture among Standard Oil Company of Ohio (SOHIO), Atlantic Richfield, Exxon, BP, Mobil Oil, Phillips Petroleum, Union Oil and Amerada Hess. The pipeline was financed through separate project vehicles, SOHIO Pipeline Corporation and BP Pipelines, Inc. SOHIO, by itself, raised $1 billion to cover its share of pipeline and tankers. The money was raised through a revenue bond issued by the Valdez Marine Terminal Authority.[13] Following these examples, several other Project Finance deals occurred in the North Sea. The US$300 million Friggs gas field development in the North Sea secured its Project Finance in 1975, while the US$100 million Kinsale oil field development in the Irish North Sea achieved its financial closing by 1978.
- By the end of the period under review, another form of tax-oriented financing became popular in the US – the Research and Development Limited Partnership (R&DLP). An R&DLP is one that finances corporate research and development, and claims the investment tax credit

[12] Kensinger, John W. and Martin, John D., "Project Finance: Raising Money the Old Fashioned Way", in *The New Corporate Finance: Where Theory Meets Practice*, ed. Donald H. Chew, Jr., McGraw-Hill, 1993, p. 325.

[13] Ibid, p. 330.

and tax deductions associated with the activity as well as a share of the revenue once the resulting product is commercialized. Hundreds of research projects were financed in this way since the first one was done in the late 1970s. The choice of vehicle was the limited partnership because of the ease with which operating losses and earnings could be upstreamed to the investor's balance sheet and/or income tax filing. During the early years, some of the R&DLPs were financed with a combination of equity and debt until the Tax Reform Act of 1986 restricted the use of leverage.[14]

PROJECT FINANCE, 1978–90

Project Finance opportunities expanded during 1978–90, aided principally by corporate reorganization, deregulation and new technology, with the following key developments which this section discusses:

- Numerous innovations take place in the financial markets stimulated by the corporate reorganization movement, greatly expanding access to capital for all firms, including smaller ones.
- Important early actions are taken by the regulatory bodies in the US to address the deregulation of network industries such as energy (oil, gas and electricity), telecommunications, air and rail transport – actions that are watched carefully by institutions such as the World Bank and regional development banks.
- Passage of PURPA by the US Congress in 1978 leads to the birth of the independent power producer (IPP) industry and eventually the development of a much more elaborate risk-sharing model, setting the stage for the application of Project Finance to global infrastructure.

Corporate Reorganization Movement

Corporate reorganization is a term used to describe the consolidation, restructuring or reorganization of large segments of US industry initiated

[14] R&DLPs continue to be important today, although without the leverage that characterized them during the earlier period. As of early 2001, there were four main eligibility criteria set forth by the IRS: (a) a technical advance must be targeted, i.e., the company must be trying to achieve a technical improvement, or a cost reduction by new technical means related to the business of the company; (b) uncertainty must exist concerning the best technical path to achieve the desired objective, i.e., the work cannot be boiled down to routine engineering; (c) work to solve the technical uncertainties should proceed in a systematic, step-by-step approach, i.e., it cannot be trial and error; and (d) there must he supporting documentation.

during the late 1970s and 1980s in response to a variety of drivers. Initially, corporate reorganization led to a wave of mergers and acquisitions in the US during the 1980s, and subsequently during the 1990s gave birth to another trend, sometimes referred to as the networking movement, with its emphasis on alliances between groups of unrelated companies. As will be discussed below, corporate reorganization and networking, together with new approaches to limited recourse financing, have had the consequence, among others, of enabling smaller sized companies to compete on an equal footing for financial resources with the large corporation.

The origins of corporate reorganization are found in the 1950s–60s – a time of stable prices and fixed exchange rates – shaped largely by the Bretton Woods Agreements of 1944. By the end of the 1960s, however, the pace of inflation had picked up considerably in the US and abroad. In 1973, President Nixon was forced to de-link the parity of the dollar to gold, a move that was followed by many other countries. For the following 10–12 years, the global economy was characterized by persistent inflation, volatile commodity prices and, in some cases, highly variable exchange rates.

Prior to 1973, US business practice placed a strong value on diversification of corporate activity. Numerous, highly diversified, conglomerates were created largely with the objective of improving corporate performance during all phases of the business cycle. These conglomerates were organized through holding companies that had ownership interests in many diverse businesses and industries: some mature, some new. Some of these companies required little expansion capital as they operated in mature industries and established markets. In effect, they were cash cows, throwing off substantial FCF that could be employed by corporate managers to finance further diversification into new areas.

By the late 1970s, however, the investment public had largely discounted the conglomerate as a legitimate investment vehicle, given generally poor corporate (particularly conglomerate) performance during the turbulent years following removal of the dollar's peg to gold. Indeed, it became fashionable to believe that few companies had the management teams in place to deal effectively with the complexities introduced by the new era. Stockholder activism became far more common and with it, the rights to question management on strategy at the annual general meetings, its policy, decision-making and/or stewardship over FCF. Stockholders also scrutinized, and increasingly questioned, the high agency costs involved in monitoring managerial behaviour, including the high costs of compensation plans designed to reward managers who were successful in creating value for the

shareholders.[15] Traditional stockholder passivity was replaced with a new attitude: if a company in a mature industry exhausts its natural growth opportunities, it should pay higher dividends; otherwise it should be sold off to that buyer capable of realizing its greatest value. What the new philosophy demanded, in effect, was more stockholder control over FCF (through a higher dividend stream), or a return of permanently invested capital (through the sale of the company). The new attitude was aided considerably by the advent of the Reagan administration in the US, which presided over a strong pro-business administration, favouring a relaxation of the SEC's application of antitrust rules, and generally expressing a marked preference for the invisible hand of competitive markets to replace regulation as the more effective way to guide corporate behaviour in the public interest. This regulatory change was important because it permitted executives in mature industries such as oil and gas to reduce overcapacity in that industry by purchasing one or more of their competitors.[16]

Against this backdrop, several other drivers contributed to the need felt by sellers and buyers of corporations to play their respective parts in what might well have been, up to that time, Wall Street's greatest drama:

- ***A large supply of companies became available for purchase, in part created by the relaxation of antitrust and parallel rise in stockholder activism.*** Many of the companies that were up for sale were owned by conglomerates or operated in mature industries, including oil and gas, finance, media, telecommunications, power, mining and minerals, forest products and insurance.
- ***Two new investment philosophies were popularized,*** one influencing executive decisions related to divestiture; the other, judgements related to acquisition.
- ***For executive managers considering divestiture, the important and very novel concept was whether the company to be divested, or sold, had more value in someone else's hands.*** If a potential buyer could create more value from a divestiture candidate than could its current management, existing shareholders would be better served by selling the company to that party. This was a radical departure from the diversification principle that led to the creation of conglomerates in the first place.
- ***For executive managers considering an acquisition target, the perception of "value" changed: value that was once attached to a company***

[15] **Jensen, Michael, "The Takeover Controversy: Analysis and Evidence", in *The New* Corporate Finance: *Where Theory Meets Practice,* ed. Donald H. Chew, Jr., McGraw-Hill, 1993, p. 471.**

[16] **Ibid, pp. 475–478.**

with high net income was now shifted to one that had different attributes, e.g. it operated in a mature industry with established brand products, ample FCF and exploitable hidden value. Hidden value referred to two types of assets that could be sold off for the purpose of prepaying acquisition debt without affecting the normal operation of the company: (a) assets of the target company that had been acquired for historical reasons but were no longer essential to the business; or (b) assets of the target company that had a market value well beyond that carried on the balance sheet, e.g. real estate. The new investment concept, forged in a world of virulent inflation and volatile exchange rates, was a pronounced departure from the old era's emphasis on net income as the only measure capable of differentiating good companies from poor ones.

- ***As corporate reorganization achieved its foothold, stockholders in recently divested companies found themselves with cash on hand, rather than permanently invested in stock certificates.*** This, of course, led to a search for outlets for this capital. Large-scale mobilization of capital became possible, partly aided by this liquidity and abetted by the new philosophies, including the perceived opportunities to earn large profits through participation in the reorganization of the US industry.
- ***There was a rise of the leveraged buyout (LBOs) and other groups, willing and able to tap into investors for fund sources.*** Early corporate raiders taught that returns on acquired companies could be amplified by leveraging available equity with substantial amounts of debt. These new entrepreneurs included Kohlberg, Kravis and Roberts & Co., Forstrnann-Little, Wesley Clayton and Dubalier, and corporate raiders such as Boone Pickens and Ivan Boesky. Led by these individuals, a tremendous proliferation of investment opportunities occurred. Investors could choose between funds dedicated not only to merger and acquisition (M&A) but also venture capital, initial public offerings (IPOs), hidden value funds specializing in the purchase and leaseback of corporate real estate, etc. An added attraction was that most of these funds were designed as finite-life investments, implying the return of capital within a limited horizon. Eventually, buoyed by the success of these new funds in mobilizing money, a number of blue-chip investment banking firms joined the band wagon by creating their own funds for a variety of purposes, e.g. the pre-merger versions of First Boston, Morgan Stanley, Lazard Freres, Merrill Lynch and Shearson Lehman Hutton.
- ***Deregulation of the finance industry also contributed to corporate reorganization by increasing the availability of debt.*** Several changes within the finance industry had the effect of improving its ability to

handle very large projects. There were regulatory changes affecting the insurance and pension fund industry, specifically in the Employee Retirement Income Security Act (ERISA)standards of 1973 affecting pension fund institutions. The new standard substituted the "prudent man" rule for a new one, "reasonable return for risks incurred". The resulting change permitted such institutions to compete more broadly for investment opportunities. A second effect was the deregulation of the banking industry, sanctioning the ability of commercial banks to compete directly with investment banks, and breaking down barriers between the two institutions. This led to a wave of acquisitions within the industry as one type of institution purchased the other. An important impetus to globalization was the enhanced ability of financial institutions from one country to purchase those of another. Continued consolidation in both commercial and investment banking, in the US and abroad, led to the increased availability of finance. This enhanced competitiveness of the industry, however, has meant that everyone now targets the same elite clients, a factor that has contributed to disintermediation of the commercial bank industry, i.e., a loss of their biggest and best customers. To preserve profits, commercial banks have had to go downmarket, organizing leasing, credit card, industrial finance and other such subsidiaries. Disintermediation, however, has had positive impacts on the availability of Project Finance, at least in certain quarters. The biggest money centre banks have maintained, or renewed their focus on, structured finance including Project Finance and Acquisition Finance, taking on longer term exposure than ever before, both in the US and abroad.

- ***To support increased demand for debt, globalization of the finance industry was accompanied by the development of an unprecedented number of financial products during the 1980s.*** The most relevant of these products to the evolution of Project Finance can be classified into two categories:

  (a) **Risk** management products, or derivatives as they are more commonly referred to, designed to transfer price risk in the manner described in Box 2.2, and associated with corporate revenues, inputs, interest rates, foreign exchange conversion gains or losses, etc. to those third parties willing to accept the risks.

  (b) Hybrid debt instruments, the purpose of which is to couple a debt issuance with a risk-management feature that essentially enhanced the ability to borrow by reducing the possibility of default.

Box 2.2 Types of Derivatives Commonly Used to Transfer Price Risk to Third Parties

A futures contract is an agreement between two parties to buy/sell an asset at a certain time in the future for a certain price. A futures contract is generally executed through a formal exchange, e.g. the Chicago Mercantile Exchange and London Metals Exchange.

A forward contract is the same as a futures contract except that it is tailored to the requirements of the borrower and only available over-the-counter.

A put option provides the option holder (the buyer) with the right (but not the obligation) for a specified period to sell a specified quantity of a commodity at a specified price. The selling party (the writer of the put) is obligated to perform if the right is exercised.

A call option provides the option holder (the buyer) with the right (but not the obligation) for a specified period to purchase a specified quantity of a commodity at a specified price. The selling party (the writer of the call) is obligated to perform if the right is exercised.

A price ceiling is an instrument that creates a maximum price to which the purchaser of the instrument may be exposed. Below that maximum price the purchasing party will pay the floating price

A price floor is an instrument that creates a minimum price to which a selling party (the writer of the instrument) may be exposed. Above that minimum price, the writer will receive the floating price.

A price collar is an instrument that combines a price ceiling and a price floor, in effect creating a collar around a band of price risk that a party or its lenders are willing to accept. A party seeking the protection of a price collar, whether a seller or buyer, is essentially trading potential market upside for a limitation on potential market downside.

A price swap exchanges the prices paid by two parties for a commodity, one of whom pays a fixed price while the other pays a specified index or floating price. Only net payments change hands. There is no actual exchange of commodities.

While long-term swaps insulate a project from price increases and provides the maximum form of stability, such contracts do not provide the project with the opportunity to take advantage of falling prices. Consequently, swaps are regarded by some as an expensive form of hedging. Various alternative derivatives, on the other hand, offer greater liquidity and lower transaction costs. In addition, because of the multitude of risk-management products on the market and their ability to be tailored to the individual needs of the purchaser, financial derivatives offer a variety of risk-management strategies.

Derivatives transfer price risk to others in three areas, i.e., foreign exchange parity, interest rate movements and commodity prices. Note that we include in this book a very comprehensive discussion in Chapter 11 of the interest rate swap, including the methodology used to derive its valuation at any time based on forward-rate curves.

Although derivatives have existed for centuries their improved structure and tailoring in the over-the-counter (OTC) markets have greatly expanded over the last 25 years. The phenomenon is largely demand-driven, a response in fact to the increased volatility of inflation, foreign exchange, interest rates and commodity prices introduced after President Nixon's de-linking of dollar to gold. Yet, the market was slow at first to accept the products. Financial futures designed to mitigate foreign exchange parity risk were first offered in 1972 on the Chicago Mercantile Exchange (CME), and the first OTC currency swap was done by Continental Illinois Bank in 1976. The derivative earned acceptance only after the World Rank entered into a well-publicized agreement with IBM Corporation in 1981. Options in foreign exchange were not introduced by the Philadelphia Stock Exchange (PSE) until 1982 followed by a subsequent expansion of such products by the CME in the following year. Similarly, the first interest rate swap, intended to neutralize interest rate volatility, was done only in 1982.

Futures in metal and agriculture had been available for a small number of commodities prior to, and after, World War II, but a perceptible expansion in product offerings occurred during the period 1978–90. Aluminium futures were first introduced in 1978 on the London Metals Exchange (LME) followed by similar agreements for nickel in 1979. Heating oil futures were introduced on the New York Metals Exchange (NYMEX) in 1978, while West Texas crude oil futures were presented on the same exchange in 1983.[17] Development of some derivatives had to await price deregulation. For example, the US Congress passed the Wellhead Decontrol Act of 1989, deregulating the wholesale price of natural gas in all interstate transactions. This legislation freed gas producers from the burden of regulation and promoted competition in the wholesale natural gas market. In response to the Act, natural gas futures became available subsequently in 1991.

The other generic product that became popular with some borrowers during the 1980s was the hybrid note. Quite simply, a debt hybrid

[17] Readers interested in this subject might refer to Rawls III, Waite S. and Smithson, Charles, "The Evolution of Risk Management Products", in ***The New Corporate Finance: Where Theory Meets Practice,*** ed. Donald *H.* Chew, Jr., McGraw-Hill, 1993, pp. 357–369.

combined a debt issue with a derivative (see Box 2.3). A relatively common debt hybrid was, and continues to be, one designed specifically to neutralize the volatility of interest rates. Depending on the structure, hybrid notes may provide protection against other risks, such as the volatility of foreign exchange parities, commodity prices and equity indices. Hybrid notes are also referred to as structured notes and may be purchased in the capital markets by institutions and individuals.

Typically, hybrid debt carries a lower nominal coupon and longer tenor, since it provides the borrower with an enhanced ability to service debt. Enhanced capacity to service debt means that the instrument supports greater financial leverage. For this reason, the debt tends to be amortizing, rather than bullet, in order to provide a continuous signal to noteholders of the ability of the borrower to perform.

A good example of a debt hybrid that offers an equity play is a convertible debt instrument. In return for a lower interest rate on the debt issue, borrowers provide bondholders with the assurances that they will participate in any increase in shareholder value. The borrowing company benefits because the lower interest represents less of a drag on earnings than otherwise might be the case and the lower overall debt service reduces the probability of default.

There are many other examples of debt hybrids but the ones described below are among the most common:

(a) Commodity indexed notes. In 1980, Sunshine Mining Company issued bonds that combined a debt issue with an option on silver prices. The loan terms called for a relatively lenient repayment schedule over a 15-year loan life. However, ***principal prepayments were required,*** according to a pre-agreed schedule any time the spot price of silver rose to levels beyond US$20 per ounce. The option served two purposes. Because the risk of default was reduced over loan life as a result of the extended repayment terms, investors were willing to charge a lower interest rate. At the same time, the option provided the lenders with the ability to shorten the loan life if silver prices rose beyond the designated level. The provision requiring principal prepayment was acceptable to the issuer because it would occur only with the improved cash flow available through the higher silver prices. A few years later in 1986, a different approach was adapted for a Canadian mining company, Pegasus Corporation. It issued Eurobonds with detachable options on gold. In effect, this gave investors two different separable claims: (a) straight debt with fixed interest and principal payments over loan life; and (b) options on the price of gold. The

Box 2.3 **Commercial Applications of Derivatives**[18]

The following are examples of the use of derivatives:

Example 1

Assume that a lessor has structured on a Project Finance basis a leveraged tax lease involving the purchase and operating lease of a new airbus to an airline. Consider its exposure to the price of jet fuel. For a typical airline, fuel cost can range from 15% to 25% of total operating expenses. If the price of jet fuel rises from 30 cents per gallon to over 80 cents per gallon as it did in the one-year period from January 1999 to January 2000, the rise in operating costs for the airbus may have amounted to 25–42%. To avoid this impact, lenders providing the leveraged debt may require the lessor, who in turn will impose the requirement on the operator, to employ swaps or options strategies on the price of jet fuel to "smooth" the volatility of fuel prices and manage year-on-year changes.

Example 2

Assume that a commercial lender has provided a Project Finance loan to an aluminium smelter. The commercial lender offers a five-year variable rate loan based on 90-day LIBOR, provided that the smelter negotiates a satisfactory interest rate hedge. The smelter has two options with which to comply with this condition. The first is to arrange an Interest rate swap through a broker or commercial bank that "fixes" the Interest rate for the life of the loan. A second option is to persuade the lending institution to arrange a debt hybrid, instead of extending a straight loan, the structure of which requires interest rates to float downwards as the world spot price of aluminium falls below a certain floor. The objective with either the swap or the debt hybrid is to improve the predictability of forecast CADS or FCF, to the satisfaction of lenders particularly – with sponsor(s) benefiting to the extent that dividend predictability improves.

Example 3

Assume that a commercial lender is contemplating the financing of a gold mine over ten years. The project vehicle has entered into a take-or-pay agreement with a third party calling for specified volumes of gold to be purchased at the prevailing spot price. To improve predictability of revenues and CADS, the lenders may grant a loan to the project vehicle on condition of an agreed hedging programme. Because commodity prices for gold, or other commodity, may be hedged for one to two years (which is a short period relative to the tenor of the loans). lenders may require the creation and implementation by an acceptable third-party advisor of an annual hedging strategy for the project vehicle. This annual hedging strategy would be subject to the approval of the lenders and take into account a number of variables and parameters set forth by them in their loan covenants.

[18] Based partly on examples provided by Citibank N.A. and/or conversations with officials from ANZ Investment Bank.

upside provided by the options allowed Pegasus to negotiate a lower borrowing rate.

In **1988,** Magma Copper made yet another advance on the same principle by issuing senior subordinated notes. The notes had a series of embedded copper options in the repayment schedule, the effect of which was to index the actual interest payment due at each payment date to the price of copper. When copper prices were high, the borrower paid higher interest rates according to some predetermined schedule; similarly when copper prices were low, the borrower paid lower interest rates. In **1991,** Shin Etsu, a Japanese chemical manufacturer issued a hybrid with a similar structure with the interest payment floated inversely with the price of oil.

(b) Range notes. Range notes typically pay interest at an above market interest rate if the London Interbank Offer Rate (LIBOR) stays within a predefined interest rate ceiling and floor, i.e. the price collar. If LIBOR moves above the ceiling or below the floor, the interest rates fix at predetermined levels.

(c) Inverse floaters. First introduced in **1986,** the inverse floating debt hybrid moves in an inverse manner to market rates. As LIBOR moves up, the inverse floater moves down and vice versa. The structure of the inverse floater neutralizes floating rate debt. Floating interest rates were first applied to bonds in **1975,** generally tied to LIBOR. Previously, all bond issues had a fixed rate. Effectively, the floater served to transfer risk from the buyer of the notes to the issuer. Hence, the inverse floater was a response by market to provide a financial product in which the interest rate risk was shared more equitably between lender and borrower.

Financial innovations with risk-management products and debt hybrids, especially the former, have expanded greatly the number of undertakings that can be addressed on a Project Finance basis. These include projects that feature revenues or costs impacted by the spot price of:

Metals, e.g. aluminium, copper, zinc, lead, tin, gold, silver, nickel, platinum or palladium.

- Energy, e.g. oil, gas, heating oil, jet fuels.

Capital structure, e.g. currency, interest rates, equities.

- Agricultural products, e.g. specific crop or livestock production for which a futures market exists.

- ***Corporate reorganization affected infrastructure services where the issues of improved competitiveness in network industries received increased attention from the regulators.*** A network industry provides infrastructure services to its customers in part by undertaking sunk investment in physical facilities that cannot easily be put to other use. For example, the gas industry provides natural gas to distributors and industrial consumers for a variety of purposes but is dependent for its transport on dedicated, long-distance pipelines that do not have any other use. Similarly, the power industry provides electricity to industrial and retail customers but depends on sunk investment in transmission and distrihution (T&D) wires[19] for its point-to-point delivery. It was widely believed that the large sums needed to finance the sunk investments, as well as other costs associated with the construction and operation of network industries, required vertically integrated monopolies. Regulation was needed not only to protect the interests of the investor undertaking such investments but also those of the consumer. The quality of service provided by the monopolists was monitored by independent regulators, costs of providing service tracked and tariff schedules approved – at least for those services that did not benefit from competition.

  By the late 1970s, concerns developed within and outside the regulatory bodies in the US regarding the efficacy of regulatory oversight. It was feared, for example, that current approaches favoured the private corporations that provided the infrastructure services at the expense of the consumers who benefited from their use. Many theorized that the regulatory bodies were unable to protect adequately the consumer for a variety of reasons. The more prevalent reasons, given in decreasing order of extremism, were collusion between service provider and regulatory body, regulatory inefficiency or inadequacy and/or the lack of tools with which to encourage cost-cutting and lowering of tariffs. The answer in some quarters, very much in tune with the Reagan administration's view, was to inject more competition into the system and reduce the level of regulation. The issue, unsurprisingly, was how best to do this.

  Key considerations and arguments regarding the best way to introduce competition were difficult to articulate. It was not, for example, a

[19] An airport represents a sunk investment because it is built with the intention of servicing a particular city, or region. The **airport** cannot be moved to another location if judgements regarding traffic and revenues are not borne out. It differs from the airplanes or ground equipment which are complementary to the airport's infrastructure and which can, and are, moved to other regions if prevailing traffic conditions so warrant.

simple matter of eschewing state-ownership of network industries, as was the case in other countries, since most infrastructure services in the US were, and historically have been, privately owned. Rather, the problem appeared to be the organization of the network industries themselves. The most egregious example was that of the telephony industry, which for SO years had been dominated by one giant, regulated, private monopoly, American Telephone and Telegraph (AT&T), offering local and long-distance services to the entire country. A less extreme problem was the power industry, segregated as it was into a relatively small number of vertically integrated investor-owned utilities (IOUs) – each of which enjoyed a monopoly in its franchise area. Each of these IOUs was awarded its privileged position by one of the 50 states on the basis that all reasonably incurred costs of delivering bundled electricity services to its customer constituency (i.e., costs of generation, transmission, distribution, etc.) would be reflected in periodic tariff adjustments. The gas industry, in contrast, had an unbundled vertical ownership, as we noted earlier. The industry, however, operated essentially as a vertically bundled monopoly because of the existence of rigid take-or-pay agreements between suppliers and pipeline companies, which mirrored similar arrangements between pipeline companies and distributors. Similar problems existed with other industries as well. Previously the rail industry, by a 19th-century treaty among private rail companies, had carved up the US into geographic franchises. As was also true in the other cases just discussed, regulation involving these regional monopolies did little to encourage efficiency or competition. There were still other problems within the network industries, e.g. there existed a great deal of cross-subsidization in the approved structure of tariffs in some of them. In the airline industry, for example, fares to major cities were set in such a way as to cross-subsidize tariffs to smaller, less travelled routes – all with the tacit approval of the regulator, the Civil Aviation Board (CAB).

The ideal solution appeared to lie in creating conditions within each industry permitting demand and supply for services to set spot prices, rather than continuing to fix tariffs inflexibly through administrative fiat. The assessment as to how to do this varied from sector to sector. Where sunk costs were high in relation to overall service costs, the answer seemed to be to enforce the unbundling of ownership interests in respect of network and competitive components while retaining regulation only in respect of the network. Three basic approaches came to be recognized: open access, pooling and timetabling:

(a) Open access (sometimes referred to as common carriage) means freedom of entry, or access, for all competitors to the network on

the basis of regulated tariffs – obviously such a policy was deemed most suitable for the natural gas and rail, and in particular, the telecommunications sectors.

(b) Pooling provides rights to transmit homogeneous product through existing networks, based on competitive bidding, suitable for electricity, and possibly, gas.[20]

(c) Timetabling means establishing rights to transmit heterogeneous product or service from one point to another across an existing network, based on auctions, with application to airport landing slots or rail routes.

Each of the three basic approaches represents a different way of creating conditions under which competitors share a network and avoid wasteful competition. An example of wasteful competition is a parallel investment in, or duplication of, network facilities that cannot be put to any alternative use if the network facility fails.[21] If the competitive elements use the same network and compete with each other for the rights to provide service, spot prices may be determined more freely based on supply and demand conditions that vary by time, location, customer and perhaps a number of other variables.[22] When the competitive elements of a network operate effectively, regulation is no longer necessary. Moreover, based on the signals provided by the spot market, buyers and sellers are able to conclude meaningful long-term contracts that even out price fluctuations in the spot market.[23]

A special concern of the regulators was whether the competitive elements of an unbundled network could get their new undertakings financed, in the absence of firm contracts, markets and prices. After all, facilities selling product or service on the basis of spot, rather than fixed prices, would be subject to more uncertainty. The question "Could such

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[20] Water is not included in the alternatives because its quality is not deemed tn he homogeneous.

[21] This is not an argument for avoiding network duplication that represents a strong technological advance. For example, in telecommunications, fibre optic network represents a strong technological advance over its predecessor technology. Nonetheless, open access to the existing network is still important to a fibre optic network in order to facilitate provision of a fuller service.

[22] The separation of the ownership of the network from that of the competitive elements is important because it eliminates the possibility of the former providing preferred network access to its own, rather than competitor's, product. This argues for the imposition of limits on vertical integration.

[23] Klein, Michael, "Competition in Network Industries", World Bank Policy Research Working Paper No **1591,** April **1996,** p. 7.

facilities get financed at all?" was undoubtedly answered differently in various ways, depending on whether the respondent was an academician, regulator, investor, investment bank, or lender.

Apart from ownership considerations, reduced regulation and finance-ability of competitive components, there were also other factors to consider. The US federalist form of government meant that states had some say in the reorganization of network industries since some of the monopolies operated on their turf and were regulated by state rather than federal agencies. Participation by the states was likely to slow up progress in some sectors or result in irregular sector reorganization. All of these factors probably encouraged a go-slow attitude in the US with regard to the reorganization of some of the infrastructure networks.

The first effort by a regulatory body to address the problem of "reorganizing" a network industry belonged to the Federal Communications Commission (FCC)and Department of Justice (DOJ).As early as 1974, the DOJ had filed a suit that charged AT&T with illegal actions designed to frustrate competition in long-distance services and terminal equipment. The suit asked for, among other things, the divestiture of some, or all, of the Bell-operating companies. For the next several years, the parties argued jurisdictional issues and undertook a lengthy discovery period that delayed the start of the trial until 1981. On 15 January 1981, the US *vs. AT&T* antitrust trial began. A settlement in favour of the government's position was eventually arrived at, creating a basis for increasing competition in the industry. As a result of agreements reached, AT&T was broken up into seven regional telephone companies in January 1984, and forced to divest itself of a further 22 operating companies providing local telephone service. Moreover, the divorced regional Bell companies were prohibited from offering long-distance services for a 12-year period. After 1984, rivalry in long-distance markets grew steadily. However, competition in local telecommunications grew very slowly because state regulators limited entry and controlled local rates. As a result, Congress was finally prodded to pass the 1996 Telecommunications Act.

A great many criticize the 1984 settlement with AT&T and the 1996 Act as sub-optimal in their effects on competition in the telecommunications industry. Notwithstanding, it is true that considerable innovation has occurred over the recent past, including the introduction of fibre optic networks; cable television; data transmission over power lines; global satellite systems; increasing computing power; improved data compression techniques; and convergence between communications, broadcasting and data processing. All have further contributed

to the breakdown of traditional monopolies and modes of service provision. It is not uncommon today to find commercial banks specializing in the provision of Project Finance to service the needs of several relatively recent participants in the sector, including mobile, satellite and fixed telephone, submarine cable, cable television, terrestrial and satellite broadcasting, publishing and multiplex cinema.

A different approach was taken by the government towards the deregulation of the natural gas industry, when Congress adopted the Natural Gas Policy Act of 1978 authorizing Federal Energy Regulatory Commission (FERC) to liberalize interstate natural gas markets. During the 1980s, FERC laid a basis for enabling market forces to operate in the industry. FERC Order 436 of 1985 and Order 500 of 1987 were the first steps in unwinding the vertically integrated take-or-pay structure of the industry. FERC Order 436 instituted an open-access regime for interstate pipeline transportation. This regime enabled distribution utilities and large end-users to ***exit*** from their long-term take-or-pay obligations with the pipeline companies, permitting them to alternatively purchase natural gas directly from the oil and gas producers. Although the Order unwound the ***sales*** agreements that the pipeline companies had with the buyers, it left intact the ***supply*** arrangements with the oil and gas producers. Since the Order was voluntary, pipeline companies were at first hesitant to implement the open-access regime until two years later, when FERC Order 500 allowed them to pass a share of their stranded costs to the users of pipeline transport. Beyond these initial steps, additional legislation and executive orders, over a number of years, were required before the reorganization of the sector was complete.[24] The deregulation of the natural gas market in the US has led to the development of two markets: a physical gas market where contracts for physical natural gas delivery are traded; and since 1991, a financial gas market where contracts for price-risk management are traded.[25]

[24] These initial moves, as mentioned before, were followed by (a) the Wellhead Decontrol Act of 1989 in which Congress deregulated the wholesale price of natural gas in all interstate transactions, freeing gas producers from the burden of regulation and promoting competition in the wholesale natural gas marker; and (b) FERC Order 636 requiring pipeline companies to unbundle, or separate, the ownership of the competitive elements of natural gas sale operations from the network elements of pipeline transportation activities. The intent of Order 636 was to support the development of regulation for pipeline network operation and deregulation for natural gas marketing.

[25] For a good discussion on the subject of the seven types of financial gas contracts that have developed to manage price and basis risk, see Juris, Andrej, "Development of Natural Gas and Pipeline Capacity Markets in the United States", World Bank Policy Research Working Paper No 1897, Note 141, March 1998, pp. 22–24.

By acts of Congress, the US airline industry was deregulated in 1978 and the rail industry in 1980. An initial step in reorganizing the power industry was taken by Congress with the passage of PURPA in 1978, the subject of our next section. More than 20 years later, the reorganization of the US power sector is still ongoing. Given the sharing of power between the federal government and the states, an irregular state-to-state implementation of measures to increase competition is hound to result. Nonetheless, the passage of PURPA had, and continues to have, major influence on the evolution of the global Project Finance business.

U S Early Experience in Restructuring the Electricity Industry

In the period 1970–85, electricity consumers in the US were subjected to a series of unprecedented price increases. During this time, residential and industrial prices of electricity rose three and four times respectively.[26] It is widely held that US electricity prices rose precipitously, at least in part, because of the dependence of the industry on cost-based regulation. The increases in oil prices by the Organization of Petroleum Exporting Countries (OPEC)during the 1970s, along with rising expenses associated with the generally poor financial and technical performance of US IOUs, were largely passed through to consumers in the form of higher prices for electricity. Under cost-based regulation, US IOUs had the opportunity to "pass-through" all their costs, irrespective of how they are incurred, to the rate payers.

In the midst of an energy crisis that ripped through industrial world economies, Congress passed PURPA in 1978. Faced with predictions that the price of oil would rise eventually to US$100 per barrel, Congress acted to reduce dependence on foreign oil, to promote alternative energy sources and energy efficiency, and to diversify the electric power industry. Prior to PURPA, only IOUs could own and operate electric-generating plants. Once passed, the Act required IOUs to buy power from IPPs in those cases where the latter could produce power for less than what it would have cost for the utility to generate the same power on the margin. Avoided cost is the state-of-the-art term used to define the difference between the utility's cost of producing a quantum of power and the price offered by IPPs to generate that same power. The law was supplemented in 1984 by a FERC Order requiring IOUs to select their IPP service providers on the basis of competi-

[26] **Data** collected from **FERC.**

tive bidding. Within a short period thereafter, selection of IPPs by competitive bidding became the norm.

Consequences of PURPA were profound and far-reaching. The Act stimulated a number of important social, technical and financial results:

- Lower electricity prices. PURPA was a first step towards introducing competition to the US electricity business. During the period 1980–84, electricity costs for residential and industrial customers fell by 31% in real terms; and over the period 1985–99, by 36% on the same basis. Prices for industrial electricity fell more rapidly due to the competitive pressure created by on-site co-generation for large industrial and commercial customers. Although PURPA contributed to the fall in electricity prices, no one would attribute the favourable results to the onset of competition alone, since falling fuel prices and lower domestic inflation were also contributing elements.
- Development of fuel-efficient technologies, including renewable energies. Given the very high levels of fossil fuel prices prevailing during the 1974–85 period, one objective in passing PURPA was to encourage the efficient use of oil and natural gas by stimulating the development of fuel-efficient technologies, such as co-generation, or the displacement of such fuels altogether by renewable fuels. With regard to renewable energies, some credit the Act with bringing on line over 12,000 megawatts (MW) of non-hydro renewable generation capacity, a little less than 2% of total current capacity of about 750,000 MW in the US. The biggest beneficiary of PURPA, however, has been the development of very efficient, natural-gas-fired generation, including co-generation systems where two forms of energy, electricity and process heat, are produced simultaneously.

  Much has changed since PURPA was implemented. The price of oil has declined from its mid-1980s level. Many IPPs signed PPAs in the 1980s containing renewable energy tariffs that are currently higher than oil- or gas-fired tariffs. Critics of PURPA say it is unfair to make IOUs honour these contracts.[27] Hence, PURPA is no longer of much help for fostering the development of renewable energies. At the current prices for fossil fuels, this form of energy cannot compete presently with new natural gas turbines.
- A new breed of entrepreneur: the IPP. One of the mast important effects of the Act was to create a market for power from non-utility IPPs, now

[27] **In fact, all of these contracts were based on the avoided costs of electricity at the time; in other words, if IOUs had built their own power plants, prices would be even higher now.**

delivering significant amounts of the country's total installed capacity. Initially, IPPs focused on co-generation and renewable energies as required by the Act. More recently, however, a new IPP transaction has emerged: one driven by different regulatory and competitive pressures – the MPP (described in Appendix 2.1).

- **A new** risk-sharing methodology. PURPA had the additional consequence of shifting the risk of cost overruns and poor management away from the IOUs and rate payers, placing these directly with the IPP through pay-for-performance, fixed-price contracts. From this perspective, the Act introduced a whole new era of risk management, as summarized in Table 2.1.

  As outlined in the table, IPPs developed a number of risk-management techniques, a summary of which is provided below:

  (a) Under the fixed-price/pay-for-performance PPAs, significant risks in development and operations of a power plant were fully allocated to the developer, away from the rate-paying consumer. These include development, construction, fuel, operations and maintenance (O&M) and financing risks.

  (b) IPPs reallocated these risks to other parties through contracts and, in this way, gave birth to the more extensive risk sharing. The operative principle in the reallocation was that the party best able to control a risk was assigned that risk. A more efficient risk-sharing and reallocation structure resulted in a reduction of the overall, or total, risk.

  (c) Under PURPA-mandated IPPs, IOUs continued to assume market risk. For our purposes, market risk is defined as variation in demand and price of electricity. The utility assumed these risks by agreeing to provisions in the PPA to purchase minimum amounts of electricity from IPPs, at specified prices, irrespective of externalities affecting the demand or price for electricity. Ultimately, the risk was transferred to the rate payer through the cost-based regulation that continued to be the order of the day.

FERC and the state regulators were well aware that any further steps beyond PURPA for the purpose of stimulating more competition in the US electricity industry would require opening up T&D access among the IOUs.[28] Ownership of transmission was heavily fragmented across the country, with

[28] **FERC earlier had addressed the same issue with the US natural gas industry. It starred the process of totally deregulating the gas industry in 1985 under FERC Order 436, instituting an open-access regime for interstate pipeline transportation.**

Table 21 The New Risk-Sharing Paradigm under **PURPA**[29]

Category of risk	Nature of risk	IOU allocates risk to	PPA allocates risk to	Reallocation of risks	
				to	through
Development	Cost of originating the project securing the necessary environmental permits for the site and technology employed, negotiating the project documents and raising finance, approximately 3–5% of project costs	Rate payer	Developer	–	–
Construction	Variations in cost, schedule and specifications	Rate payer	Developer	Engineering, procurement and construction (EPC) contractor	EPC contract
Fuel	Variations in cost, availability, quality and transportation	Rate payer	Developer	Fuel suppliers and transporters	Input supply agreement; fuel transport agreement
O&M	Variations in operating performance and O&M cost	Rate payer	Developer	O&M contractor	O&M agreement
Financing	Variations in cost of financing	Rate payer	Developer	Banks, equity partners	Interest rate swap agreement; partnership agreement
Market	Variations in market demand and price of electricity	Rate payer	IOU	–	–

[29] Allocation of risk under the classic PPA model is discussed in more detail in Chapter 5.

each vertically integrated IOU owning that part of the sysrem it had developed within its own franchise area. Competition was effectively blocked by the compartmentalization of ownership interests that ran through the entire system. In **1988,** as a first step in unblocking T&D, FERC conditioned the approval of a merger between two large IOUs subject to their agreement to open their transmission capacity to third parties. A few years later, the **1992** FERC Order **888** codified open and equal access of T&D to all generators at regulated rates.[30] FERC Order **889** followed, requiring IOUs to unbundle their businesses into separate generation and T&D companies. Significantly, IOUs were not required to divest their generation capacity but rather to reorganize these assets into a separate subsidiary with an independent capital structure, management and accounting system. Some IOUs opted eventually for the latter alternative; others decided that the best way to serve the shareholders were to sell, or lease, their T&D systems and focus on power generation. The process is still ongoing.

FERC Orders **888** and **889** were expected to have three consequences: (a) for the first time in US history, a generator in one state could compete for market share in a neighbouring state using the open-access transmission system; (h) by the same token, generators in other states could compete for market share on that generator's home turf; and (c) the new competition would eventually result in a convergence of electricity prices at the national and state levels. This convergence would be accelerated and optimized with the institutionalization of a new kind of IPP, the MPP.

IPPs that do not have a strict PPA and sell all or much of their electricity output to spot market may he referred to as MPPs. Pure MPPs do not enjoy any immunity from market risk in the form of off-take agreements. They compete in the power market just as any other firm operating in various commodity markets.

An unanticipated consequence of the reorganization of the electricity sector in the US was the alacrity with which the PURPA-inspired IPP model was accepted by developing countries interested in electricity reform, a subject which is discussed in the next section.

PROJECT FINANCE 1990–PRESENT

This section discusses the following:

- A great expansion in the use of Project Finance from **1990** onwards

[30] **Under this arrangement, each state retains regulatory control over IOUs that serve customers within their borders, and their independent regulators are responsible for the IOU transmission and distribution rates.**

into all corders of the globe, aided by the desire of many countries to reform their infrastructure (network)industries, particularly their power sector.

- Adaptations made to the traditional PPA, as developed in the US under PURPA, for use in developing countries.
- Increased scrutiny given to fixed tariffs, the hallmark of a traditional PPA, by regulatory bodies in developed countries such as the US, UK, Norway and Australia and/or higher income developing countries such as Chile and Argentina.
- Experience of the UK with privatization and reorganization of network industries, and the great number of new approaches to Project Finance introduced in that country.

  We duly note that the US IPP, as a greenfield finance model, had the most impact in Asia where it was widely adapted, especially in those countries that were more comfortable with a gradualist approach to reform. The UK approach to privatization, *with* its ***heavy emphasis on comprehensive reform,*** found its adherents in Europe, Latin America and Central Asia.
- The emergence of networking, an outgrowth of corporate reorganization which has brought with it new approaches to Project Finance.

Export of the Traditional PPA

Motivated by the shrinking public sector budgets of its member countries and the inability of many of them to mobilize resources to meet their current needs, the World Bank stepped in to provide assistance by advocating reform in infrastructure services, private participation therein and financial packaging solutions for certain types of infrastructure facilities. The traditional PPA, with its two-tier take-or-pay structure was perfectly adaptable as a ready-made packaged approach to the financing of power generation projects. By the late 1980s, five countries in Asia had embarked, or were about to embark, on negotiations with private developers relating to the implementation of power generation capacity. In China, Hopewell Holdings, a large real estate and infrastructure developer from Hong Kong, sponsored the coal-fired Shijao B power generation plant, which achieved financial closing in 1987. Pakistan began work on the huge 1,200 MW Hub River residual oil-fired power generation plant in 1987. Sponsored by the Saudi Arabian conglomerate, Xenel Industries, the US$1.2 billion undertaking was able to achieve a full financial closing only in 1994. Slow progress in the development of this particular facility affected adversely the development of large IPPs in other countries, such as the ***Mission*** Energy's

Paiton I 1,000 MW power generation plant in Indonesia. Hopewell Holdings also sponsored the diesel-fired Navotas I 100 MW power plant located in the Philippines, a project that achieved financial closing in 1991. At about the same time, a number of other power-generating systems were negotiated successfully in Malaysia and Thailand. Outside Asia, in Jamaica, in another landmark project, International Energy Partners (IEP) and Hydra Company, a subsidiary of Niagara Mohawk, sponsored the Rockford slow-diesel 120 MW power generation plant which achieved its financial closing in 1991.

A comparison of key provisions between the traditional and international PPA is summarized in Table 2.2. As to ***similarities,*** we highlight especially the following:

- The two-tiered tariff, with the presence of a capacity and energy prices in the tariff, with the former intended to improve the predictability of revenue generation, and hence, finance-ability.
- Pay-for-performance criteria found in the capacity and energy prices.
- Margin stabilization through inclusion of provisions for periodic adjustments to the power plant's operating cost structure to compensate for inflation (as in the traditional PPA), and depreciation of the currency (for the international PPA).
- Offloading of risks to third parties related to completion, fuel supply and O&M.

Among ***differences,*** the reader will take note in Chapter 6 of the heavy reliance in the international PPA on guarantee instrument(s), or credit enhancements, to compensate for a variety of force majeure (FM) risks. A second attribute that distinguishes the international PPA from the traditional one is the exposure at the country level to cross-currency risks and/or foreign exchange availability risk.

As detailed in Chapter 1, the international PPA stimulated about US$100 billion in investment in the ten years from 1990. Its relatively simple structure was accepted with minor deviations in all parts of the world, with the vast majority of all developing countries having at least one such project in place by the end of the century. The amount of international investment in IPPs was unprecedented by any standard. Equally unusual, however, was the degree of homogeneity in structure and approach used by sponsor(s) and lenders in these types of projects.

The generation facility was not the only energy project able to mobilize Project Finance during this period. A second infrastructure facility, the gas pipeline, used the traditional throughput structure developed in an earlier era along with the concept of capacity reservation fees. Demand for

Table 2.2 Comparison between Traditional PPA and International PPA

	Traditional PPA	International PPA (Post-1990)
Tariff structure (Aimed at improving the predictability of cash flow)	Made up of two components: ▪ A capacity tariff, which includes (a) recovery of fixed O&M; (b) fixed-rate debt service; and (c) project's internal rate of return (IRR). An energy tariff, to cover the variable costs associated with generating electricity.	Same as traditional PPA. Note that the structure of the international tariff is explained further in Appendix 3.1.
Payment of capacity price	Contracted capacity has to be made available for the full month in order to warrant the payment by the utility of the full capacity price. Whenwer the capacity made available in any given month is a fraction of contract capacity, capacity price is paid pro rata.	Same as traditional PPA. Essentially, it is the IPP's ability to meet the pay-for-performance criteria and the ability of the utility to make the obligatory capacity payment that provides the project with its predictable cash flow.
Payment of energy price	Essentially a pass-through meant to cover variable expenses associated with power generation. However, the energy price has some pay-for performance characteristics as well. For example, total reimbursement for fuel expenses, by far, the largest component of the tariff, cannot exceed consumption based on heat rate efficiency specifications agreed to contractually.	Same as traditional PPA

Table 2.2 (continued)

	Traditional PPA	International PPA (Post-1990)
Payment risk	US IOUs are considered creditworthy and hence. payment risk generally is minimal.	Many developing country utility off-takers, owned by the government, are not considered creditworthy. In these cases, performance by the utility under the PPA is guaranteed by the central government through an implementation guarantee, and often beyond that, by one or more of the donors under their specially devised guarantee programmes, discussed subsequently in Chapter 6.
Cross-currency risk	▪ Funding in US dollars. Revenue in US dollars.	• Funding largely in US dollars. • Revenues generally in local currency.
Tariff adjustments	Generally, the tariffs are fixed on a long-term basis. However, periodic adjustments in certain components of the tariff are made to compensate for inflationary effects on the cost of fixed or variable O&M expense.	Same as traditional PPA, except that periodic adjustments in certain components of the tariff are made to cover inflation as in the US case, and in addition, the depreciation of the local currency relative to the dollar. This has the effect of permitting revenues in local currency terms to keep pace with expenses, which in the case of a typical IPP operating in

Table 2.2 (continued)

	Traditional PPA	International PPA (Post-1990)
		a developing country are largely denominated in dollars.
Offloading of risks to third parties (Failure to build the plant on time, to access fuel at an acceptable price and quality and/or to ensure transport to site)	As discussed earlier, many of these risks under the US IPP were allocated to third parties, who backed up the risk through contractual provisions to pay liquidated damages (LDs).	Same as traditional PPA. The structure of these LDs is generally designed to keep the project vehicle unaffected in the event of a failure to perform by a counter-party (see Appendix 5.1).

pipeline finance abroad was driven by growth in energy demand, discoveries of important natural gas fields in some parts of the world and increased concerns in respect of the environment. In the period 1990–97, at least 27 developing countries introduced private participation in the T&D of natural gas as part of a broader sector reform that included creation of a new regulatory framework, and the vertical separation of the sector into its three basic business units – production, transmission and distribution. As a direct consequence, the private sector assumed the operations or construction risk of 77 natural gas transport projects during this period with investments totalling US$18.9 billion.[31] About 55% of this total went to the acquisition of state-owned gas transport companies divested by their respective governments, while the balance represented greenfield Project Finance. Of the latter, many are located in gas-rich Latin America and the Caribbean. A total of five cross-border pipelines achieved financial closing during this period, including the Yadena gas pipeline from Myanmar to Thailand; Maghreb gas pipeline from Algeria to Europe; Gas-Andes pipeline from Argentina to Chile; and two separate projects making up the Yamal gas pipeline in Belarus and Poland.[32]

[31] Klein, Michael, "Competition in Network Industry", World Bank Policy Research Working Paper No 1591, April 1996, p. 3.
[32] Ibid, p. 5.

Privatization of Electricity Reform in the UK

While the US may have supplied the Project Finance models, it was the UK, along with a number of other countries, that provided the experience in the privatization of network industries and their reorganization.

Chile introduced a competitive power pool in **1978** when the generating plants were still state-owned. Post-privatization, dispatch decisions in that country are now made on the basis of the audited costs for each generating plant which are reset periodically, not on competitive bidding as is the case elsewhere. A new merit order for dispatch is resolved with every audit. The Chilean model. as with that of the UK discussed further below. suffers from a high degree of concentration in the ownership of generation assets as well as a lack of barriers to vertical integration. In contrast, a relatively promising approach was introduced in **1992** in Argentina, where strict limits were placed on the degree of vertical as well as horizontal integration. Although preconditions exist in that country for genuine competition, the power pool, as in the case of Chile, is based on audited costs rather than competitive bidding. Norway introduced its power sector reorganization in **1992,** while the Province of Victoria in Australia did so in **1994.** Results from the introduction of fuller competition in these two cases remain encouraging.[33]

The UK, or more precisely England and Wales, privatized the electricity industry in April 1990,[34] but a background to that decision can be traced to **1979.** When Prime Minister Thatcher assumed office in that year, the focus was on privatizing companies, such as those in the telecommunications services and oil sectors already operating in competitive markets, but which had been previously nationalized due to their strategic importance. It was only after the privatization of British Telecom in **1984** and British Gas in **1986** that the government undertook the more difficult task of privatizing utilities.

Before its privatization, the electricity system had consisted of a single generation and transmission company, the Central Electricity Generating Board (CEGD) and **12** area boards, responsible for distribution in specific areas. The central issue in the UK, as it was in the **US,** Norway, Chile and other countries, was how to introduce more competition and efficiency into the electricity sector. Tactics in this regard developed along the following lines:

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[33] Ibid, p. **16.**

[34] **In contrast to Chile, UK, Norway and Argentina, the vast bulk of the US electricity sector was already under private ownership. In the US case, the focus is on sector reorganization.**

- Eliminate the vertical integration of the UK electricity sector for the express purpose of permitting open competition among those elements of the system that are able to compete freely, particularly in generation and supply.
- Retain public ownership of nuclear power generation and, at the same time, create incentives, as had been done in the US, for the development of new power generation based on renewable energy.[35]
- Encourage open competition and transparency in bulk power generation through the organization of a power pool with reliance placed on competitive bidding to establish the rights to generate and determine the prices to be paid.
- Implement performance-based regulation of the monopolistic aspects of the business, such as T&D physical infrastructure, and allow competition to "regulate" power generation and supply.

The initial transition stage contained the following basic elements:[36]

The area boards were privatized intact as Regional Electricity Companies (RECS) with no change in their commercial scope. The CEGB was split into three separate parts: two competing generating companies, PowerGen and National Power (nowInternational Power), and a monopoly transmission company, the National Grid Company (NGC).Shares in the NGC were floated with those of the RECs, with each of the latter owning a pro rata share of NGC. To prevent any abuse of their ownership position, RECs were not allowed to interfere in the day-to-day operations of the NGC. To offset the market dominance of the two principal generating companies, however, the RECs were allowed to acquire an independent stake in the generation limited to 1.5% of their power needs.

The new regulatory system for electricity supply was based on that developed for the gas and telecommunications industries. The competitive elements of the business, generation and supply, would not be regulated. The monopoly components – the physical infrastructure involved with T&D – were to be regulated using the RPI-X formula developed originally for the privatization of British Telecom in 1984. Under this approach, the price of transmitting electricity through the network was permitted to rise by the general inflation, the retail price index (RPI) less a factor, X, which the

[35] **Initially, nuclear power was not included in the privatization. The newer plants were reorganized and privatized in 1996. A new company, British Energy Generation, emerged from this privatization in 1998.**

[36] **Several other changes were phased in over time, with the final transition ending in May 1999.**

regulated company recovers by increasing its efficiency.[37] The X factor is set through a negotiation with the regulator. The advantages of the scheme are that it controls tariffs, generally held to be more politically sensitive than profits, and it ensures that efficiency gains flow towards the consumers. RPI-X has been applied to many other privatized utilities within the UK and abroad as well. In the cases of British Gas and British Airports, which were privatized in 1986 and 1988 respectively, the formula was modified to reflect variations in their cost structure which were not captured by the general consumer price index. The formula applied in these cases is RPI-X+Y. The Y factor allows for changes in costs that are peculiar to the industry and not captured by the general consumer price index.[38]

As part of the initial transitional phase, two measures – the Nan-Fossil Fuel Obligation (NFFO) and fossil fuel levy – were introduced for the purpose of supporting investment in renewable and nuclear power projects. The NFFO continues to require RECs to enter into contracts to purchase specified amounts of renewable electricity from IPPs. Since 1990, several such orders for renewable energy installations amounting to approximately 1,500 MW were issued. The fossil fuel levy is paid by customers on their electric bills in the form of a special tax. These two measures combine to serve as a catalyst for investment in renewable energy. While the NFFO requires utilities to purchase a certain amount of generation based on renewable energy, the REC makes up any cost difference between the contract tariff and the monthly pool price by drawing on resources from the fossil fuel levy.

Although the British experience with privatization started modestly in 1979 with the sell-off through IPOs of BP (now BP Amoco), British Aerospace, Cable and Wireless and Amisha International, the privatization programme evolved in quite unexpected ways.

While the UK government experimented with a handful of different approaches to the sell-off of state-owned companies, the overwhelming majority of smaller companies were sold eventually through leveraged management and workforce buyouts. In such a structure, a percentage of the permanent Acquisition Finance was mobilized in the form of equity with the balance raised from commercial banks in the form of debt. At its

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[37] **Thomas, Steven D. and Mitchell, Catherine, "The British Restructuring Experience: History and Lessons for the United States", a report prepared for the National Council on Competition and the Electric Industry, 18 April 1997, p. 8.**

[38] **Williams, John, "Privatizing a Major Public Corporation", in *Privatization: Tactics and Techniques*, ed. Michael A. Walker, The Fraser Institute, 1988, p. 28.**

simplest, such a transactional structure is a Project Financing (ex-construction period). To organize the buyers, management creates a syndicate which management and workers join. Working closely with advisors and/or lenders, the individuals, collectively, raise equity for the buyout by pooling their savings and raising additional funds as necessary by mortgaging their homes. By pledging all of the acquired company's assets, residual amounts needed for the acquisition are mobilized from lenders.

National Freight Corporation was one of the first British companies to be privatized in this way. Eventually, many hundreds of state-held companies were divested using this method, including companies that were initially thought to be non-saleable. Vickers Shipyard, National Bus and Leyland Bus are the most prominent examples of smaller companies that fell into this category. Although most were performing very poorly at the time they were divested, many have done well under private ownership. The British privatization programme has many interesting lessons. For example, it is widely held that it succeeded in selling its "dogs" in part because it divested itself initially of some very good, profit-making companies that had been competing successfully in international markets. By so doing, it created interest and momentum in the programme that made the subsequent, more difficult, sales easier. From a narrower Project Finance perspective, another lesson learned is that the technique of a leveraged management and workforce buyout could be applied successfully to an ever-expanding list of state-owned companies operating in mature industries.

Experience with privatization of utilities such as power, gas, telecommunications, water, airport terminals and others in the 1980s and early 1990s led eventually to a focus on greenfield facilities. The previously discussed NFFO and fossil fuel levy encouraged the development of about 1,500 MW by IPPs that featured renewable energy technologies such as landfill gas, sewage gas, hydro-power, wind energy, waste-to-energy and biomass gasification. In a parallel development, a significant amount of new generation featuring combined cycle gas turbine (CCGT) technology was also acquired. Natural gas became the fuel of choice for new generation, in part because the North Sea resource became available on the domestic market for the first time on very favourable terms. Although coal is still the dominant fossil fuel in the UK, the new IPPs have reduced its importance by significantly contributing to the diversification of the fuel mix used in the industry. The ownership of these new plants is divided among International Power, PowerGen and a number of IPPs, which sell some of their capacity under contract to the RECs. A few of these systems are MPPs which are able to mobilize debt finance on the basis of a hedge mechanism

referred to in the UK as a contract for differences (CfD). Essentially, in a CfD, a counter-party (such as an REC) agrees to guarantee monthly revenue to the IPP, based on a fixed price per MW of capacity, in return for receiving from the IPP any pool receipts in excess of that fixed price. In this case, the fixed-revenue guarantee per MW provides the revenue predictability needed by lenders to arrive at a favourable lending decision. Amid considerable publicity, the CfD worked well for a few deals, but its availability appears to be thin.

Many different installations were built using Project Finance in the UK. Successful development of oil and gas fields in the North Sea led to a need in the 1980s for other kinds of supporting facilities including pipelines, production platforms, oil refineries and petrochemical complexes. Applications of Project Finance were expanded in the UK and applied eventually to a variety of greenfield infrastructure facilities including toll roads (bypasses, tunnels, links, etc.), trams and links, port, rail, waste disposal, bulk water supply and treatment, and underground rail, as well as social infrastructure such as prisons, hospitals, specialized hospital laboratories, schools and immigration detention centres. The private sector was called upon also to provide a variety of logistical services to metropolitan police (building and operation of emergency call centres), fire departments (leasing of fire trucks and other fire-fighting equipment), employment service (providing payroll and other support activity), land registry (enhanced IT equipment and services to improve record keeping), highway agencies (implementing more sophisticated traffic control functions), and local government (provision of leisure centres), etc.

The concept of public-private partnerships in the UK was carried to new heights when applied to the provision of services to the military establishment such as the leasing of vehicles of various kinds – runway sweepers, de-icing equipment, fuel tankers, fire-fighting equipment, simulators to provide synthetic training services, etc. This form of public-private arrangement was also found in the building (or refurbishing) and operation of a host of facilities including new training centres, officer and family housing, troop barracks, bulk water systems, and water-treatment and sewerage facilities.

Emergence of Networking

Networking, a trend that was spawned by corporate reorganization, came into its own in the 1990s. A network refers to a collection of independent companies that are formally, or informally, brought together to participate in the conduct of an integrated business. It is a hybrid organization com-

bining the coordinating functions of integrated hierarchies with a decentralized structure of independent firms. Network activities may be coordinated by a lead firm that organizes the individual firms into a formal, or quasi-formal, alliance. The main purpose of a network is to compete more effectively. Some network organizations are relatively stable relationships; others are created to address a single, or a series of similar, opportunities.[39] It is also part of a larger trend that affects many corporations, now referred to as "outsourcing". A number of US companies, heretofore totally integrated, now outsource a large number of components that fit into their finished products, taking advantage of such arrangements to enhance their competitiveness.[40] They include organizations such as Ford and General Motors, which outsource many, if not most, of the components that go into their cars. They also include a group of companies that are allied together to pursue a single business, or a series of business opportunities, from which they all benefit. For example, in constructing a single facility, or a series of them, an EPC contractor serves as a strategic broker for manufacturers, shippers, land transport, marine transport, civil engineering, electrical and mechanical work, and other firms that come together under its direction to construct a facility. Likewise, a series of small companies may come together to provide an integrated service to a larger company. When all of the obligations within the network are spelled out clearly in the form of binding purchase orders, it creates the possibility of a project financ-

Similar networking relationships are created not only to increase revenues but also to reduce risk. In the power industry, the risk of early project development is the most acute with long lead-time projects, particularly those with complicated air- and water-permitting requirements, such as coal-fired generation facilities. An IPP may be interested in diversifying its power generation facilities from gas to coal but may be wary of the increased development expenditure required. For this purpose, it may enter into an agreement with a first-stage developer, wherein the latter assumes responsibilities for developing a series of coal-fired facilities for mutual benefit and agrees to do so up to a certain stage in project development. Beyond that stage, the IPP may agree to support all project development expense borne by the first-stage developer and, in addition, cede a carried

[39] An excellent discussion of network organizations can be found in Kensinger, John W. and Martin, John D., "Financing Network Organizations", in *The* New Corporate Finance: *Where* Theory *Meets* Practice, ed. Donald H. Chew, Jr., McGraw-Hill, 1993, p. 562.

[40] Ibid, p. 562.

[41] Ibid.

interest in every project that meets acceptable pre-set criteria. The amount of such carried interest will vary, generally by reference to the project's internal rate of return (IRR) in the lenders base case at financial closing. Although the IPP's returns may be lower in projects under the agreement, even though they are implemented successfully, the arrangement deflects a great deal of unwanted development risk, removes the need to hire and carry on the payroll highly specialized people, while at the same time, creates diversification options for the IPP's management. The first-stage developer is generally a very entrepreneurial company, more willing to accept risk, using imaginative ways of making it more manageable. To support its commitment to the IPP, the first-stage developer may enter into an arrangement between itself and an engineering, procurement and construction (EPC) contractor. In this agreement, the EPC contractor would obligate itself to infuse risk capital of its own to support certain key development tasks, such as (a) identification of suitable projects; (b) evaluation of any fatal flaws; (c) assessment of costs and budgets; and (d) securing of permits and consents. The EPC contractor would deliver the contract to build the plant in return for a share of carried interest negotiated by the first-stage developer, and/or through a separate agreement with the IPP. Although this tripartite agreement would constitute the basic strategic alliance for project development purposes, it is possible to bring in other parties into the effort to further reduce risk.

Review Questions

1. What are the three types of structured finance, and what are the differences between them?
2. What concepts do CADS and FCF represent, and how do these differ?
3. Compare and contrast the type of due diligence needed for an IRB vs. an oil/gas financing.
4. What is the trustee borrowing structure used for?
5. What is the difference between an efficient and an inefficient tax payer in an owner-lease Project Finance?
6. What is a double whammy lease?
7. Discuss the historical evolution of the corporate finance movement. What is significant about it for Project Finance? Acquisition Finance? Structured Finance?
8. When and how did derivatives come into being?
9. Discuss the differences between a debt hybrid and a derivative.
10. What are debt hybrids used for? Give one or two examples of a debt hybrid.

1. Describe the concepts of open access, pooling and timetabling. What do they apply to? What do they have to do with Project Finance?
2. What was the first network industry that was reorganized in the US?
13. What are the differences between a traditional PPA and an international one?
14. In what ways is the experience related to the reorganization of network industries different in the UK, compared to the US?

APPENDIX 2.1

MERCHANT POWER PLANTS (MPPs)

Differences Between IPPs and MPPs

IPP projects have undergone a number of changes. Initially, all had off-take agreements, although this is no longer the case today.

IPP projects without a PPA or revenue contract are regarded as "pure" MPPs. Those with an off-take agreement – covering a portion of, but not all, operating capacity – are hybrid MPPs, which occupy an intermediate risk position between a project that has a revenue contract, theoretically eliminating market risk, and one that is fully exposed. Pure and hybrid MPPs compete for market share in the same way that other firms compete in commodity markets. MPPs are common in the US, UK, Australia, Argentina, Norway, Chile and a few other countries where they are considered to be the wave of the future.

Electricity Pool Markets

Pure and hybrid MPPs compete in pool-based, short-term electricity markets that are coordinated by a system operator. Suppliers compete for the right to generate and may have several generation plants – each of which has its own marginal cost structure. Competition among generators is ensured through a bid-based spot market built on the principles of economic, centralized dispatch. The system operator is a regulated entity as its activities are those of a natural monopoly.

In most countries, demand for electricity is highly variable depending on the season, time of day and price. Pool-based, short-term electricity markets are "day-ahead-hourly" or "day-ahead-half-hourly" marketplaces where economic dispatch is determined on the basis of anticipated demand during corresponding hours or half hours. That means that wholesale electricity suppliers will bid their resources into the market the day before and submit separate bids for each generating plant for each period. The system operator will tabulate the bids and stack them from lowest to highest, matching demand forecast for the next day. The operator will then determine the least cost dispatch to match the anticipated load. The highest hid resource dispatched in any given period sets the system marginal price for electricity (sometimes referred to as market clearing price).

If a supplier bids too high a price for its resources, the unit generator is not dispatched and the supplier receives no revenue. This encourages suppliers to bid the most competitive prices in order to ensure dispatch.

In the absence of transmission grid constraints, the price of electricity should be identical in all locations throughout the grid at a particular time because there is only one system marginal price. However, not all of the power that is "dispatch-able" for any period is usable because there may exist transmission constraints affecting point-to-point transfers within the grid. Hence, some of the cheap plant will be "constrained off". In this case, demand will be met by higher cost plants that, in the absence of the transmission congestion, would not run, but due to this factor are "constrained on".

Users pay the pool selling price (PSP) to the pool for each energy unit consumed during each period. Bid-accepted constrained-off generators are paid lost profit. Bid-unaccepted constrained-on generators are paid their own bid. PSP reflects the weighted average of system (a) marginal price; (b) stranded cost; (c) constrained-on generation; (d) constrained-off generation; and (e) charges for pool services. Stranded cost, it should be noted, arise when there are capacity contracts to ensure supply.

A power pool may be a (a) capacity-contracted-based pool, e.g. New England Power Pool and SEP Netherlands; or (b) spot-priced-based pool, e.g. Chile, England, Wales and Argentina. In spot-priced-based pools, all market-clearing prices are set on a spot basis. Under this kind of arrangement there are no capacity payments. Every generator gets paid the system marginal cost, the difference between their own marginal cost and spot price covering the fixed costs. Each generator is at perfect liberty to enter into a long-term PPA with one or more users committing a portion of its capacity to that contract, or contracts.

In a capacity-contracted-based pool, all distributors and large users contract directly with the generators for the purchase of capacity. They are allowed to buy in the spot market only the difference between their contracted capacity and, if larger, their anticipated demand during each period. Long-term contracts for capacity cover generator's fixed cost plus profits. Energy is dispatched on true variable-cost basis. Short-term market allows for resale of capacity and/or energy at prevailing rates.

Financing of MPPs

Financing of power plants has undergone a metamorphosis in the last 20 years. Traditional IPP companies addressed their projects serially. Some may have had strong enough financial statements to be able to raise implementation money on a corporate finance basis. This would have been a convenient, flexible approach, conserving time and expense. Because most of the IPP companies were fledgling firms in the early 1980s, the great

majority probably mobilized the funds needed to build their power plants on a Project Finance basis, with highly structured covenants and repayment schedules. To avoid erosion of financial statements, and as is the case today, even the strongest companies must have resorted increasingly to Project Finance techniques and practices when financing their operations.

MPPs in the US, in contrast, were created from the sale of whole portfolios of generation plants by IOUs, organized under a project vehicle referred to as a Genco or structured corporate. The project vehicle with its diverse asset structure was auctioned off to the highest bidder. The latter may have consisted of a single buyer or, more usually a number of IPP/energy companies organized as a joint venture for the purpose of responding to the tender and subsequently raising the money to acquire and operate the Genco if their bid was successful. The new owners did not have any revenue contracts although the Genco had assured diversity built into its asset structure in terms of technology, geographic location, revenue source and fuel. Many Gencos, created through one or more portfolio acquisitions, kept on expanding through further acquisitions and divestitures in different regions. If the Genco were viewed by lenders as creditworthy, indenture agreements might be structured relatively more flexible than would be the case in a traditional Project Finance, e.g. permitting the Genco flexibility in raising additional debt or equity funding.

Lenders, when examining an MPP, consider the following:

- Technology. Modern, cost-effective technology is key to successful MPPs – the technology not only has to produce electricity at a low cost but must ensure the availability of the plant above 90–92%.
- Location. Plants located near high-load areas frequently have dispatch opportunities arising from transmission congestion (referred to as constrained-on dispatch), as discussed earlier. Hence, it is desirable that the plant be located near a major urban area or an industrial hub.
- Fuel Supply. Proximity to, and reliability of, fuel supply ensure best possible price and provide competitive advantage to an MPP.
- Operations and maintenance. Lenders require that the operators have experience in merchant generation. In a merchant environment, the operator must be capable of forecasting load as precisely as possible to ensure that (a) the plant is fit to be operated when demand is high, and (b) fuel supplies are optimal.
- Marketing. Superior marketing and managerial skills are added advantages in competitive commodity markets. Commitment from buyers to purchase electricity over some period, the MPP's relationship with its buyers, and its ability to provide ancillary services such as voltage sup-

port, reactive power and spinning reserves may provide competitive advantages.

The salient features of financial structure as required by lenders are as follows:

- Bankruptcy remote entity (special purpose vehicle). MPPs need to be organized as a bankruptcy remote entity, i.e. a special purpose vehicle, an entity legally distinct from its sponsors in order to ensure that it is immune from the risks faced by the sponsors. Lenders require that they enjoy first perfected security interest on project's assets, a pledge of the project company's shares, assignment of all contracts and other collateral.
- Capitalization. Because of extra risk they bear, MPPs need to be well capitalized to attract debt investors. The normal 20–30% equity required by traditional IPPs may not be sufficient for MPPs. MPPs, as they are exposed to pure commodity markets, require much more equity than hybrid MPPs. The additional capital requirement may be waived if there is substantial subordinated debt in the project capital structure.
- Debt service cover ratio. Lenders frequently require a DSCR in excess of 1.7.
- Additional indebtedness. Lenders restrict, or limit, additional indebtedness of the project vehicle. Additional indebtedness is permitted only under certain priory agreed conditions that are crucial for MPPs' survival.
- Reserve account. As is true in other Proiect Finance transactions, MPPs need to have debt service reserve accounts maintained with trustees but the requirement is more stringent than that of a traditional IPP, reflective of the greater market risk.

Often, lenders show a marked preference for hybrid structures, which include any one or a combination of the following contractual covers:

- Tolling agreements.
- Full PPAs in the early years of debt amortization.
- Partial PPA coverage for through maturity.
- Fuel contracts indexed to the electricity sale price.
- Contracts for difference.

Traditionally, syndicated bank loans have been a major source of greenfield Project Finance in the US, and they continue to be so. Bank loans, in some cases, have been used to acquire MPP portfolios and bridge the time required to mobilize permanent finance. In other cases, bank loans

with maturities of three to five years are used to acquire portfolios and establish a track record before organizing capital market financing. Some MPPs also use a blend of short- and long-term bank borrowing with an expectation of refinancing the short-term borrowing later. Bank borrowing may be sourced in the domestic or Eurodollar market. Commercial banks are buyers of securities, including mezzanine instruments issued by MPP project vehicles, and off-load their securities holdings in the secondary markets.

Banks participate in MPP acquisitions in other ways. Short-term (less than one year, often 364-day) commercial paper is widely used for bridge financing and requires bank guarantees. Bank guarantee for such paper is more easily available than bank loans of similar duration. Following Bank of International Settlement (BIS) guidelines, banks are required to maintain statutory capital equivalent to **8%** of their risk-weighted assets. But banks do not need to maintain statutory capital for their unfunded exposures with a maturity of less than one year. Moreover, the capital requirement for unfunded exposures with a final maturity in excess of one year is only half of that required for fully funded exposures.

Capital market provides a plethora of financing choices. Both debt and equity financing are available. Long-term debt may be in the form of a public placement or a private placement, as discussed below.

- Public placement. Public placement of bonds is a suitable source of MPP funding as it can satisfy the longer maturity need. Bond markets also provide substantial flexibility as, in addition to a longer maturity structure, bonds may be issued as subordinated or senior instruments with variable or fixed interest rates, amortizing or bullet structure, etc.
- Private placement. **A** private placement occurs when the issue is targeted at insurance companies, pension funds and other institutional investors. Generally, borrowers in this case directly approach the lenders. The advantage of a private placement is that it does not require regulatory approval and public disclosure. The features of private placement bonds may be similar to those of a public placement. Though cost of funds in the private placement market follows that of a public placement, the former instrument is generally more expensive than the latter, or the eurobond market.
- **Eurobonds.** Eurobonds are US-dollar-denominated bonds issued outside the US by US companies. The issue is also underwritten by foreign entities. Because of favourable financing terms, e.g. substantially lower cost of funds, the Eurobond market experienced a tremendous growth between **1975** and **1988.** Later, the volume of Eurobond financing levelled off due to increased participation by institutional investors and

enhanced competition. Unlike US domestic bonds, whose coupon payments are semi-annual, Eurobonds are generally featured with annual coupon payments. Another distinguishing feature is their short maturity, normally three to five years, because of liquidity concern of investors and exchange risk.

- Industrial leasing companies. Leasing is extensively used in MPP financing. There are many variants of leasing being practised. In a typical MPP arrangement, a financial or industrial entity forms a guarantor trust, or a limited liability company, to serve as a lessor. The latter lease-finances an asset or a plant to the lessee, the MPP.

There are two basic types of leasing: operating lease and capital lease. An operating lease is a rental-type arrangement where the leased asset remains on the lessor's balance sheet, and the lessee derives the economic benefits from the asset and pays periodic rentals. In the operating lease, an off-balance sheet transaction for the lessee, the lease-rental payments are the only related expenses.

In a capital lease, subject to accounting rules, the leased asset and the corresponding liabilities are incorporated in the lessee's balance sheet. Therefore, a capital lease is an on-balance sheet transaction for the lessee.

The tax depreciation life of an asset, as determined by the IRS, may differ from its economic life. When the tax depreciation life of the asset is shorter than its economic life, lease financing can defer the tax burden. In the initial years of a lease, high depreciation charges and interest expense reduce the taxable income and, in turn, the cash outflow as taxes.

To enjoy the tax benefit, the entity has to be tax efficient. This means that it has enough income to predictably absorb all the associated tax benefits. Either the lessee or the lessor is anticipated to be a tax-efficient entity. If the lessor qualifies, the lease may be structured as operating lease; if the lessee is tax efficient, the lease may be structured as capital lease.

If the lessee is in a position to absorb the tax benefits, it is more likely to prefer a capital lease if depreciation charges and interest expenses of the lease financing together exceed the lease rentals of an alternative operating lease. If the lessor is in a position to absorb the tax benefit, it is more likely to prefer an operating lease, where the asset remains on the lessor's balance sheet, and it is able to opt for accelerated depreciation in its tax filing. The beneficiary can share this benefit with the lessee in the form of lower rental payments.

MPPs are using synthetic leases that provide the advantage of operating lease for earning and advantage of capital lease for tax benefits. Synthetic leasing has evolved as Financial Accounting Standards Board (FASB) requirement for a capital lease treatment differs from that of the IRS. The

assets on which depreciation can be charged for tax purpose may remain off the balance sheet in reported accounts. Therefore, in a synthetic leasing, the lessee need not show a leased assets and corresponding payment liability on the balance sheet but retains the tax benefits and the operating control linked with ownership of the assets.

Because of huge capital involvement in power plant financing, sometimes leveraged leasing is used. For a lessee, a leveraged lease is no different from other leases. The lessor raises the funds required to purchase the plant which is to be leased, through its issuance of instruments such as debt, subordinated debt or equity. Each of these has different priorities of claim on the asset's residual value and cash flow. The leasing company generally takes an equity position, or last-claim position in the leased asset. In addition, the issuance of debt leverages the **tax** benefit the lessee may enjoy by structuring the lease.

In another variation, the lessor – an industrial or a financial entity – purchases a plant from an MPP, the lessee, and leases the plant back to it. From the lessee's perspective, this type of transaction may be referred to as a sale and leaseback.

CASE STUDY

A WOEBEGONE WEM!

It was Monday morning. As usual, I was in the office early, around 8.00 a.m. My boss, Tom, had just buzzed me into his office. As I entered, I noted that he was unpacking all the files he had taken on his trip. He looked oddly distant and disturbed. Tom had just returned the day before from a one-month tour of Superior's power plant operations in Asia. He had called me at home, upon his arrival from the airport, to ask me to be in the office early the following morning.

"Welcome back, Tom," I offered. I could not have said it with a great deal of enthusiasm. I had spent a wonderful month without Tom in the office. And now, he was back.

He didn't bother to reply. Instead, he motioned me to sit down.

"As you know," he said, "I've just come back from Asia, where I visited our power generation plant at Lamshoro, in India. While I was there, I met with Commissioner Batri of the state regulatory commission. It appears that Gujarat is bent on going in the direction of a wholesale electricity market (WEM) and competitive generation within the next 12 to 18 months. Batri has asked that we collaborate with the state by releasing Gujarat State Electricity Board from the 17 years remaining on our original 20-vear PPA."

I can't say that I was taken by surprise! The discussions at the state level regarding the restructuring of the sector had been going on for some time. I remember working very hard on the Lamshoro deal in the early 1990s, during its very troubled project development period. We were the first IPP to achieve financial closing but it had been a very arduous process. In effect, we had paved the way for others. It seemed inconceivable that the authorities in India now wanted to walk away from their contractual obligations a few scant years later - WEM, or no WEM. I had a second, more troubling, thought. If India walked away from our PPA, on the grounds that it was incompatible with competitive generation, other countries would surely follow suit. What did that mean for the 30-odd projects that Superior Power had implemented in the developing world over the last 15 years? The thought was too complex, too troubling to think about.

Tom looked at me briefly to ensure that he had my full attention. Satisfied, he continued as if he needed to get the matter aired with someone.

"I believe the Gujarat regulatory authorities want to play fair with us. In return for giving up our PPA and going MPP, they want us to propose a compensation formula that is transparent and beyond reproach. Hence, over the next day, I want you to think of a fair and equitable way of pro-

posing compensation – something that I can sell both to our internal management as well as to the state regulatory body."

"Tom," I said, gathering my thoughts slowly. "Have you considered taking them to court?"

"No!" he said. "The plant is very efficient with one of the lowest heat rates in our entire international portfolio. It should be able to compete effectively under a WEM system for years to come. We just won't make as much profit, I guess. The problem is how to get compensated for the shortfall that we will suffer if we convert to MPP. We are not taking them to court, unless we are backed up to the wall."

After taking another small sip of coffee, Tom continued his discourse.

"Look, we have a PPA that virtually guarantees an internal rate of return on our investment of **16%** per annum, based on **68.5%** of the Lamshoro Plant's total capacity being made available at all times. Up to 68.5%, dispatch is take-or-pay, with no market risk to speak of. Beyond 68.5%, it's take-and-pay arrangement with delivered energy qualifying for a special bonus tariff. Based on the average dispatch of **87%** of its capacity since it became operational three years ago, Lamshoro is returning 23% per annum on our investment. The only negative to our situation is that we are obligated to list a portion of our stock on the stock exchange within seven years from COD [commercial operations date]. We want to hold on to the shares for as long as we can and, when we sell, we may be forced to do so under a different set of conditions than originally envisaged."

Tom stopped to catch his breath.

I was well aware of this. The plant had done remarkably well even in the stifling heat of Gujarat. I sometimes wondered how power plants were able to perform as well as they did in such arid conditions. "You know, Tom, the banks that lend us money to build the plant will never agree to this; or if they do, they will ask us to sink more equity into the deal."

"I agree," he said, with a rather resigned air. "That's why," he added, "your compensation formula has to enable us to avoid having to do this. I guess the board would chop our heads off if we proposed any option that involves sinking more money into the plant at a time when the market is going adverse on us."

"As an operating principle," he continued, "we should firstly and preferably, provide the state with some mechanism that allows us to keep in substance what we have negotiated while changing our status to that of an MPP, and secondly, seek compensation that provides us with the difference between what we make now and what we should be able to earn in the future under competitive conditions."

"Tom, I don't see a clear solution with either of your operating princi-

ples. Let's take the first one. How in the world do you propose to keep in substance what has been negotiated if you change its form?"

"I've actually given this some thought," Tom said, pausing.

I braced myself for one of Tom's clever ideas. Actually, he was famous around the firm for his creativity, always coming up with solutions to problems. The difficulty was that I was his principal staff resource. All of his good, bad and unworkable ideas landed on my desk, generally for long and hard testing before they were "polished" by Tom for presentational purposes to the higher-ups. I didn't usually mind this too much because I loved the work and had learned a lot under Tom's tutelage. I had to admit, however, that my girlfriend's description of me as "Tom's bag carrier" had more than an ounce of truth to it.

Tom continued solemnly, "We could propose an exchange of our PPA for a CfD [Contract for Difference] with one, or more, of the state-owned distributors, in effect exchanging the revenues earned, once competitive generation is introduced, for revenues earned under our traditional PPA. For any given level of dispatch and spot rates awarded under competitive conditions, we would exchange these variable revenues for revenues we would have earned under the traditional PPA, assuming equivalent dispatch at the old fixed tariff. Whenever our future accepted spot tariff is higher than our current long-term fixed rate, we pay our counter-party the difference in revenues generated; whenever our spot rate is lower than our current long-term fixed rate, they pay us the difference. It works just like net payments under an interest rate swap."

"Gee, Tom, can we point to a precedent where the mechanism was used to resolve a similar problem?" I asked, now fully working my way into my normal role as devil's advocate.

"John, the CfD mechanism has been used in England and Wales, of course, on several deals at a time when the market needed the CfD. The English banks could not stand the uncertainty of variable prices and revenues. Now there are very few of these CfDs being issued. More recently, the mechanism was used in Korea in 2001 as part of the sale of some generating assets. The government tendered the assets with a traditional PPA in order to enhance the attractiveness of the assets and ensure itself of a higher level of sale proceeds. There was an unusual aspect to the tender documents, however. They offered to convert the long-term PPA to a CfD, once the switch to competitive generation was made. The offer accomplished two things: firstly, a lower level of uncertainty among the bidders, and therefore a higher level of competitive interest, and secondly, I believe, a higher price for the assets."

"Has the switch from PPA to CfD actually been made?" I asked.

"Not that I know of," Tom responded. "Korea has slowed down its reform, particularly the introduction of a WEM. The important thing is that there is a precedent in the market. It's not a perfect precedent for what we are discussing here, but a useful partial precedent nonetheless."

"I am not sure about this," I said, gaining conviction. "Korea, at the time, had something to gain by unilaterally offering to convert a PPA to a CfD – a higher level of bidding interest and, quite probably, a higher price for the assets it was selling off. India has nothing to gain by offering us a CfD in exchange for our PPA, do they? It may appear like a "smoke and mirror" game to them!"

"Maybe," Tom said. "That leads me to another point, which is the importance of doing some thorough staff work on the issue. We may have to develop several solutions."

I knew this was coming! Tom had his own unique way of preparing me for a long day, and likely a long night. I would have to kiss off the dinner date with my girlfriend that evening. I could already hear her criticism of Tom and the inhumane work hours he kept.

"Tom," I said, gathering myself slowly, "I think your second operating principle has problems too."

"You mean seeking compensation on some basis that makes sense? Why?" he asked blankly.

"The more competitive the market is made by the regulatory body, the higher the level of compensation they will have to provide us," I said. From the look at Tom's face, it was clear that he had not thought of this. "In effect, by proposing compensation based on the anticipated difference in operating results, it seems to me that we would be giving them a disincentive to introduce maximum competitiveness in the market," I continued. "The more competitiveness they introduce under their rules, the higher the level of compensation they have to provide to us."

I was pleased at myself, for having made a good point. That was one of the advantages of working for a guy like Tom. I had done so much staff work on electricity markets for him that I was regarded as "insightful" and "a valuable resource" throughout the company. My personal appraisal reports had reflected this for the past year. I had Tom to thank for that.

Rather than allow my previous comment to sound negative, I followed up quickly in a more positive tone. "OK, let me get going on this. What kind of approach should we adopt for the calculation?" I asked. It's not such a simple matter. "For instance, under the PPA, Superior may capture 16% return although we assume the risks of proper O&M; in reality, the PPA is delivering 22% or more. There is a big difference between these two numbers. Which one should we base our calculations on? Moreover, how

do we calculate the returns to us if the plant goes MPP? We could simulate the performance of the plant if we knew how the WEM will operate. But the operating rules are not known yet and will not be known for a while. Frankly, I don't see a clear way on this one."

For the first time, Tom smiled.

"John, if I could figure this out by myself, I wouldn't need you. It's for you to get your head clear on all of this and report back to me with a transparent scheme in 24 hours. Focus on concepts and approaches first. We can run numbers later."

chapter 3

PROJECT DEVELOPMENT

INTRODUCTION

In a Project Finance context, the term project development refers to the process of preparing a new project for commercial operations. The process occurs in three distinct phases:

- Origination *of* a project, usually a capital-intensive facility, by securing a conditional right from a ceding authority pursuant to a tendering process or an unsolicited proposal to build the facility.
- Negotiating and formalizing the needed project agreements with major project participants that serve the purpose of defining the technical, economic and commercial outlines of the project.
- Mobilizing required financing through own resources, or jointly with lenders, as well as supervising the management organization, construction and successful commissioning of the facility.

These tasks define three distinct stages in the process, referred to herein as the pre-bid stage, contract negotiation stage and money-raising stage of project development. Each has its own set of challenges as will be discussed further. Although the process for developing a project is very similar in both industrialized and developing countries, this chapter will focus on issues more common to developing countries because of the added complexities involved, especially in project origination and money raising.

Before beginning the main discussion in this chapter, it may be useful to define solicited and unsolicited proposals. In a solicitation, solicited proposal or competitive tender, a host country ceding authority issues a call for proposals from interested private bidders to compete with each other, usually under well-defined procedures for the rights to build and operate a specific infrastructure facility. In contrast, an unsolicited proposal is prepared under the initiative of a private entity and directly submitted to a ceding authority. Quite simply, the private firm(s) foresees an underserved

market in the host country and proposes a specific project with defined attributes to address its perceived needs.

Multilateral banks such as the World Bank and Asian Development Bank (ADB) prefer a tightly defined tendering process, referred to as an international competitive bidding (ICB). Its importance derives from the involvement of the multilateral banks, directly or indirectly, in the origination of a large number of projects. They provide not only technical assistance in preparing the documents but also signal their willingness to participate in the financing plan of the project in some defined way. Such institutions condition the use of their technical assistance, or other project participation, on agreement from the ceding authority that the procurement will be done according to ICB rules. A common criticism directed at the multilateral institutions is that their approved tendering methods are process-driven and de-emphasize outcome. Nonetheless, multilateral institutions are hesitant to involve themselves in projects whose tendering process does not meet their strict and precise procedural requirements. Under certain circumstances described further in Table 3.1, a project may be selected under alternative tendering rules.

Table 3.1 Acceptable Alternatives to ICB under Special Circumstances

Alternatives to ICB	Description
Limited International Bidding (LIB)	LIB is essentially ICB by direct invitation without open advertisement It may be an appropriate method of procurement where (a) contract values are small; (b) there exist only a limited number of contractors with the necessary technical and financial qualifications; or (c) other exceptional reasons justify departure.
National Competitive Bidding (NCB)	NCB is the competitive-bidding procedure normally used for public procurement and may be the most efficient and economical way of procuring goods or works that, by their nature or scope, are unlikely to attract foreign competition.

Source: World Bank *Guidelines: Procurement* under *IBRD* Loans and IDA *Credits*, January 1995, Revised Januaryand August 1996.

The principal advantage to the use of ICB, or its alternatives, is that they are essentially transparent processes. Evaluation and award of bids are made according to ground rules set forth at the beginning of the process and adhered to throughout the tendering process. A second useful purpose of a well-designed solicitation is to maximize the bargaining position of the ceding authority. It is at its zenith immediately after the release of a

carefully designed request for proposals (RFP) but may diminish rapidly upon selection of the first-ranked bidder.

The major drawback to the ICB is the time it takes to conduct the process. If one includes the delays involved in the design and preparation of bidding documents, a formal solicitation can take at least six months to complete and sometimes much longer. This differs from an unsolicited proposal (sometimes referred to as a direct negotiation) under which the sponsor(s) proposes a specific project to a ceding authority. If the project is of interest to the latter, the two parties directly negotiate the terms of a licence or concession without undergoing a formal tender. The major drawbacks to the direct negotiation are (a) its lack of transparency; (b) loss of bargaining position for the government; and (c) inability of the World Bank (as well as some of the regional multilateral banks) to participate in the project in any way.[1] Both systems contrast sharply with private sector procurement practices which are more flexible, less rigid and attract far less attention. In most private companies, executives are able to make procurement decisions based on bottom-line considerations or, in cases where cost effectiveness cannot be justified, by following any process that leads to a competitive outcome.

For the private firm, issues and activities in developing a project pursuant to a solicited or unsolicited process are relatively similar. There are some differences, however. An unsolicited project may be highly advantageous to the developer. Unquestionably, the resulting competitive edge and promise of a quicker negotiation or lower cost development are often irresistible lures. Such a project, however, may also have adverse consequences. If the negotiation with the ceding authority is not perceived to be transparent, or involves an obvious loss of bargaining power for the government, a strong public outcry could arise. If pronounced enough, the adverse reaction may create delays in the implementation of the project. There are instances of unsolicited projects initially accepted by government but abandoned subsequently after excessive public outcry and delay.

Solicited and unsolicited projects raise a number of technical issues that are covered within the supplementary material that accompanies this chapter. Appendix 3.1, for example, provides a simplified step-by-step illustration of how to calculate a power project tariff. Pursuant to this issue, some of the review questions at the end of the chapter explore more intricate matters, e.g.:

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[1] As we will discuss in Chapter 4, other members of the World Bank Group such as the International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) are able to participate in a project that is not tendered.

- Methodology used to levelize uneven tariffs for the purpose of comparing the tariff structure submitted by one bidder with that of another.
- Importance of using an appropriate discount rate when levelizing tariffs to avoid unintended and perverse effects.

Finally, the case study on public procurement at the end of the chapter places the reader in the middle of common bidding dilemmas faced by the ceding authorities where he or she must arrive at potential solutions.

PRE-BID STAGE

As may be seen from Box 3.1, the pre-bid stage encompasses a number of government and private sector activities. The processes described in the box are more orderly than they may be in practice. The illustration, however, will prove useful in that it provides a summary of what goes on when a sector is first opened to private participation. It should be assumed, nonetheless, that variations are experienced within countries in the sequencing and execution of the processes involved.

From the government and ceding authority's perspective, three steps are involved in opening an infrastructure sector to private participation: (a) creating the framework for private participation; (b) defining the project(s) to be tendered; and (c) conducting bidding process(es). Private companies will respond to each of these three steps with activities of their own: (a) identifying projects that may he commercially attractive based on own studies; (b) preparing an unsolicited bid, as and if permitted by the framework; and/or (c) participating in a formal competitive bidding.

Throughout the three-step process defined above, the sponsor(s) has the following key issues to resolve:

- Selecting the right project.
- Determining whether to submit an unsolicited proposal, if this is appropriate.
- Selecting the "right" advocacy, i.e. taking on the "right" local partner. (In theory, the sponsor(s) should be left to make a decision as to whether to take on a local partner. It is often the case, however, that government will require a certain level of local participation in an infrastructure facility.)
- Conducting a technical feasibility study with the purpose of arriving at a reasonable estimate of project costs.
- Estimating the time it will take to fully negotiate the project.

Box 3.1 Pre-Bid Stage

Framework for Private Participation	Providing Definition to Projects	Bidding Process
Action by government or ceding authority • Create policy body or agency to oversee private participation programme. • Improve legal framework • Mobilize public support. • Identify portfolio of projects. • Restructure sector(s). Create independent regulator to oversee the operations of the sector.	Action by government or ceding authority Conduct tender/recruit advisors. Select advisors. • Conduct preliminary feasibility studies for projects to be tendered. For unsolicited bids: • Review unsolicited proposal. • Decide whether to enter into negotiation. • If "yes", appoint negotiating team. • Commence negotiations.	Action by government or ceding authority ▪ Conduct international competitive bidding process to procure one or more projects. • Pre-qualify bidders. • Hold bidding conferences. ▪ Request bids. ▪ Evaluate bids. ▪ Award winning bid.
Response by sponsor • Assess market potential of projects that are of interest. ***For unsolicited bids:*** • Carry out preliminary feasibility study • Decide whether to take on local partner. • Identify ceding authority or decision-makers within government. • Issue unsolicited proposal. • Shepherd project through government. • Conduct public relations.	Response by sponsor ***For unsolicited bids: if project is accepted as an unsolicited proposal by ceding authority:*** • Address preliminary financial modelling. • Conduct technical feasibility study. • Appoint foreign and domestic legal counsel. • Commence negotiations. • Arrive at mutually agreed technical and commercial parameters. • Receive project award.	Response by sponsor ***For unsolicited bids:*** • Assemble consortium. • Prepare proposal. • Complete negotiations with partners. • Address preliminary financial modelling. • Conduct technical feasibility. • Submit completed bid. • Negotiate technical and commercial parameters. • Work out bid award disputes with ceding authority. • Receive project award.

Source: Adapted from Klein, Michael. So, Jae and Shin. Ben, "Transaction Costs in Private Infrastructure Projects – Are They Too High?", The World Bank-Private Sector (www.worldbank.org), Note 95, October 1996.

Selecting the Right Project

In addressing the issue of project selection, the following must be ensured:

- Project origination process is manageable.
- Factors exogenous to the project are considered thoroughly (e.g. country, sector, legal or regulatory risks).
- The undertaking is within the technical and financial capabilities of the sponsor(s).
- Project is finance-able in the international and/or local credit markets.

Project Origination

Sponsor(s) must ensure that the project origination process is manageable, in particular, that (a)estimated time and cost are within acceptable reason; (b)best practices are used to evaluate and award the project; and (c)innovative ideas or approaches to project implementation are not compromised. While all three of these factors may apply to all project origination activity, whether solicited or unsolicited, the first tends to affect solicitations primarily, the second involves both solicited and unsolicited projects, while the third occurs predominantly with unsolicited projects.

- Time and cost of bidding. Costs of preparing bids can be prohibitively large relative to the contract amount. For example, competitive bidding for small water utilities, each supplying just a few thousand customers, might not justify the transaction costs. One option is to pool municipalities and have them auction a single, large concession. Such pooling is widely used by municipal water systems in France. **A** second option sometimes used to limit the time needed to complete the solicitation, if not the costs of preparing the bid, relies on restricting the number of bidders through a short-listing procedure. Still, a third option is to have consumers share the costs of bid preparation. Sharing of bid costs is generally allowed under the UK's private finance initiative (upto 50%) and has been used for Euro-Tunnel and the Athens airport. Under any system, consumers eventually pay for bid costs through tariffs, but with cost sharing they benefit from the intensification of competition.
- Transparency. Transparency of the award process – and with it, long-term political sustainability – tends to be enhanced by solicited, rather than unsolicited, projects. Solicitations, however, have to be conducted under clear rules; otherwise problems may arise in evaluating the bids. Firms argue that competitions are a sham and a waste when the rules of the game are not clearly defined. Bidders are unwilling to enter compe-

titions where winning depends on political discretion rather than a professional assessment of the merits of bids against published criteria.

Bidding is weakened, however, if the choice of winners requires a fair amount of discretion. The more unavoidable discretion is, the weaker the case for bidding becomes relative to negotiation, and the more the competition will look like a form of competitive negotiation.

To improve transparency in large projects, bidders are generally required to submit their bids in two envelopes. Envelope I contains only the technical parameters of the proposal, whereas Envelope II contains the sponsor(s)'s tariff proposal. The technical proposal in Envelope I is evaluated on a "passtfail" basis; minor deviations from bid-complying criteria are usually noted and cost-adjusted to comply fully with standards. Envelope II is opened only for those bidders who were given passing marks in the first round. Each of the proposed tariffs is then adjusted to incorporate complying costs identified in Envelope l, prior to determining which bidder has the lowest evaluated tariff. To ensure transparency, the evaluation committee is not permitted to open Envelope II, prior to determining which of the bidders are technically complying and/or what minor cost adjustments are needed to fully comply.

- Innovation. Private sector companies, from time to time, do present ceding authorities with unsolicited project proposals that contain important innovations – a new type of project, or a new solution to a known problem, or new ways of defining performance standards. The problem in evaluating innovative ideas, from the ceding authority's perspective, is "knowing" whether the concept is workable and can be effectively incorporated into a project. From the perspective of the private sector, the problem is determining what institutional protection may be given to the concept that is being proposed. It is unfortunately true that many countries do not have a framework that is capable of managing innovation in an orderly way. If the ceding authority were to use proprietary ideas to formulate a competitive tender, without providing any benefit to the firm proposing the innovation, it would discourage private firms from developing them in the future.

  Several basic options exist for combining incentives for firms to develop ideas with the benefits of competitive bidding. Chile's concession system allows the government to offer a bid premium for good ideas in unsolicited proposals. The proprietary concept is then made the central feature of a competitive tender that is open to everyone that has the technical and financial ability to implement the project. This method has been used in at least one toll road project. A similar option is to hold a design competition before writing the concession tender.

The winner of the design competition is then teamed up with the winner of the subsequent tender to implement the project. It should be noted that formal design competitions are rare in concessions. Concession arrangements tend to be designed by the ceding authority with the help of consultants and inputs from industry.

A promising avenue for combining incentives for innovation with elements of competition is included in the build-operate-transfer (BOT) law of the Philippines. When the ceding authority receives an innovative unsolicited proposal, it announces the broad nature of the proposal, and then gives potential competitors 90 days to come forward with an alternative cheaper proposal.

Exogenous Factors

Each developing country is unique, having its own set of problems and advantages. The best way to judge whether exogenous factors are likely to interfere with a successful Project Financing is to determine whether others are getting their deals done. International commercial banks located in the country as well as multilateral institutions are good sources of information in this respect. If projects are not achieving financial close, or are developing slowly, that is a sure sign that something is amiss.

Although it is difficult to generalize about corporate motivations, mid-size and small developers usually avoid countries where the infrastructure sector has only recently been opened to the private sector and/or deals are not moving very quickly through the system. Unless these companies are cash rich, they tend to be cautious, or at least careful, about the countries that they target. That said, the most powerful motivation for small and large corporate sponsor(s) is the pursuit of opportunities that exhibit the potential for attractive returns. Experientially, it is possible to conclude that a commercially attractive project will override a fair number of negatives related to the environment in which it will operate. To avoid problems in project selection, the disciplined sponsor(s) will target carefully the countries it is willing to operate in prior to addressing specific project opportunities.

In selecting countries, areas requiring due diligence consist of the following:

- Macro-economic management of the country, in particular, the demonstrated ability of its balance of payment to cope with stress.
- Attitude towards private investment generally, and foreign investment in particular, as reflected by policies, regulations and equity of treatment.
- Political system, parties, politics and stability.
- Host government bureaucracy, efficiency and corruption.

- Social, economic and financial conditions in the region and the site where the project is to be located.
- Sector's importance to the country as well as the laws, policies, commercial participants, regulatory bodies and available technology that will define the technical boundaries of its operation.
- Potential joint venture partners.
- Foreign and domestic finance institutions that are potential providers of debt, includingcommercial banks, institutional investors and the stock market, that could be potential stakeholders.

Once the sponsor(s) is convinced that the country fits an acceptable risk profile, it may then focus on identifying project opportunities and/or whether a particular project falls within its technical and financial capability and is finance-able by the international credit markets.

Sponsor's Qualifications

A sponsor that is well regarded in international circles by virtue of having developed several projects of varying size and complexity will not have difficulty in convincing a ceding authority in a given host country, or group of international lenders, that a project is within its capacity. However, a developer that, heretofore has operated exclusively in the US or some other industrialized country, may have problems establishing its credentials abroad. Unless such a sponsor has a number of close relationships with major banks at home that it can work with on its first overseas venture, it may prefer to address the market through joint venture with more experienced firms.

Project's Finance-ability

Determining whether the project is finance-able is a difficult call during the pre-bid stage of project development. The project agreements have not yet been negotiated, the project cost is not pinned down, and the interaction between costs and revenues is not yet fully tested. Nevertheless, a good starting point is to identify the types and size of projects that are getting financed as well as the lenders and their terms. One should also be aware of the failures experienced by others during their project development efforts. At this pre-hid stage, a corporation has to seriously consider the fallback possibility that it may have to finance the project entirely from its own resources.

A project that has an off-take agreement is always more attractive than one that does not. An off-take, by itself, does not ensure success in approaching the international financial markets. Among other criteria, the

structure of the off-take has to be acceptable and the counter-party must be creditworthy. Moreover, each project agreement entered into must contain risk-sharing provisions appropriate to the commercial and economic activity being proposed. Each counter-party, through contractual undertakings entered into with the project vehicle, will buttress the latter's credit in one way or another. To constructively contribute to its soundness, it is necessary for each of the counter-parties to be creditworthy in its own right. Otherwise, the project will be perceived to be as viable as its weakest counter-party.

Finally, the project must generate enough cash flow so as to give lenders a margin of safety with respect to its debt service obligations, although neither the dimensions of cash available for debt service (CADS), nor debt service itself, are determined with any precision until later in the development cycle.

Sometimes, the sponsor(s) becomes involved in a project for one or two reasons that overwhelm all other considerations. For example, it may feel that the long-term considerations for having a presence in one country (such as India or China, given their market size) outweigh any number of disadvantages that become evident at the pre-bid stage in the development process.

Determining Whether to Submit an Unsolicited Proposal

Many developers, but by no means all, prefer to issue unsolicited proposals to a ceding authority rather than participate in a formal tender. Unsolicited proposals are not only less costly to prepare but provide more scope to participate in defining the technical and commercial outlines of the project. For this reason, an unsolicited proposal is said to shift the bargaining advantage from the ceding authority to the private party.

Nevertheless, there exist situations where government may be relatively more receptive to unsolicited proposals from private firms. The following are some examples of this:

- The ceding authority is prepared to compromise on tariff/price because a formal tender would take too long, and the consequences of not getting the facility in place quickly are likely to lead to much greater loss. For example, the Philippines in 1993 experienced a severe national shortage of power generation. The eight-hour brownouts adversely affected gross national product and exports. The situation was overcome by awarding 13 fast-track unsolicited proposals from the private sector to build needed generation.

There are, of course, dangers involved in doing this too quickly or hastily. Pakistan, at about the same time, awarded more than 4,000 MW of capacity over a short period in anticipation of generation shortfalls that never materialized. For this, and other reasons, the country at the time of this writing is involved in the painful process of renegotiating the tariffs with the private generators.

- Costs of preparing a formal bidding package are too high and the ceding authority does not have access to the financial resources to fund this expense. This type of problem occurs frequently within government, particularly in the case of those ministries that are cash poor or operate with government subsidies (water, rail, mass transport, etc.). Technical assistance to prepare a bid package is sometimes, but not always, provided by one or more donors. Nevertheless, if the ceding authority is able to find "bridge" money, it is possible to structure the bidding in such a way that costs of preparation are subsequently recovered from the bidders at the time of tendering. Lack of familiarity in conducting specialized tenders is widespread within government and the temptation is therefore great to entertain unsolicited proposals.
- The project, although highly desirable, is not viable and innovation of a proprietary nature will be needed to resolve its technical and commercial justification. Manila's South Super Highway and Sydney's Harbour Tunnel are both examples of unsolicited proposals that depended on innovative design or unique technology to ensure commercial viability. Neither project might have been built by the private sector if the ceding authority had followed conventional bidding rules.
- The project has great development impact but falls between the purview of two ceding authorities, neither of which is likely to take the sole initiative to forward its implementation on any basis. An example of this is a project that has two commercial objectives, e.g. (a) to generate hydropower from a dam or large reservoir; and (b) to provide irrigation water to an underserved, but potentially important, agricultural area. The first project would normally be viable; the second might not be sustainable without the first. Normally, water and power would fall under different ministries. In some countries, the project would not get done if an unsolicited proposal did not jar both ministries into action.

Selecting the "Right" Advocacy

Project development is sometimes done more efficiently when sponsor(s) uses one or more forms of local advocacy to assist in the process. Factors to consider are as follows:

- For a solicited or unsolicited proposal, what relative advantages are there in using a local partner, agent or advocate?
- If the sponsor(s) is seriously considering the pursuit of the project with local interests on a joint venture basis, the following questions must be considered:

  Will the host country look more favourably on awarding the project or expediting the process of approvals and consents if the project is pursued jointly with local interests?

  If so, is the local firm experienced in project development? What development costs will it be responsible for? Does it have the staying power to contribute funds during an uncertain development period? What role will it play during the development period? How does it rank in size relative to other potential competitors that would pursue the same project? Does the local firm have significant detractors politically? Does it have detractors within the sector?

Conducting a Technical Feasibility Study

Technical feasibility studies are done using inhouse staff of the sponsor(s), hiring technical consultants and/or conducting informal discussions with a handful of short-listed turnkey engineering, procurement and construction (EPC)contractors. The objective of a technical feasibility study is to consider the appropriateness of the facility's design relative to the needs to be served; capacity and phasing; cost under current or projected market conditions at one or more sites; construction schedule; and price, availability and transportation requirements of major inputs. Additional factors include the potential for unanticipated delays as well as the facility's operating characteristics, including useful life, reliability, efficiency, required maintenance, and vulnerability of its technology to innovation. Such a feasibility focuses on "hard" construction costs. It does not include broad financing costs, or for that matter, development (transaction)costs.

A preliminary technical feasibility study has a margin of error of plus or minus 30% while a very complex project could have a larger margin of error. If the developer thinks his project costs will fall within the 30% margin, it will be more willing to propose a more aggressive (lower)tariff in a solicited or unsolicited context. Conversely, if uncertainties are great in respect of construction-cost economies, the sponsor's proposed tariff will be higher, fully reflective of the uncertainties.

Judgements related to the project's technical, financing and development costs continue to he very critical throughout the project development period. At any time during the development process, sponsor(s) may aban-

don a project development if costs begin to mount and are considered unsustainable.

Length and Cost of Development Process

Although the issue is project specific, time elapsed for a major project from the award to financial closing can easily amount to one year and occasionally several years as shown in Table 3.2.

Although Table 3.2 focuses entirely on the developing world, there have been instances in the US where projects have taken several years to develop. As a rule, however, project development in undeveloped markets is inherently much more time-consuming due to the absence of experience and policies.

Table 3.2 Fast- and Slaw-Moving Projects

Project	Sector	Country	Year closed	Debt closure period (months)	Project size (US$ millions)
Over 30 Months					
Pangue	Power	Chile	1994	43	465
Vallarta	Water	Mexico	1995	31	33
Karachi	Port	Pakistan	1995	36	88
Hidrozarcas	Power	Costa Rica	1994	33	17
Lanka Cell	Telecoms	Sri Lanka	1994	31	14
N. Central	Rail	Argentina	1993	30	61
Under 10 Months					
Smith-Enron	Power	Dom. Rep.	1995	4	304
P. Quetzal	Power	Guatemala	1993	5	93
Ciprei	Power	Cote d'Ivoire	1995	6	70
Telemovil	Telecoms	El Salvador	1996	7	30
N. Mindinao	Power	Philippines	1993	8	103
AES Lal Pir	Power	Pakistan	1995	8	343
Baria Serece	Port	Vietnam	1995	8	10
Elcosas	Power	Honduras	1995	9	70

Source: International Finance Corporation, "Lessons of Experience # 4: Financing Private Infrastructure". 1995–96, p. 39.

Estimates in the table do not include the time spent ***during*** the pre-bid stage while the award is being pursued. They also do not include the time spent ***after*** financial closing while construction is taking place, an effort that, depending on the size, complexity and configuration of the project, can last one to four years. Time required to fully develop a project has led a number of observers to comment on the very high level of transaction costs associated with it.

Transaction costs, in the context of developing an infrastructure project, include the following:

- Sponsor's staff costs and travel.
- Facility fees due to bankers as well as underwriting and placement fees due to lead banks, discussed in more detail in Chapter 7.
- Advisory fees due to investment bankers.
- Upfront agency fees due to the various trustees that will manage different aspects of the transaction.
- Fees due to sponsor's external advisors, e.g. lawyers, engineers and environmental specialists.
- Fees payable to the third parties that assist in the conduct of due diligence on behalf of the lenders, e.g. technical, legal, model audit, insurance and environmental.
- Reimbursement of out-of-pocket and other expenses incurred by lenders in negotiating the project's term sheet and other documentation.

A special study conducted by the World Bank on transaction costs[2] made the following relevant observations:

- Introducing private participation into infrastructure has appeared to increase the transaction costs in developing countries, although this increase may simply reflect the true costs of project development which otherwise would remain hidden in public sector projects.
- There appears to be little relationship between project size and transaction costs, although as a rule of thumb, costs are usually about **3–5%** of total project costs in well-developed policy environments.
- At the lower end of that scale, global annual transaction costs would amount to a minimum of US$1 billion per year based on estimated annual closings of US$35 billion.

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[2]See Klein, Michael, So, Jaeand Shin, Ben, "Transaction Costs in Private Infrastructure Projects – Are They Too High?", The World Bank-Private Sector (www.worldbank.org), Note 95, October 1996.

CONTRACT NEGOTIATION STAGE

Box 3.2 outlines the main activities in the second phase of project development – contract negotiation – beginning after project award and ending with the initialling of all project agreements and the execution of mandate letters with lenders to pursue a defined financing plan.

Box 3.2 Contract Negotiation Stage

Government/Ceding Authority

For solicited and unsolicited projects:

- Negotiate project agreements where government is a counter-party.

Sponsor(s)

- Negotiate project agreements, government and non-government
- Develop market study. if no off-take agreement.
- Prepare environmental/social impact assessment and file for disclosure.

Develop preliminary information memorandum (PIM)/financial model.

Source: Adapted from Klein, Michael, So, Jae and Shin, Ben, "Transaction Costs in Private Infrastructure Projects – Are They Too High?", The World Bank-Private Sector (www.worldbank.org), Note 95. October 1996.

Project agreements normally include a concession and/or implementation agreement (IA), an off-take agreement, site purchase or lease agreement, EPC contract, operations and maintenance (O&M) agreement, and possibly an input supply contract. In an emerging market country, some of these documents are entered into with the central government or its agencies; documents such as the EPC, O&M and input supply are generally executed with appropriate private service providers.

In the contract negotiation stage, the sponsor's primary challenges are as follows:

- For contracts with no off-take agreement, completing a market study that persuasively demonstrates that the facility is needed, is likely to maintain its long-term competitiveness relative to other facilities and that its revenue generation (based on estimated usage and assumed range of tariff levels) is likely to be adequate at the peak and trough of the business cycle, relative to its obligations, including debt service obligations.
- Negotiation of all of the project agreements, covering all of the key risk-sharing provisions appropriate to the project's technical, economic and financial attributes.

- Finalizing and filing for public disclosure the environmental and social resettlement report.
- Completing an economic and financial model of the project that reflects the provisions made and reached at in the project agreements, which also contains reasonable accurate assumptions with regard to cost financing.

We describe each of these four major activities below.

Market Study for Projects with No Off-Take Agreement

If the project is completed on schedule and within budget, its economic and financial viability will depend primarily on the marketability of the project's output (at a given price). In the absence of an off-take agreement, and to evaluate marketability of the product or service that is to he processed by the facility, the sponsor(s) arranges for a study of projected market conditions over the expected life of the project. The study must confirm that, under a reasonable set of economic assumptions, demand will be sufficient to absorb the planned output of the project at a price sufficient to recover full cost of production, enable the project to service debt, and provide an acceptable rate of return to equity investors. The study is prepared by independent consultants and generally includes (a) a review of competing products and their relative cost of production; (b) an analysis of the expected life cycle for project output; and (c) an assessment of the potential impact of technological obsolescence. If the project is to operate within a regulated industry, the impact of potential regulatory decisions on production levels and prices – and ultimately the profitability of the project – must be considered. Market risk is difficult to hedge against specifically, unless there is a single buyer or small group of buyers for the output. Signing a purchase or sales agreement with the price and quantity clearly specified with a seller or buyer who has a good credit standing is an excellent way of hedging market risk to ensure the project will generate revenues. Projects having a single product whose price may vary widely, as in the case of the mining sector, are particularly vulnerable to changes in demand, and need to hedge against product price risk. Equally important, in projects whose success or failure rests on the price of one raw material input, there is a need to hedge the price of that material under the terms of an input supply agreement.

Negotiating the Project Agreements

Banks will want to study all of the project agreements before they consider financing a project. Ideally the risk-sharing provisions of the documents

should be structured in such a way as to remove risk from the project vehicle and allocate it to someone else in a better position to absorb it.

These risks are classified in a number of ways but, broadly, are boiled down to two main considerations:

- Operating margin (operating revenues net of operating costs) is squeezed through falling revenues, a failure to get paid or unanticipated cost increases, e.g.:
  - Revenues in hard currency terms (price and demand for product or service) are adversely affected by a downturn in the business cycle.
  - Costs in hard currency terms (construction and/or operating costs) increase because of inflation, interest rate variations, changing foreign exchange parity, delays in commissioning, cost overruns, lack of qualified manpower, shortage of raw materials or fuels.
- Limited or no foreign exchange available to convert and transfer local currency proceeds, and investment along with returns thereof is adversely affected.

Environmental/Social Resettlement Report

The environmental-permitting process must be thoroughly addressed in a manner similar to the one described in Appendix 3.3. To complete this report acceptably, thorough communication with the proper government authorities and knowledge of regulations is critical. If financing is being sought from entities with their own independent environmental standards, then these standards, as well as those of the host country, will have to be incorporated into a final plant design. Often the environmental and social standards of international finance institutions, such as the World Bank, exceed those of the host country, and the use of the best technology available is advisable. Keeping requirements of finance in mind, the sponsor(s) must work to complete its report and environmental/social resettlement mitigation plan closely with established engineers and companies that investors and banks will accept.

The Financial Model

By the end of the contract negotiation stage, the sponsor(s) has developed fairly sophisticated and accurate models that portray the economic and financial feasibility of a project under a variety of scenarios and assumptions.

Economic feasibility of a project is best viewed from the perspective of the host government and/or the potential buyers of services from the facility. The host government will want to be satisfied that the project repre-

sents "value for money" in relation to government expenditure as a whole, and that its infrastructure objectives cannot be met in a more cost-effective way. This may involve making comparisons with the economics of financing the project using public funds (see Appendix **3.2,** which discusses the avoided cost methodology used by a number of governments to make this determination). Although governments frequently are able to borrow more cheaply than the private sector, qualitative factors that may influence the decision in favour of a private implementation include the following:

- A reduced level of risk for the government.
- Less stress, as well as more flexibility, in the way the national budgetary envelope is distributed.
- Increased efficiency and expertise that may be brought to the project.
- Positive impact of increased private investment in the host country.

From another perspective, the sponsor(s) and especially lenders will focus on economic feasibility of the project by carefully examining the tariffs, or tolls of the infrastructure facility. The key issue is whether the tariffs will be viewed as reasonable over the longer term by the off-taker, or the consumers serviced by the facility, given the foreseeable effects of future deregulation, sector reorganization, competition, new technology and other similar factors.

Financial **feasibility,** in contrast, involves a careful examination of projected operating results. From the lenders' perspective, two aspects are particularly important: they will want to satisfy themselves that (a) projected revenues, operating expenses, debt service and distributions are consistent with project agreements; and (b) realistic estimates of future project revenues are sufficient to cover operating expenses and repay project debt with an acceptable margin of safety. The developers, in turn, will focus on the level of projected distributions, their pace and timing, and the acceptability of the project's resulting internal rate of return (IRR). From both perspectives, a good financial feasibility will also explore, through sensitivity analyses, any weakness that may result from:

- Construction delays.
- Cost overruns.
- Adverse regulation.
- Inefficiency of the facility relative to existing and projected competition.
- Interest rate fluctuations.
- Unavailability of exploitable (extractive) reserves or major project inputs.
- Major unanticipated inflation or currency depreciation.

The money-raising stage begins once all project agreements are initialled and ends at the time the facility is built and commissioned. This is a

particularly important stage for the project sponsor(s). Until financial closing is reached during this stage, the sponsor(s) is responsible, and takes risk for all development costs. Usually, the sponsor(s) does not begin construction prior to securing financing.

MONEY-RAISING STAGE

Box 3.3 outlines the main project development activities during the money-raising stage of project development. During this period, the sponsor(s):

- Negotiates and signs the term sheet.
- Drafts, reviews and agrees to the debt financing and equity subscription agreements with lenders and consortium members.
- Achieves financial closing with all project and finance counter-parties.
- Puts in place the capability to monitor progress being made during project construction.
- Manages required loan and equity disbursements.
- Supervises contract compliance by EPC contractor and other third parties.

In addition, lenders and sponsor(s) develop a Lenders Base Case financial model, as discussed in Chapter 7 – an activity that provides the litmus test of financial viability.

In the money-raising stage, the sponsor's main goal is to achieve financial closing on acceptable terms and commence construction of the facility. The sponsor(s) is generally aware that certain broad constraints and conventions will influence the development of a financing plan that meets all of its objectives:

- The sponsor(s) is not able to approach the financial markets until the end of the contract negotiation stage of project development, when all project agreements are fully negotiated and initialled, and the project offering memorandum is completed and ready for distribution. Generally, construction cannot commence until the sponsor(s) mobilizes fully all the financing required to commission the facility. During the contract negotiation and money-raising stages of project development, however, the sponsor(s) faces the risks that the availability of finance in the markets, and/or the terms required to access loans, can shift dramatically as shown in Table 3.3.

  Table 3.3 demonstrates the effects of the Asian financial crisis on projects in five Asian countries. Where commercial banks had avidly pursued projects, pre-Asian financial crisis, with generous offerings regarding tenor, spreads and no requirements in respect of political-risk

Box 3.3 Money-Raising Stage

Finance and security agreement documentati	Construction
Government/ceding authority	**Government/ceding authority**
• Reviews and approves broad financing terms.	• Manages and adjusts regulatory structure to create stable market conditions. • Participates in commissioning tests of facility.
Sponsor(s)	**Sponsor(s)**
• Prepares financial modelling. • Participates with lenders in organizing due diligence on project's technical, legal, insurance, modelling issues, etc. Completes environmental and social resettlement report • Completes organization of project vehicle. • Takes over site. • Negotiates finance documents. • Achieves financial and security closing.	• Supervises construction and executes O&M work • Monitors contract compliance by other parties. • Arrives at project's commissioning date.

Source: Adapted from Klein, Michael. So, Jae and Shin, Ben, "Transaction Costs in Private Infrastructure Projects - Are They Too High?", The World Bank-Private Sector (www.worldbank.org), Note 95, October 1996.

guarantees, bankers' mindsets changed abruptly in the aftermath. It is also true, of course, that the financial environment could improve, positively affecting the financial viability of a given project. For example, an improved availability of finance could lead to lower financing costs and increased benefits of an otherwise unattractive project.

- *Ceteris paribus*, longer debt tenors normally will result in a higher level of profitability for the sponsor(s). Door-to-door tenor of the project debt, however, cannot exceed the expected useful economic life of the project as of the date Project Financing is arranged. The useful economic life of the project, in turn, will be defined by the lenders as the (a) start of the concession or licensing period to its conclusion; or (h)economic life of the plant and equipment components that make up the facility, whichever ends first.
- The project's expected pattern of cash generation constrains the amounts and types of debt and equity securities used in the financing plan. As a general rule, a project's financing plan should seek to match the matu-

Table 3.3 Appetite for Tenor and Partial Risk in Asia, Pre- and Post-Asian Crisis

Country	Financial crisis	Tenor	Political-risk cover	Interest rates (Spread above LIBOR)
Indonesia	Pre	15	No	1.30
Indonesia	Post	10	Yes	NA
Thailand	Pre	16	No	1.00
Thailand	Post	10	Yes	NA
Philippines	Pre	10	Yes	1.375
Philippines	Post	7	Yes	3.50
China	Pre	13	Yes	1.50
China	Post	13	Yes	3.00
India	Pre	8–13	No	3.00–3.50
India	Post	10–13	Yes	1.00

Source: International Finance Corporation. "Lessons of Experience # 7: Project Finance in Developing Countries", 1999, p. 34.

rity of the various debt funds raised with the project's ability to generate cash to repay those funds. Matching will tend to minimize the aggregate cost of financing as well. In addition, the length of the construction period will affect decisions related to the types of lenders approached. Various classes of funds differ with respect to lenders' willingness to enter into forward commitments: insurance companies, for example, can handle longer forward commitments than commercial banks.

- If export credit agency (ECA)financing is available in certain countries at attractive rates, purchasing equipment for the project from suppliers located in one of these countries can reduce the project's cost of funds. Often, however, a trade-off is made in respect of the quality of the equipment that can be procured. For example, one industrialized country with lower quality equipment may have an ECA with an "open window" relative to financing opportunities in the project's host country, while another country with longer life and more reliable equipment may have a disinterested ECA.

  At another level of analysis, certain types of equipment may be manufactured and procured locally in the host country. Or, the equipment may be manufactured and procured from a country whose ECA is not active in the host country. In such cases, alternate finance will have to be found for these items, depending on the situation.

- Sources of finance vary widely in their requirements and the level of global activity. All sources of private debt in the capital and credit markets are at least theoretically available to projects located in industrialized countries as well as developing countries that are rated "investment grade". In contrast, only multilateral, bilateral and ECA debt are available generally to projects located in middle- and low-income developing countries that are not investment-grade-rated. Commercial banks, the most ubiquitous source of financing for Project Finance, will be most active in those developing countries that (a) are well managed and perceived to be relatively invulnerable to balance of payment difficulties; or (b) benefit from guarantees or insurance provided by multilateral and bilateral institutions.
- Trade-offs between corporate hurdle rate requirements, transaction fees and interest rates will materialize among financing alternatives. Some financing plans will generate longer term, and possibly, more favourable interest rates for the projects at the expense of higher transaction fees. In other cases, a different combination of results may occur with a different effect on profitability.
- Bank loans normally carry floating or variable interest rates. When used in long-term financing, the sponsor(s) is required usually to hedge its exposure through the acquisition of interest rate swaps or interest rate caps, to limit the impact of interest rates on project costs. A description of these instruments, including their valuation, is included in Chapter 11.

Against these constraints imposed by the markets, the sponsor(s) has the following financial objectives:

- Secure the lowest financing costs.
- Achieve the highest risk-reward trade-off possible.
- Minimize its liabilities to the project.
- Avoid consolidation of the assets and liabilities of the project on the corporate balance sheet.
- Maximize value of tax benefits of ownership.
- Achieve beneficial regulatory treatment.
- Negotiate for the highest level of control possible over the project in light of lenders' constraints.

Securing Lowest Financing Costs

In general, the lowest cost of capital will be achieved in a Project Financing when (a) debt is maximized as a percentage of total capitalization; and

(b)the amortization schedule for the project debt is matched, as closely as the financial markets will permit, to the cash flows of the project.

The appropriate project debt-equity ratio depends very much on the strength of the off-take agreement. Of particular importance is whether the purchaser(s) of the project's output or services is willing to lend direct or indirect credit support by entering into tight long-term purchase commitments. The stronger these commitments, the greater the degree of credit support they provide, and the higher the potential debt-equity ratio. A strong off-take agreement will permit the sponsor(s) to achieve a debt-equity ratio of as high as 3, occasionally higher. In contrast, absence of an off-take, depending on project attributes, could result in a ratio of perhaps 1.5, or even lower.

Depending on the maximum feasible debt-equity ratio and the sponsor's ability to contribute equity to the project, it may he necessary to arrange for outside equity or quasi-equity investors. To complement sponsor's equity, it is generally beneficial to recruit either third-party equity or subordinated debt into a financing plan as the cost is often below the sponsor's own threshold return requirement. Hence, by layering into the financial plan third-party equity, or quasi-equity, the weighted average cost of funds is reduced.

Once construction begins, a number of factors affect the timing of debt and equity drawdowns. Draws from loan commitments should match the schedule of construction expenditures. Matching minimizes warehousing of excess funds and/or short-term bridge financing.

Lenders normally require that the sponsor(s), or outside equity investors, invest a certain amount of equity in the project prior to the initial drawdown of any debt funds. Remaining equity is contributed ***pari*** passu with the full lenders' commitment. These requirements assure lenders that the project's equity investors have a substantial financial commitment to the project from its earliest stages.

Achieving Highest Risk-Reward Trade-Off Possible

As mentioned earlier, lower financing costs do not always lead to higher profits. There is often a trade-off between the two. The following two basic arrangements used to put Project Finance in place illustrate some of the trade-offs involved:

- Long-term lenders may finance the installation, supply, erection and commissioning of the facility as well as an agreed number of years during operation. In this case, there is only one set of lenders and financing costs.

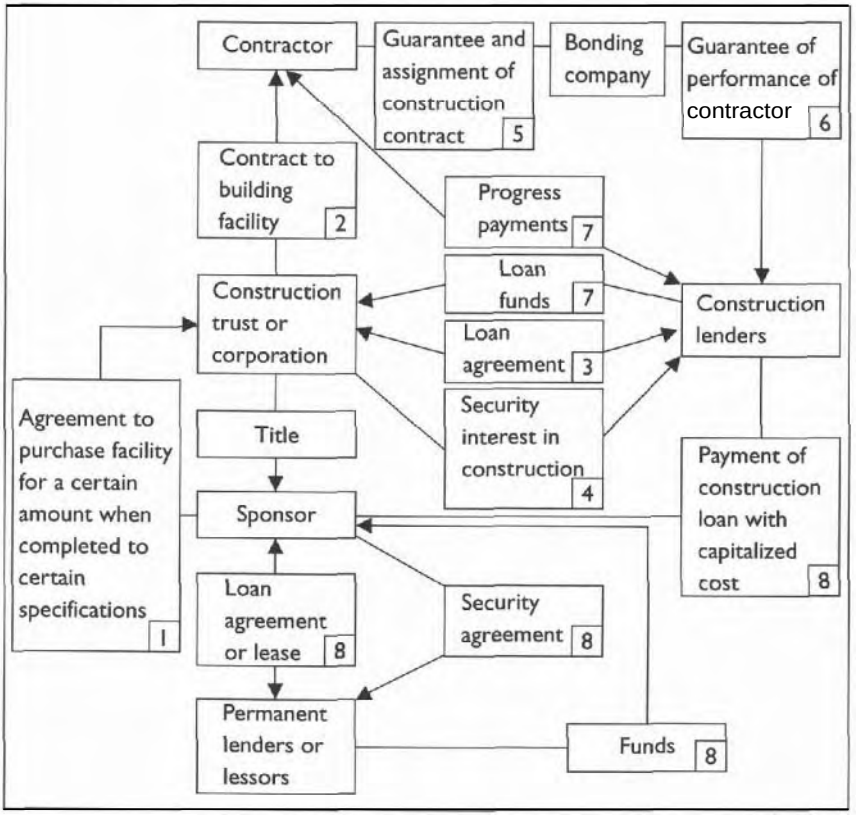
- Short-term loans are provided by one set of lenders to finance construction of the facility up through its commissioning, and are then "taken out" by long-term lenders, as shown in Figure 3.1. The construction lenders could be the sponsor(s) or banks; the long-term finance could be provided through banks or project bonds. This introduces three possible outcomes for the trade-off between lower financing costs and profitability:

  When the *sponsor(s)* provides the short-term financing, if more than one sponsor is involved, each borrows its share of the required construction financing directly from commercial banks, and then on-lends such funds to the project. Following commissioning, the project arranges long-term financing partly on the basis of contractual arrangements that exist for the sale of project output. The project will then repay its borrowings from the sponsor(s) out of the proceeds of the long-term financing. This approach makes the sponsor(s) directly responsible for all the completion risk (to the extent that it is not transferred successfully to the EPC contractor). Project completion risk, together with its transfer to third parties, is discussed in Chapters 5–6 and 8–9.

  Upon refinancing their position and depending upon the financial markets, the sponsor(s) may be able to negotiate somewhat longer door-to-door tenors or even higher leverage during the operating period. Its willingness to absorb 100% of the financing risks during construction improves its negotiating position with regard to the second set of lenders and, ultimately, may result in extended tenors, perhaps lower interest rates and enhanced project returns during the operating period. This result may be attained, even with a higher level of transaction fees, arising from two sets of lenders having to be compensated for their participation in the project.

  When the commercial banks provide the short-term *financing*, a special purpose finance corporation (SPFC), organized by the sponsor(s), issues short-term promissory notes with the objective of on-lending the proceeds to the project vehicle. In this case, the project vehicle borrows money from the SPFC under terms substantially identical to those under which the latter has borrowed funds. Security for the lending institution will consist of the same completion undertaking and other contractual arrangements that long-term lenders will rely on for security in connection with the permanent financing. The sponsor(s) will pick up the development costs and negotiate (with both sets of commercial bank lenders) to convert a reasonable portion of these inro equity.

Figure 3.1 Construction Financing[3]



[3] Steps:

1. The sponsor(s) agrees with the construction intermediary trust to purchase a facility built to certain specifications. The purchase price and time frame for delivery are established.
2. The contractor agrees to build the facility at a price and on terms consistent with the contract between the sponsor(s) and the construction trust or corporation.
3. A loan agreement is entered into between the construction intermediary trust and the construction lenders.
4. The construction trust assigns a security interest in its assets to the construction lenders.
5. The contractor enters into an agreement with a bonding company to provide a bond sufficient to guarantee performance and provides rhe bonding company with a guarantee and an assignment of its rights under the construction contract as security.
6. The bonding company provides a performance bond. (A performance bond may not be available at a reasonable price, in which case the lender must look to the financial resources and reputation of the contractor.)
7. Construction loan funds are advanced as needed and progress payments are made to the contractor.
8. The facility is completed to the specifications called for in the contract; the permanent financing is arranged by the sponsor(s); the construction loan is repaid; title passes to the sponsor(s); and a security interest passes to the permanent lenders or lessors.

Its ability to increase financial leverage or tenor, through the take-out financing, depends very much on the host country involved, robustness of the project, the length of the construction period and the state of the international financial markets at the time the two loans are negotiated.

In this case, a higher level of financing costs will almost certainly be involved given the presence of two sets of lenders, but it is not clear that an overall longer repayment schedule will be secured. When the intent of the *sponsor(s)* is to arrange take-out from the bond market, the project vehicle borrows money directly from banks or SPFC, as described above. A public offering to take out the construction lenders will occur after commissioning; however, the take-out must be backstopped by firm commitments from credible financial institutions, otherwise the construction lender will not participate. Such commitments are usually in the form of standby loan facilities from commercial banks. The commitments obligate the banks to provide funds if the public offerings are not consummated as planned. If the take-out is subsequently handled through the bond offering, the sponsor(s) is able usually to negotiate considerable longer tenors (if the project is located in an investment-grade-rated country) and even higher leverage than any of the other alternatives discussed above. The advantages to the sponsor(s), gained through this structure in extension of loan tenors, have to be weighed against three sets of transaction costs: construction banks, bond issuance and the standby commercial banks.

Minimizing Exposure to the Project

The sponsor(s) will structure the project vehicle in such a way as to insulate itself from the risks and liabilities inherent in the project. It will accomplish this if it is able to organize the project vehicle as a limited liability company.

If, for other reasons such as tax efficiency (or transparency), the project vehicle is organized as an unincorporated joint venture, a trust or limited partnership, then the limited liability attribute is achieved by having each sponsor's ownership interests flow from a limited liability company, which will be incorporated in the host country or, more commonly, a tax haven country.

The sponsor(s) also minimizes its exposure to a project by negotiating with the lenders to provide the project with the smallest level of support possible in the form of contingent equity or limited guarantees of other types.

Avoiding Financial Statement Consolidation

A number of US companies have as their objective the creation of project companies whose assets and related liabilities are not included in the consolidated financial statements of the parents. There may be several reasons for this. The most prominent one is a restrictive covenant placed on the parent's financial statements by its lenders limiting the assets and liabilities that can be acquired during the period the loans are outstanding.

Consolidation of a foreign or domestic entity is based on the concept of control by the parent over the subsidiary. Control of over 20% of the voting shares of an entity would create a prima *facie* need to consolidate assets and liabilities of the subsidiary onto the balance sheet of the parent.[4] The definition of control involves two essential and interrelated characteristics: (a) a parent's unilateral decision-making powers; and (b) a parent's ability to use that power to increase the benefits and limit the losses from the operations of that subsidiary. These characteristics are essentially helpful in distinguishing a parent-subsidiary relationship from partnerships, or joint ventures, where decision-making power is shared by the investors.

In general, the factors that may lead to the conclusion that control exists between parent and subsidiary are when the sponsor(s):

- Has a majority voting interest in the election of a corporation's governing body or a right to appoint a majority of the members of its governing body.
- Has a large minority voting interest in the election of a corporation's governing body and no other party or organized group of parties has a significant voting interest.
- Has a unilateral ability to (a) obtain a majority voting interest in the election of a corporation's government body; or (b) obtain a right to appoint a majority of the corporation's governing body through the present ownership of convertible securities or other rights.
- Is the only general partner in a limited partnership and no other partner or organized group of partners has the current ability to dissolve the limited partnership or otherwise remove the general partner.

[4] The **Financial Accounting Standards Board (FASB) of the US is currently conducting a major project to evaluate consolidations and related matters. The most recent update of the FASB on this issue defines control of an *entity* as the ability to direct the policies and management that guides its operations so as to increase the benefits and limit the losses from these operations.**

In any one of the above situations, significant evidence to the contrary needs to exist in order to rebut the presumption of control and, therefore, the requirement to consolidate.

Maximizing Tax Efficiency

Tax efficiency, or tax transparency, is a phrase often heard in the context of a Project Financing. When used in the context of a project vehicle, the phrase means that a shareholder, owner or participant in the project vehicle is taxed in relation to the profits and losses arising from the project, as if the project vehicle did not exist.

The issue takes on special importance during the construction phase of a project when the sponsor(s) may wish to use its share of the losses building up a project – not yet generating revenues – to reduce its taxable profits in other areas of its business.

Tax transparency is not the only issue when considering the type of vehicle to use as a project vehicle, but it is a preponderant one. Other issues include withholding tax on distributions, royalties and interest payments as well as capital gain, or similar tax on a disposal of an interest in the project.

Still another issue involves the flow of dividends through a tax haven country where they may not be exposed to corporate tax. The specific issue is whether a US tax deferral can be achieved on that income pending its return to the US. Generally, it is not possible to secure deferrals on the payment of such tax unless the amounts involved are to be reinvested in the business. The special circumstances under which such tax-paying deferrals can be achieved are a situational matter and require consultation with an appropriate advisor.

Achieving Beneficial Regulatory Treatment

In order to determine whether a project will receive beneficial regulatory treatment, sponsor(s) and lenders normally direct their due diligence activity into the following areas:

- What are the specific laws and regulations that are applicable to the building and operation of the project? If substantially owned by foreign interests, are there other special laws or regulations that apply to the project by virtue of this ownership?
- Who will regulate the project? If the regulator is not yet organized, what is likely to be the focus of such regulation in respect of tariffs? Service and safety standards? Competition?

- Is the tariff to be determined by an off-take agreement? Or, must the tariff be agreed to by the regulator? What specific guidelines apply, or are likely to apply, to tariff-setting?
- If the tariff is agreed to by contract, is it reasonable by the standards of other projects located in the region? Is the project's risk sharing efficient, fair and equitable?
- What government approvals, permits, licences, concessions, filings and other such actions are required for the project to be built and operated? Are there similar requirements for the project participants? In what way does the government assist in facilitating the project's access to such consents?
- What is the privatization programme of the host country? If not yet applied to the industry in which the project operates, how could future privatization of, say, the off-taker, affect the project or the project contracts?
- Are the terms of environmental and social resettlement guidelines to which the project must adhere clear and reasonable? Are the obligations of the project vehicle defined by law, or public disclosure procedure?

Negotiating for Highest Degree of Management Control

Sponsor(s) will want to ensure maximum control over the project subject to constraints imposed by the lenders. Lenders and sponsor(s) are likely to have difficult negotiations relating to the sharing of control over the project in at least four major areas, all of which are discussed in Chapters 8–9:

- By way of loan covenants and/or the accounts agreement, lenders will control the level of each annual operating budget, amount of cash held at banks and ability to move cash around flexibly.
- Under the reserved discretion(s), ability to settle disputes or declare events of default under the project agreements without consulting with lenders, seeking their approval or even deferring to their lead in taking action.
- By way of loan covenants, ability to pay dividends and make other restricted payments to sponsor(s) and other shareholders.
- Under the equity support agreement (ESA),timing of sell-down of their shareholding to a strategic investor, or the general public.

Each of these items will be separately discussed in considerable detail in subsequent chapters.

Review Questions

1. Discuss the three phases of Project Development. What is the main activity that occurs in each phase?
2. Explain the special risks encountered by the project developer during the pre-bid stage of project development. Would your answer be different when considering the pre-award versus the post-award periods?
3. List the general objectives of project sponsor(s) during the contract negotiation stage of project development. At what point in this stage would you say the project business plan, or offering memorandum, is prepared? Why?
4. When in the project development stage is the sponsor(s) able to roughly calculate a debt service cover ratio?
5. At what point does the money-raising phase of project development end? What is the significance of this event?
6. Describe the broad objectives that the project sponsor(s) is trying to capture for the project vehicle at the time they negotiate the project agreements and the term sheet.
7. (a) The table on page 135 summarizes the bidding strategy followed by three bidders competing to win the award for setting up a 10 MW power plant, based on their yearly tariff proposals. Note that the tariff structure of Bidder 1 is derived the same way as that used in Appendix 3.1. Which one has the lowest levelized tariff (LT)?

   (b) Now, suppose Bidder 2 submitted an alternative tariff proposal on the basis of a 13-year power purchase agreement (PPA),rather than 15. To comply with the RFP, Bidder 2 submitted the complying 15-year proposal but also a non-complying 10-year proposal for the consideration of the Evaluation Committee. The alternative tariff proposal simply eliminated proposed tariffs for years 11–15. In relation to the three complying bids, determine the ranking of Bidder 2's non-complying tariff structure.

   (c) What is the optimal discount rate that should be used by the Evaluation Committee in order to properly rank the LTs? What happens to the ranking of the four bids (inclusive of Bidder 2's 13-year proposal) if a discount rate of 9% is used in the first run, while a discount rate of 13% is used in the second? Why?

Yearly Tariff Structure **Proposed** by Three Bidders

	Per unit tariff (US cents/kWh)		
Year	Bidder 1	Bidder 2	Bidder 3
1	3.1	5.6	3.6
3	3.1	5.4	3.6
3	3.8	5.3	3.6
4	3.8	5.3	3.6
5	3.7	5.0	3.6
6	3.6	4.9	4.6
7	3.5	4.8	4.5
8	3.4	4.6	4.4
9	3.4	4.5	4.3
10	3.0	4.4	4.1
11	3.3	4.3	4.0
12	3.1	4.1	3.9
13	3.3	3.9	3.7
14	3.3	3.6	3.6
15	3.3	3.6	3.5
	Present value (PV) of the above stream (discounted at 13%)		
	Bidder 1	Bidder 2	Bidder 3
	31.35	31.40	34.99
	Annuity of the above PV (spreading over 15 years)		
	Bidder 1	Bidder 2	Bidder 3
	3.13	4.16	3.67

APPENDIX 3.1

POWER PLANT TARIFF

Appendix 3.1 discusses the different components of a power plant tariff and includes calculations on how the price of each component within the overall capacity tariff is arrived at.

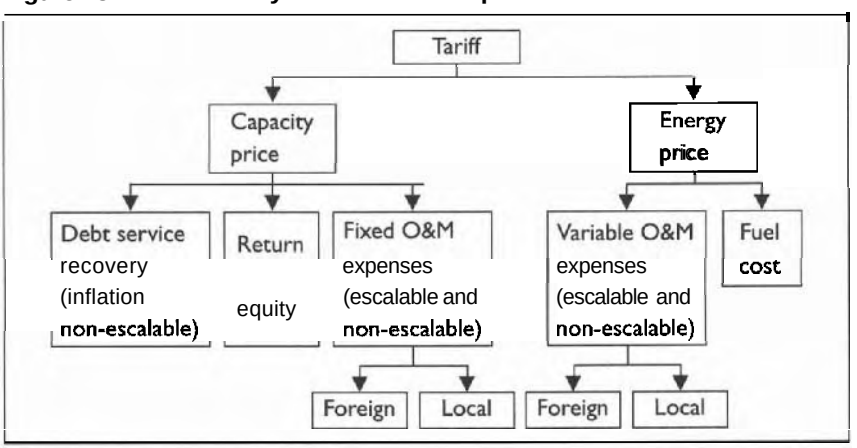
The PPA tariff structure is very similar to that of any other off-take agreement. Infrastructure projects with off-take agreements include IPP power generation, mining and processing of ores, fixed telephone line extension, gas or oil transport using pipelines, water treatment and bulk supply. The PPA tariff has been selected for illustration here because it is the most common of all the off-take agreements.

Off-take tariffs are different in structure from those applying to infrastructure facilities that have market risk. Infrastructure projects with market risk (they do not generally have off-takes) include pure MPPs, toll roads, mass transit rail, heavy rail and airport terminals. In a facility with an off-take agreement, the tariff structure is generally declining over the years tailored to coincide with declining debt service. A tariff for a facility that has market risk, on the other hand, will be adjusted periodically but ***generally in an upward direction*** to reflect inflation, foreign exchange parity or some other index. Hence projects with off-take agreements have constrained upside whereas projects with market risk do not.

Tariff Components

Figure **A3.1.1** outlines the tariff components of an independent power producer (IPP):

Figure A3.1.1 Tariff Payment and its Components



Under a standard PPA, an off-taker pays an IPP both capacity and energy price. Capacity price is the component of the tariff paid by a power purchaser to the IPP in return for maintaining the generating capacity to produce and deliver electricity. Even if the IPP does not generate any electricity during a particular period, the power purchaser must pay the capacity price to the IPP in return for making it available to the buyer. Capacity price structure enables an IPP to service its debt payments, operate and maintain the plant, and pay a return to the entrepreneurs.

Capacity price comprises the following components:

- Debt service recovery.
- Return on equity (ROE).
- Fixed O&M expenses.

Energy price is tied to electricity produced during a particular period. The IPP is paid energy price only if it generates electricity. Under certain circumstances, energy price is essentially a pass-through, equal to cost of electricity generated.

Energy price comprises the following components:

- Variable O&M expenses.
- Fuel cost.

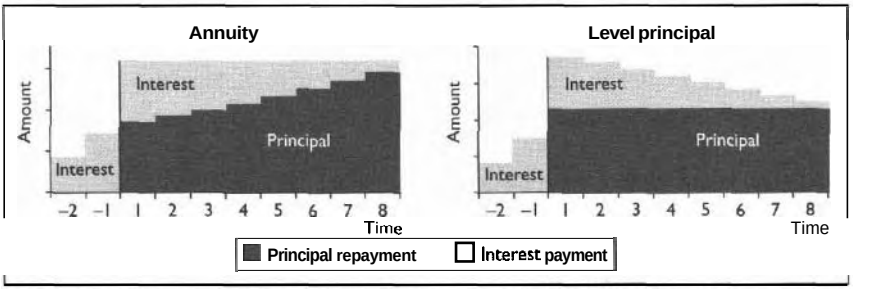
Debt Service Recovery

Building a power plant is a capital-intensive venture and requires huge investment. For example, a 10 MW gas-fired power plant may cost approximately US$8 million to install. Sponsor(s) relies heavily on project loans to implement such projects. The typical capital structure of a power plant has a debt-equity ratio of between 3:1 and 4:1. The amount of debt service recovered in tariff structure depends on the assumptions made by the sponsoris) at the time the bid proposal is prepared.

Generally, debt service is of two kinds – annuity payments and equal principal payments. In annuity repayment structure, debt service (principal plus interest) remains the same over the entire period of the loan, except the grace period when only interest is payable.

However, in an equal principal repayment structure, debt service consists of equal instalments of principal plus interest on declining balances. Under equal principal repayment scheme, which is very much preferred by bankers, debt service declines over time. Figure **A3.1.2** depicts the differences in repayment profiles.

Figure A3.1.2 Debt Service Payment Profile under Two Payment Methods



Debt service recovery is inflation non-escalable, i.e. it does not change according to changes in inflation index. However, in many developing countries, it is subject to indexation for exchange rate fluctuations.

ROE (Equity Service)

ROE compares net profit after taxes to the equity that shareholders have invested in the firm.

$$\text{ROE} = \frac{\text{Net profit after host country taxes}}{\text{Shareholders' equity}}$$

This ratio tells us the earning power on shareholders' book value investment. Sponsor's targeted ROE (also referred to as "hurdle rate", "threshold rate or return" or "risk-adjusted required rate of return") depends on a number of factors such as rate of return in alternative investment, different risk factors, and required premium for undertaking the venture. In addition, in Project Finance, this ROE should also include periodic recovery of equity.

Fixed O&M Expenses

Fixed O&M costs are independent of the project's operation. These include costs related to salaries, plant and service, spare parts, site leases, guest housing, transport, insurance, etc. Since fixed O&M is not linked with electricity generation, project vehicle recovers this component through capacity price. Fixed O&M expense is divided into foreign, local, escalable and non-escalable components. Fixed O&M cost is incurred both in foreign and local currency, and the project vehicle is reimbursed accordingly.

An escalable tariff component means it is allowed to fluctuate over time according to some index – mainly inflation or exchange rate parity index.

Variable O&M Expenses

Project vehicle is allowed to recover variable O&M costs through energy price. Variable O&M is a function of electricity generation. The higher the dispatch, the higher the variable O&M. Components of variable O&M are salaries and wages of part-time employees, cost of spare parts, maintenance of machinery, etc. Variable O&M is also divided into foreign, local, escalable and non-escalable components.

Fuel Cost

Fuel cost is generally structured as a direct pass-through item, i.e., subject to certain parameters (e.g. heat rate and fuel price), the project will be reimbursed the expense that it is expected to incur for purchasing just enough fuel to deliver the electricity that has been requested from the dispatch centre.

The IPP must have certain protective provisions in its EPC contract as well as its gas supply agreement (GSA). With regard to the EPC, a provision should be built into the contract that requires the contractor to deliver a fully commissioned plant with a heat rate matching the efficiency criterion for fuel reimbursement built into the PPA. Otherwise, a mismatch may exist between the expense incurred by the plant in generating electricity and the reimbursement provided under the tariff. Similarly, with regard to the GSA, a provision should exist requiring the gas sold thereunder to have a certain minimum heat content. If the heat content of gas delivered to the project vehicle is below the agreed level, gas price would have to be adjusted accordingly.

Calculating Tariff Components

We will now calculate the different tariff components based on some assumptions. We will then combine them to arrive at total tariff.

Assume for this purpose a 10 MW gas-fired power plant costing US$8 million. The sponsor(s) is planning to finance 80% of the project cost (i.e., US$6.4 million) from debt and the rest (i.e., US$1.6 million) from equity.

Other assumptions regarding the proposed plant are as follows:

PPA term	15 years
Plant load factor	85% per year
Fuel price (subsidized)	US$1.15/GJ (gigajoule)
Heat rate	7,500 kJ/kWh
Fixed O&M rate	US$53,000/MW
Variable O&M rate	US$0.0013/kWh/year

Electricity Generation

The amount of electricity generated is calculated in kilowatt-hour (kWh) and depends on plant capacity (10 MW) and a plant load factor (PLF) assumed to be 85% per year. Since there are 8,760 hours in each year, a PLF of 85% means the plant will operate 7,446 hours (=8,760 × 0.85) in each year at full load.

Hence,

Electricity generation during a year = 10 MW × 7,446 hours
= 74,460 MWh (megawatt-hours)
= 74,460 × 1,000 kWh
(Since 1 MW = 1,000 kW)
= 74,460,000 kWh

Capacity Price Calculation

Debt Service Recovery

Prior to submitting their proposal to the ceding authority, let us further assume that the sponsor(s) believes that it will be able to secure a US$6.4 million loan with a 9.5% annual interest rate from Bank A payable in annual instalments of principal plus interest under an equal principal repayment structure. For the purpose of simplifying our example, we will ignore the construction period and assume 12 years of financing, including a two-year grace period for principal effective up to two years after commissioning.

The annual debt service repayments for the loan are shown in Table A3.1.1.

As mentioned earlier, the project vehicle will recover its debt service obligations through capacity price. As such, the project vehicle will quote its yearly debt service obligation (usually in US cents/kWh and its equivalent in domestic currency) in its tariff proposal. Note that in this example, over the last three years of the PPA term, the project vehicle will not have any debt service recovery.

ROE (Equity Service)

The sponsor(s) is planning to invest US$1.6 million into this project, endeavouring to obtain a 20% IRR. This requires an average yearly recovery of US$342,211. The amount includes both the targeted equity return and annual recovery of equity. We have calculated this amount as an annuity stream spreading over 15 years. If this stream of dividend payment is dis-

Table A3.1.1 Debt Service Schedule (US$ Millions)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Opening balance	6.40	6.40	6.40	5.76	5.12	4.48	3.84	3.20	2.56	1.92	1.28	0.64	0	0	0
Interest payment	0.61	0.61	0.61	0.55	0.49	0.43	0.36	0.30	0.24	0.18	0.12	0.06	0	0	0
Principal payment	0	0	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0	0	0
Total debt service	0.61	0.61	1.25	1.19	1.13	1.07	1.00	0.94	0.88	0.82	0.76	0.70	0	0	0
Closing balance	6.40	6.40	5.76	5.12	4.48	3.84	3.20	2.56	1.92	1.28	0.64	0	0	0	0
Total debt service (US cents/kWh)	0.817	0.817	1.676	1.594	1.513	1.431	1.349	1.268	1.186	1.104	1.023	0.941	0	0	0

counted by 20%, it would result in a present value (PV) of exactly US$1.6 million. In terms of electricity generated, this means a cost of US0.46 cents/kWh per year to service the equity.

Fixed O&M Expenses

We have assumed that the plant will require, on average, fixed O&M expense of US$53,000 per MW every operating year to maintain. In practice, the sponsor(s) collects information from the manufacturer of the plant and also employs its own engineers to estimate its likely fixed O&M.

In the present case:

Total fixed O&M expense for every year = US$53,000 per MW × 10 MW
= US$530,000.

To recover this amount based on the electricity generation of 74,460,000 kWh would mean a change of US 0.712 cents/kWh per year.

Energy Price Calculation

Variable O&M Expenses

As mentioned earlier, variable O&M expenses depend on electricity generation. In our example, we have assumed variable O&M rate as US0.13 cents/kWh.

Fuel Cost

Fuel cost depends on electricity generation, fuel price and heat rate of the plant. The higher the heat rate, the higher the fuel costs. For the purpose of illustration, we have assumed a plant heat rate of 7,500 kJ/kWh and a fuel price (subsidized) of US$1.15/GJ – lower than the current world market price of approximately US$3.40/GJ.

Total fuel costs of a year = Electricity Generation × Heat Rate × Fuel Price
= (74,460,000 x 7,500 x 1.15)/1,000,000
(Note: 1 GJ = 1,000,000 kJ)
= US$642,217.5

In terms of electricity generated, fuel cost would be US0.863 cents/kWh per year.

With capacity and energy price components calculated above, we are ready to complete the sponsor's tariff structure. Total per unit tariff (Column 7) in Table A3.1.2 would be the summation of all individual components (Columns 2–6).

TableA3.1.2 Tariff Structure (US cents/kWh)

Contract year	Debt service	Equity service	Fixed O&M	Variable O&M	Fuel cost	Tariff (US cents/ kWh)	Generation (kWh)
1	2	3	4	5	6	7	8
1	0.817	0.46	0.712	0.130	0.863	2.98	74,460,000
2	0.817	0.46	0.712	0.130	0.863	2.98	74,460,000
3	1.676	0.46	0.712	0.130	0.863	3.84	74,460,000
4	1.594	0.46	0.712	0.130	0.863	3.76	74,460,000
5	1.513	0.46	0.712	0.130	0.863	3.68	74,460,000
6	1.431	0.46	0.712	0.130	0.863	3.59	74,460,000
7	1.349	0.46	0.712	0.130	0.863	3.51	74,460,000
8	1.268	0.46	0.712	0.130	0.863	3.43	74,460,000
9	1.186	0.46	0.712	0.130	0.863	3.35	74,460,000
10	1.104	0.46	0.712	0.130	0.863	3.27	74,460,000
11	1.023	0.46	0.712	0.130	0.863	3.19	74,460,000
12	0.941	0.46	0.712	0.130	0.863	3.11	74,460,000
13	–	0.46	0.712	0.130	0.863	2.16	74,460,000
14	–	0.46	0.712	0.130	0.863	2.16	74,460,000
15	–	0.46	0.712	0.130	0.863	2.16	74,460,000

APPENDIX 3.2

USE OF AVOIDED COST METHODOLOGY FOR ASSESSING UNSOLICITED PROPOSALS FROM PRIVATE SECTOR

A number of countries have applied the concept of avoided cost methodology to improve transparency when assessing and awarding projects to the private sector pursuant to an unsolicited proposal.

Background

Avoided cost methodology came into practice in the US energy sector through the Public Utilities Regulatory Policies Act (PURPA) of 1978. In an environment of increasing competition and deregulation of public utilities, the federal government enacted PURPA to ensure that public utilities were legaily bound to provide energy to consumers at the least possible cost.

According to the US Federal Energy Regulatory Commission's (FERC) interuretation of PURPA. avoided cost includes both the fixed and variable costs of an electric utility that can be avoided by obtaining energy from alternative qualifying facilities. One way of determining the avoided cost is to calculate the total (capacity and energy) costs that would be incurred by a utility to meet an incremental demand for electricity, comparing these to costs incurred by a purchase of electricity from a qualifying facility to meet this demand. The difference between the two values is the utility's net avoided cost. In other words, avoided cost is the net savings (or, additional costs) that result when the utility purchases capacity from another source rather than supplying that additional capacity itself. Avoided costs are the benchmark against which the cost-effectiveness of alternative resources is measured.

Therefore, if a public utility can obtain capacity more cheaply than it can supply itself, the public utility is obligated to purchase that capacity from the alternative source. The resulting savings are passed on to consumers.

Use of Avoided Cost Methodology for Other Purposes

A number of countries, industrialized as well as developing, have adopted the avoided cost methodology, applying it to power and other infrastructure sectors, for the purpose of assessing unsolicited proposals from the private sector. An example is the Philippines which applied the methodol-

ogy to the water sector where various unsolicited proposals were entertained during the 1990s. The avoided cost model in this specific case was designed to assess the cost to the public sector of implementing a bulk water supply project in the Philippines for the purpose of comparing this cost with that of either solicited or unsolicited private sector proposals. This cost is expressed as a two-part tariff, comprising fixed and variable components that the utility would have to charge to consumers to recover the costs of investment in, and operation of, the facilities in question. With this data available, the utility can then compare the tariff that it would have to charge if it undertakes the proposal made by the private proponent, with that of the latter to determine the savings, if any.

This comparison must be made with a certain amount of care, i.e., every effort should be made to "level the playing field" when making the comparisons. The following are the more noteworthy issues to take into account:

Financing Costs

In general, the public sector does not require a return on its equity. It may be able to finance a project wholly with debt over extended terms. The private sector, however, requires an ROE and shorter debt tenors. All things being equal, these conditions may result in a higher tariff for the private sector.

Debelopment Costs

There are a number of "soft" costs that the private sector must bear, such as legal fees, development fees and cost of conducting due diligence, which are largely ignored in the public sector.

Insurance

The public sector is often self-insured; however, it must purchase costly insurance policies to mitigate construction, operating and certain specialized risks.

Taxes

In many countries, the public sector does not pay taxes, or pays at a lower rate than does the private sector.

Construction Costs

The private sector uses turnkey construction contracts where price, schedule and specifications are guaranteed by the contractor from the onset; the public sector frequently uses construction contracts that are cheaper but less rigorous in their approach to price and schedule and in some cases, specifications.

O&M

The private sector relies on very strict O&M practices which, depending on the country, may be less expensive when conducted by the public sector.

The above issues are resolved by developing an avoided cost methodology that places the public sector essentially on the same footing, with the same constraints as the private sector if it (the public sector) undertakes the project itself.

APPENDIX 3.3

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND MITIGATION IN PROJECT FINANCE

This appendix provides the reader with the following information:

- A brief historical sketch of the origins of the environmental movement.
- Scope and content of environmental and social appraisal adopted by the multilateral agencies and governments to ensure that development projects are built and operated in accordance with established environment and resettlement policies.
- Process followed by project sponsor(s) in securing environmental clearances to implement their projects, including the initial screening of environmental and social impacts, development of a full-blown environmental impact assessment along with an environmental mitigation plan and a social resettlement plan.

Historical Background

During the Stone Age, hunters and gatherers had low ecological impact and were subjected to harsh conditions that led to population crashes. About 10,000 years ago, however, the first agricultural societies were created. Forests were cleared to build towns and cities or to provide tillable land to generate the food required by the new settlements. Resulting deforestation, soil erosion and desertification, as well as concentrated human and animal wastes, had a palpable impact on the environment. However, it was not until the industrial revolution of the 19th century that technology, surges in world population and urbanization along with new commercial activities (increased reliance on fossil fuels and mining) began to have an exponential impact on our surroundings. Concern was expressed for the environment in different parts of the world, especially in the most developed countries.

The realization of the value of natural resources and the appreciation of the consequences of their destruction date back several centuries in America. In 1652, the city of Boston established a public water supply, a step that was replicated in the next century by several towns in Pennsylvania. During the period just after the American revolution, no one could escape the ill-effects of expanding urbanization: the stench of sewage in nearby rivers, the odours of rotting food, and the unwholesome presence of animal and human wastes underfoot. By 1800, 17 municipalities had

emulated the city of Boston by taking similar measures to safeguard their citizens against unfit drinking sources.

Industrialization of the US in the 19th century widened the impact of environmental degradation. The growth of cities laid bare the impact of pollution. Writers were among the first to increase community awareness about what environmental degradation meant. Rachel Carson's 1962 classic, ***Silent Spring***[5], contained shocking revelations about the widespread pesticide poisoning of man and nature. Her book evoked a public outcry for direct government action to protect the wild. Carson perhaps unwittingly prompted a political movement that demanded that the government not only protect the land but also punish those who pollute it. Soon thereafter, stimulated by Carson's book, the media began covering issues such as the dangers of radioactive fallout and its effect on the food chain, impurities in urban water supplies and the potential health effect on humans, as well as the deterioration of city air as an explanation for the rising incidence of cancer.

Sensing the electoral advantage of such advocacy, Presidents Kennedy and Johnson were each able to make the environment one of their political issues. The first Earth Day on 22 April 1970, celebrated while Johnson was still in office, launched the environmentalist movement. Later that same year, he signed a bill creating the US Environmental Protection Agency (EPA)and launched a campaign to motivate other countries to adopt similar initiatives. More force was given to the drive when the UN General Assembly Resolution[6] 2997 of 15 December 1972 called for increased international environmental cooperation. The World Bank responded eventually with the establishment of an Environment Department in 1987. Parallel to these developments, several environmental groups – World Wildlife Fund (WWF), Environmental Defence Fund (EDF) and Nature Conservancy, among others – were organized to express public concern with such activities as overgrazing, soil erosion, famine, oil spills and loss of wild life (see Box A3.1).

As one would expect, there were clashes between developers and the environmentalists with regard to the shifting paradigm. Initially, developers were unwilling to change their ways and make adjustments for the new concerns because these translated into higher project costs. Since environmentalism was a new concern for governments as well, Federal and state

[5] Rachel **Carson's book was published in 1962. She was an inveterate** bird-watcher **and the fear of loss of species of birds led her to write *Silent* Spring.**

[6] The **resolution was adopted following the United Nations Conference on the Human Environment held in Stockholm, Sweden.**

Box A3.1 Narmada Bachao Andolan (Struggle to Save the Narmada)

In the past, processes governments and donor institutions for developing infrastructure projects have been criticized severely for not incorporating adequate environmental measures to safeguard the environment. Strong controversy has arisen in those cases where environmentalists can draw attention to failings in the planning process. One such example is the fight to save River Narmada in India.

Photo courtesy of Venu Govindu of Friends of River Narmada, http://www.narmada.org/index.html

The flagbearer for the Narmada Bachao Andolan (Struggle to Save the Narmada) is the literary personality Arundhati Roy, author of The God *of Small Things*, which won Britain's premier book prize, the Booker Prize, in 1997. Upon visiting the Narmada Valley, she saw first-hand the struggle of people in the Valley and the issues they raised. This convinced her to join the Narmada Bachao Andolan (NBA), one of the leading social and envimnmental struggles in India. NBA has been fighting against the development of the huge Sardar Sarovar Dam on the Narmada River for 14 years.

The following are some concerns voiced by those affected by the project:

- The dam projects were not conceived with adequate tion by the affected community.
- Other dams in the Narmada Valley have not solved the basic problems they were supposed to address, e.g. lack of power, drinking water, flood conmol and irrigation.
- The construction and development planning of the dams have disrupted millions of lives without lust and adequate compensation.
- The failings in this case are seen as part of a much bigger problem – the government's disregard for the environment. The disregard is said to be manifested in a number of other pmminent cases, among them the Union Carbide disaster in Bhopal, construction of the Bangalore-Mysore highway, human rights abuses over the port construction at Maroli, and many more.

There are thousands of such controversies arising all over the world. People and institutions alike are becoming more convinced and determined to incorporate stringent environmental and social policies to preserve the environment and protect affected populations.

agencies either had inadequate environmental policy frameworks in place or did not adhere to their own policies. The focus then was more on progress and development, and the environmentalists were viewed as anti-development or unrealistic and emotional.

Nonetheless, a profound shift did occur during the 1980s in the way governments and development agencies think about the environment and development. There was growing realization among economists and planners that industrial development that erodes natural capital is often not successful. Even then, it was increasingly evident that development strategies and programmes that do not take into account the state of critical resources – forests, soils, grasslands, freshwater, coastal areas, fisheries – may degrade the resource base upon which future growth is dependent.

Environmental Assessment

Increasing environmental awareness and concerns over sustainability of economic growth have broadened the range of issues that are examined in the assessment of the potential impacts of proposed projects on the environment and the social fabric of the country. The protection of the environment, and of individuals who are affected as a result of the implementation and operation of a project, are now given more attention by governments, lenders and sponsor(s) alike. To ensure that project implementation and operation effects are minimized, environmental and social issues are addressed often through consultative process with governmental agencies, non-governmental organizations (NGOs) and projected affected persons (PAPs). An Environmental Assessment (EA) is prepared to determine the environmental and social impacts of any project.

The preparation of an EA involves various steps, including environmental screening, a site-specific environmental assessment, and a regional environmental assessment if the project has geographically widespread ramifications. It also involves the preparation of a resettlement action plan (RAP) and an environmental mitigation plan.

The EA is a flexible procedure – varying in breadth, depth and type of analysis – depending on the project and its circumstances. The assessment includes two important components: (a) a study of adverse environmental and social impacts; and (b) an environmental and social mitigation plan. Although the EA is prepared early in the project development cycle, a number of follow-up studies are performed during discrete stages with the express objective of measuring the effectiveness of the mitigation plans or making mid-course corrections if found to be deficient.

A number of sources are used to prepare the EA, including:

- The country's laws and policies regarding the responsibilities of the sponsor(s) in respect to the protection of the environment and related PAPs.
- Similar policies of multinational institutions that are participants in the project's finance plan.
- Findings derived from other environmental studies conducted by independent consultants that are relevant to the undertaking.
- Discussions with individuals who will be responsible for environment compliance issues.
- Consultations with the PAPs, the project participants themselves and other parties affected.

The EA serves the purpose of improving the planning and decision-making during the project development process and ensures that options under consideration are environmentally and socially sound, and sustainable. Through this process, all adverse consequences of project implementation and operation should be recognized early in the development cycle and taken into account in site selection, planning and design of the project. Moreover the EA should identify ways of improving project performance, environmentally and socially, by preventing, minimizing, mitigating or compensating for its adverse impacts. These steps avoid failures at the project implementation level or costly remedial measures during operations.

In fact, there are many benefits of addressing the EA early in project development as it serves to do the following:

- Minimize project risks.
- Provide a more complete picture of a project's true worth (both environmental benefits and costs are recognized).
- Allow project designers and staff of financing and implementing agencies to address environmental and social issues in a timely and cost-effective manner.
- Produce clear and defensible arguments for accepting or rejecting a project.
- Reduce the need for special project requirements because appropriate steps may be taken in advance, and incorporated into the project design or, conversely, alternatives may be considered.
- Assist in avoiding costs and delays in implementation due to unanticipated environmental and social problems.
- Address the concerns of developing countries, donors and NGOs.
- Eliminate investment bias towards projects that promote the overuse and/or degradation of natural resources.

- Allow comparisons and rankings of different projects competing for scarce resources.

Environmental Screening

The purpose of screening is to decide the nature and extent of the EA, or environmental analysis, to be carried out. The classification of each proposed project depends on the type, location, sensitivity and scale of the proposed project, as well as the nature and magnitude of its potential impacts. Projects should be screened for environmental issues and assigned to one of three categories: A, B or C. Different counties have different methodology for project categorization but the basics are similar. The selection of the category should be based upon the expected environmental impacts. Screening for potential environmental impacts should take place early in the project cycle and should reveal whether or not an EA is necessary, and if so, what type of analysis is appropriate.

Below is a hypothetical description of project categories – not universal by any means – but illustrative nonetheless:

- Category **A.** A full EA is required if a project is likely to have significant adverse impacts that are sensitive, irreversible and diverse. The impacts are likely to be comprehensive, broad, sector-wide or precedent-setting. Impacts generally result from a major component of the project and affect the area as a whole, or even an entire sector:

  Examples of projects falling into this category:

  (a) Dams and reservoirs.
  (b) Forestry product undertakings.
  (c) Industrial plants (large-scale)and industrial estates.
  (d) Irrigation, drainage and flood control (large-scale).
  (e) Land clearance and levelling.
  (f) Mineral development (including gas and oil).
  (g) Port and harbour development.
  (h) Reclamation and new land development.
  (i) Resettlement and all projects with potentially major impacts on people.
  (j) River basis development.
  (k) Thermal and hydropower development.
  (l) Manufacture, transportation and use of pesticides or other hazardous and/or toxic materials.

- Category B. These projects have less adverse environmental impacts than those in Category A. The impacts are not major, diverse, numer-

ous, sensitive or irreversible. As a result, few Category B projects would require a full environmental analysis.

Rather, the preparation of environmental and social resettlement action plans is normally sufficient for this case.

Examples of projects falling into this category:

(a) Agro-based industries (small-scale).
(b) Electrical transmission.
(c) Aquaculture and mariculture.
(d) Irrigation and drainage (small-scale).
(e) Renewable energy power generation plants.
(f) Rural electrification with small-scale power.
(g) Tourism.
(h) Rural water supply and sanitation.
(i) Watershed projects.
(j) Rehabilitation, maintenance and upgrading of projects (small-scale).

- Category C. Projects falling into this category would not require any environmental analysis because the project is unlikely to have adverse impacts. On the basis of international experience accumulated thus far, it appears that such a list would include the following types of projects, although the examples are not exhaustive:

(a) Education.
(b) Family planning.
(c) Health.
(d) Nutrition.
(e) Institutional development.
(f) Technical assistance.
(g) Most human resource projects.

Initiating Consultations with Affected Groups and NGOs

Consultation processes are initiated shortly after the EA project category is assigned during the initial screening process.

The sponsor(s) must carefully address the views of all "stakeholders" (affected groups and NGOs working in and near the project site) in project design and implementation. It is especially critical to do so when preparing an EA. This process is important in order to understand both the nature and extent of any social or environmental impact and the acceptability of proposed mitigation measures, particularly to affected groups. Consultations are valuable ways to improve decision-making, to obtain feedback on

the EA process and draft report, and to increase community cooperation in implementing the recommendation of the EA.

Site-Specific EA

An EA, especially for a Category A project, usually addresses the site-specific environmental issues in considerable detail. The scope, detail and sophistication of an analysis should correspond with the expected impacts and take the following into consideration:

(a) Existing environmental baseline conditions, including zones of ecological and socio-economic relevance (e.g. watersheds).
(b) Potential environmental impacts, direct and indirect, including opportunities for environmental enhancement.
(c) Systematic environmental comparison of alternative investments, sites, technologies and design.
(d) Preventive or compensatory measures, generally in the form of an environmental mitigation plan or management plan.
(e) Environmental management and training.
(f) A proposed follow-up environmental monitoring plan.

The analyst should quantify, as comprehensively as possible and in physical units, the associated capital and recurrent costs of items (b) to (e). Justification should be made of their recommendations in economic as well as in environmental terms. Ultimately, the overall presentation should limit the analysis to those project components that may have an impact on the environment or on the surrounding population.

Let's take the example of a water supply project.

Water supply development, generally a Category A project, has its own sets of environmental problems. The following environmental and social issues are commonly associated with community water supply (CWS) systems:

- Problems related to project siting, such as:
  - Pollution of water supply sources by upstream waste inflows from communities, industries, agricultural runoff and soil erosion runoff.
  - Abstractions of raw water for CWS conflicting with other beneficial water uses (for both surface and groundwater sources).
  - For groundwater sources, hazard of land subsidence caused by excessive groundwater pumping.
  - Impairment of historical/cultural monuments.

- Problems related to design phase (including assumptions made in design phase on O&M services to be provided), such as:
  - Polluted/contaminated water served in distribution system.
  - Inadequate protection of water sources (intakes or wells) from surface runoff pollution.
  - Excessive growth of algae in distribution reservoirs.
  - Increase in production of sewage beyond capabilities of community facilities.
  - Unsatisfactory raw water quality due to excessive dissolved solids, chlorides, nitrates, fluorides and other constituents present at toxic concentrations.
  - Inadequacies in raw water quality which may be difficult to correct by treatment under design criteria.
  - Inadequate buffer zone around pumping and treatment plants for alleviating noise.
  - ➢ Inadequate design of facilities for receiving/storing/handling chlorine cylinders or other chlorine-containing compounds.
  - ➢ Impairments commonly associated with transmission lines and access roads.
- Problems during construction stage, such as:
  - ➢ Erosion and silt runoff during construction.
  - ➢ Resurfacing of exposed areas.
  - ➢ Other construction hazards.
  - ➢ Monitoring issues.
- Problems resulting from O&M inadequacies.

Regional EA

A more comprehensive regional impact assessment is used where a number of significant, dissimilar development projects with potentially dispersed impacts are planned for a reasonably localized area. The regional EAs may identify issues that the site-specific EAs might overlook (e.g. interaction among effluents or competition for natural resources).

Regional EAs are used for the design of sector investment programmes. They are particularly suitable for reviewing:

(a) Sector investment alternatives.
(b) Effects of sector policy changes.
(c) Institutional capacities and requirenients for environmental review, implementation and monitoring at the sector level.
(d) Cumulative impacts of many relatively small, similar investments that do not merit individual project-specific EAs.

Conducting and Completing the Consultation Process

Meaningful consultations between sponsor(s), affected groups and local NGOs require that the sponsor(s) provide relevant information prior to consultations. This means that the information should be provided in a timely manner and in a form that is meaningful for, and accessible to, the groups being consulted. Such information normally includes (a) for the initial consultation, a summary of the project description and objectives; (b) potential adverse effects of the proposed project; and (c) after the EA has been prepared, a summary of its conclusions in a form and language meaningful to the groups being consulted. Any consultation should pay particular attention to those issues most likely to affect the people involved in the process. In addition, the proponent should make the EA report available at some public place accessible to affected groups and local NGOs for their review and comment.

Resettlement Action Plan

The major social issues related to infrastructure or other projects include (a) involuntary resettlement; (b) protection of marginalized and vulnerable groups (including indigenous peoples); and (c) involvement of those people affected by the project in the planning and implementation processes.

Often, large infrastructure projects involve involuntary resettlement of people occupying the land to be acquired for the project. A primary task in preparing a resettlement action plan is to identify an appropriate site for resettling the affected population. Once selected, the planning process must encompass infrastructure development, conservation of cultural practices, capacity of the new site to support the population in terms of resource availability, etc. Timing of transport of PAPs and their belongings to the new site, assistance during transition and rebuilding of homes and infrastructure facilities are important components of the implementation process. While there is often a preference for a land-for-land compensation strategy, opportunities for cash compensation, skill assessment and development must also be considered. The issues relate not only to the populations being relocated but also to the communities at the host site.

The sponsor(s) must ensure that the population displaced by a project also benefits from its presence and standards of living are improved or at least maintained. If the resettlement action plan involves large numbers of people, care should be taken to prepare plans that are drawn up with the participation of the affected groups.

Some infrastructure projects may affect marginalized and vulnerable groups such as indigenous peoples; economically and socially disadvantaged groups; the elderly, women and children, and physically handicapped individuals. Social mitigation strategies must be incorporated into the resettlement action plan and indigenous peoples development plan. The planning process is most successful when the affected populations are involved in the planning and implementation process as required by different governments and NGO agencies.

Environmental Mitigation Plan

Apart from the environmental impact assessment and the resettlement action plan, the next most important component of an EA is an environmental mitigation plan (EMP). An EMP basically contains the measures to be taken, during the implemental and operational phase of a project, to eliminate, offset and reduce adverse environmental impacts to acceptable levels. The plan also includes the actions needed to implement them. An EMP is an essential element in Category A projects.

A mitigation (management) plan generally begins with the identification and summary of all the significant adverse environmental impacts that are anticipated. This leads to the description and the technical details for each mitigation measure, including the type of impact it relates to and the conditions under which it is required, along with equipment designs, specifications, descriptions and operating procedures, etc.

The next step is for the sponsor(s) to propose institutional arrangements that are needed in terms of staff training or reporting functions to properly supervise, enforce or monitor implementation of the EMP. There should be an implementation schedule for measures that must be carried out as part of the project, showing the phasing and coordination with overall implementation plans.

It is very important to have monitoring and reporting procedures to ensure that early detection of conditions that necessitate particular mitigation measures are made. This also provides feedback as to the progress and the results of mitigation, and whether corrective measures are needed. The cost estimates and sources of funds for both the initial investment and the recurring expenses for implementing the mitigation plan should be integrated into the total project-cost tables. Often, depending on the expertise in environmental management of the agencies responsible for implementation, mitigation plans cover one or more of the following topics: technical assistance programme, staff development, procurement of equipment and supplies, and organizational changes.

CASE STUDY

PUBLIC PROCUREMENT

In bidding, it is important for the ceding authority to interest the maximum number of qualified potential bidders to participate in a public tender. Equally important is the maximization of its bargaining position throughout the process. There are frequently trade-offs involved between these two objectives which must be resolved by the ceding authority before the RFP is released to the general public. Below are five bidding situations which you have been asked to consider as a member of the ceding authority's staff and a trusted advisor to the Chairman.

After reviewing the situation, you are to address the following issues in writing to the Chairman:

- What are the disadvantages of the approach?
- What are the alternatives?
- What are the strengths and weaknesses of each approach?
- What would be your final recommendation?

Bidding Situation 1

In its desire to obtain a detailed bid that is in a substantially final form, the ceding authority in the RFP requires the bidders to provide a complete technical, commercial and financial plan. The Chairman is of the opinion that this requirement provides the authority with great bargaining position and assurances that the finished project will comply with its requirements and preferences. As part of its plan, the ceding authority will require each bidder to raise any issues it may have with the detailed documentation proposed by the authority at the tender stage. Formal tender is held after the potential bidders have accepted the detailed documentation. When the first-ranking bidder is announced, the ceding authority will not need to enter into lengthy negotiations since all the detailed documentation has been agreed to in advance.

Bidding Situation 2

The ceding authority has a specific project in mind that it wants to bid out, but it is aware that there are a number of technical and commercial solutions to the project. Nonetheless, since it wants to compare competing bids in a fair and equitable manner, it decides to use one set of predetermined design specifications. Before the RFP is released, the Chairman of the ceding authority raises an objection to the release of the documents which

identify one predetermined set of design specifications. A task force is appointed to consider alternative solutions. The first reaction of the task force is that it is necessary to have one set of specifications in order to ensure fair and equitable bids. The Chairman argues, "How is it possible to encourage innovation in the approach, if we ourselves define the specifications?"

Bidding Situation 3

The ceding authority is tendering an old power plant that requires considerable rehabilitation on a Rehabilitate-Operate-Transfer (ROT) basis. As part of its tender package, it requires each potential bidder to conduct considerable technical due diligence relative to configuration of the plant, age of its component parts, technical condition thereof and the inventory of spare parts. According to the proposed instruction to the bidders, each bidder will then propose an all-in tariff to be charged based on its own technical evaluation. As the RFP is released, someone close to the very top of the ceding authority objects to the structure. "You realize it is going to be very expensive if each bidder has to conduct its own technical due diligence?"

Bidding Situation 4

The Chairman of the power development board calls you into his office to discuss an issue that is of concern to him. "We are flooded with unsolicited proposals to install generation capacity," he says, "and we need a policy to deal with this. Under what circumstances would you recommend that we consider unsolicited proposals to install power generation?

"Although the political climate is reasonably flexible given the projected shortages of power generation over the next few years, I feel we need to have a very defendable policy. Perhaps you can think of a reasonable way of creating a policy for unsolicited proposals by considering any one or more of the following criteria: (a) type of generation; (b) capacity or size of plant; (c) alternative energy generation (e.g. innovative renewable energy); (d) location of plant; and (e) dual-purpose generation (e.g. hydro/irrigation or diesel/desalinization)."

Bidding Situation 5

You have been asked to review an RFP requesting a container port terminal be built within three years of the date of award, with penalties levied on the concessionaire if the date is not met. From your own experience, you are aware that it takes three years to build such a terminal. You reason that

this gives the concessionaire about one year after award to reach financial closing. "It's a right timeframe bur do-able," remarks your friend and colleague who drafted the documents. "We really need the capacity now."

You wonder, however, whether a bid should be more flexible with regard to the timing. After all, this is the first container port deal in this part of the world that will be privately owned, and you wonder whether there is a way of affixing a time schedule without discouraging interest on the part of bidders.

chapter 4

SOURCES OF PROJECT FINANCE

INTRODUCTION

The purpose of this chapter is to identify the institutional sources of Project Finance available in developing countries and to discuss their mission, products and the major drivers that influence their evolution. For the convenience of the reader, Appendix 4.1 provides a summary of the discussion in this chapter.

Over the last 130 years, four "boom periods" have existed when the availability of long-term ***capital flows*** was particularly pronounced. Each lasted about five to ten years and was ended abruptly by a turbulent event: World War I, the Great Depression, the Debt Moratoria of 1982 and the Asian financial crisis of 1997. Comparatively, these periods were different from each other in some respects.

Long-term capital flows include official and ***private*** flows. Official flows encompass grants, credits and other forms of assistance by multilateral and bilateral institutions to developing countries. Some of these multilateral or bilateral institutions are providers of Project Finance debt and equity. Similarly, private flows include debt (from the private capital and credit markets) as well as equity from a variety of institutions.

Long-term capital flows originate in industrialized countries or mature economies where the level of national savings exceeds investment. They "flow" towards developing countries where the investment requirements of worthy projects and programmes far outstrip the resources available to implement them. Of course, there are significant flows of capital between and among industrialized countries bur these are not of specific interest in this chapter. The assumption, widely prevalent in many quarters, is that sound projects in industrialized countries do not have any difficulty in mobilizing finance. Projects located in the developing world do experience difficulty, from time to time, in achieving this objective regardless of how sound they are. They are the focus of this chapter for this reason.

Commercial projects, regardless of location, are usually financed with a combination of debt and equity. Equity is provided by the project sponsor(s) and investors; debt, however, is accessed from one or more sources. Generally, sponsor(s) in industrialized countries approaches debt sources located within the country itself. In contrast, sponsor(s) of projects located in developing countries must access their debt capital abroad.

There are two principal reasons for this:

- A large portion of the cost to build any project stems from its "imported content", e.g. equipment that is usually available in an industrialized country, is priced in US dollars or some other acceptable hard currency, and must be imported into the host country.
- For legal and regulatory reasons, the domestic banking system of many developing countries is generally unable to provide financing in a foreign, hard currency. In addition, because of the short-term nature of the deposit base, the banking system is unable or unwilling to extend local currency loans on the extended terms needed by infrastructure projects.[2]

While some of the world's project opportunities are located in industrialized countries, a disproportionate number at any given time is located in developing countries, with the corresponding dependence on cross-border debt sources for implementation.

Box 4.1 identifies four major surges over the last **130** years in long-term capital flows to emerging market countries, from:

- **1870** to the outbreak of World War I.
- Post-World War I to **1929,** the onset of the Great Depression.
- **1973** oil price shock until the **1982** Mexican financial crisis.
- **1990** until the **1997** Asian financial crisis.

A close examination of capital flows during these boom periods leads us to the following inferences:

- Long periods of modest, occasionally negative, movements in cross-border flows have been punctuated by epochs when capital flows across developing country borders have been large, if not overwhelming.

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[1]It is also true that even if the local banking system were able to provide the required level of funding in local currency, the availability of foreign exchange in the country's spot market may be insufficient to pay off the imports required by some of the larger projects.

[2]As will be discussed subsequently in this chapter, there are important exceptions to this rule. Countries such as China, Malaysia and Thailand, as well as other countries in Latin America, have relatively sophisticated domestic banking and capital market systems capable of addressing fairly large projects.

Box 4.1 Capital Flows to Developing Countries during Four Boom Periods (1870–2000): A Historical Perspective[3]

Key issues	Phase 1 1870–WW I	Phase 2 Post WW I to the Great Depression	Phase 3 1973–82	Phase 4 1990s up to the 1997 financial crisis
Causal factors behind increased global flows	Great interest and opportunities to finance privately owned, infrastructure projects.	Great expansion of trade and prosperity. Loans were largely needed to finance trade deficits in selected countries. Latin American countries continued to attract loans for infrastructure projects.	Oil price hikes create huge availability of petrodollars in US and European banks. Soon thereafter, there resulted an inability of developing countries to adjust to oil price increases.	Due to changes in legal regulatory framework of many developing countries permitring unrestricted private ownership of infrastructure, unprecedented numbers of Project Finance/ Acquisition Finance opportunities became available over a very short period.
Creditors/ Creditor countries	Commercial banks in the UK, France, Germany, other institutions. high net worth bondholders.	High net worth bondholders in the US. UK, France.	Commercial banks in the US. UK. Japan, Germany, France and other industrialized countries.	commercial banks and other financial institutions in the US. UK, Japan, Germany, France, Australia, Canada and other industrialized countries.
Developing economy borrowers	Australia, Canada, New Zealand, US.	Central and Eastern European, Latin American countries.	Rapid expansion in the number of borrowing countries.	Most emerging market countries.

[3]Some information found in this box is derived from World Bank's *Global Development Finance 2000*, pp. 110–154.

Box 4.1 (continued)

Key issues	Phase 1 1870–WW I	Phase 2 Post WW I to the Great Depression	Phase 3 1973–82	Phase 4 1990s up to the 1997 financial crisis
Financial instruments used	Bonds issued by project companies.	Bonds issued by project companies in Latin America and governments elsewhere.	Predominantly bank syndicated loans; Project Finance in selective use.	Predominantly Project Finance, portfolio equity flows and foreign direct investment
Targeted project	Railroads primarily and other infrastructure (electric power, water, mining).	Primarily public sector borrowing; nonetheless, privately owned railroad and infrastructure projects in Latin America continued to attract financing.	Primarily public sector borrowing; however, large oil, gas and mining developments attract debt on a Project Finance basis.	Primarily private sector borrowing for power and telecom generation projects. Subsequently, Project Finance proliferates for infrastructure projects of all kinds.

- Three "boom" periods – the first, second and fourth – in these cross-border flows were linked to the financing of infrastructure in developing countries.
- During the fourth period, a shift occurred in the public policy framework of many developing countries, permitting unrestricted foreign ownership of infrastructure facilities. Accompanying this change in framework, developing country governments tried different approaches to the privatizing of infrastructure facilities. Generally, countries in Asia initially focused on infrastructure greenfields, while Latin American countries addressed infrastructure privatizations. Attracted to the new policies, unprecedented levels of private long-term capital flowed from residents located in industrialized countries into new, or newly privatized, infrastructure and other similar facilities in developing countries.

By the end of the fourth boom period, many different kinds of participants are involved in Project Finance, providing either loans, equity and/or various credit enhancements, e.g.:

- Largest commercial banks.
- Multilateral banks such as the World Bank Group and its regional affiliates.
- Governments/Host countries.
- Bilateral organizations, predominantly trade finance and investment promotion agencies.
- Bond markets.
- Investment funds, organized generally as limited partnerships.
- Host country sources of deht and equity.

Each institution develops a differentiating mission, operating modality and approach to the provision of Project Finance services. Closely complementing the growing volumes of cross-border flows from 1990 to 1997, is a significant and rising level of domestic involvement (financial as well as operational) in developing country infrastructure, stemming from:

- Equity provided by local sponsor(s) and/or domestic stock markets.
- Loans provided by domestic development finance institutions and commercial banks.

Prior to commencing this discussion on the institutional sources of funds available for projects in a developing country, it would be useful to provide some dimensions to Project Finance as it applies to greenfield infrastructure in developing countries during the period from 1990 to the Asian financial crisis.

DIMENSIONS OF DEVELOPING COUNTRY INFRASTRUCTURE FINANCE

Tables 4.1a and 4.1b indicate that total capital flows to emerging market countries rose from US$101 to US$285 billion a year from 1990 to 1996. Private flows increased from US$44 billion to US$244 billion, while official flows decreased from US$56 to US$41 billion.

Over that span, private capital was directed largely to the financing of private projects and firms rather than public expenditures. Between 1990 and 1996, public sector borrowing from private sources rose from US$63 billion to only US$85 billion, barely offsetting the drop in official flows. In contrast, private capital (debt and equity) to private recipients rose from US$38 billion to US$200 billion.

According to Dailami and Klein (1997), total infrastructure financing in developing countries increased rapidly from less than US$1 billion in

Table **4.1a** Net Capital Flows to Developing Countries

	1990		1996	
	US$ billions	As share of total	US$ billions	As share of total
Total flows	100.7	100	284.6	100
Sources				
Official flows	56.3	56	40.8	14
Private flows	44.4	44	243.8	86
Recipients				
Public sector	62.8	62	84.8	30
Private sector	37.9	38	199.7	70
Foreign direct investment	(24.5)	(24)	(109.5)	(38)
Portfolio equity flows	(3.2)	(3)	(45.7)	(16)
Non-guaranteed debt	(10.1)	(10)	(44.5)	(16)
Bonds	(0.1)	(0.1)	(20.8)	(7)

Table **4.1b** Private Flows to Privately **Owned** Infrastructure **(1988–96)**

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Total	0.1	0.9	2.0	3.5	5.8	12.3	15.7	15.6	20.3
Loans	0.1	0.8	1.4	0.1	1.5	6.3	6.0	11.1	7.7
Bonds	0	0.2	0.5	0.7	1.1	3.9	5.8	3.3	7.2
Equity	0	0	0.1	2.6	3.1	2.1	3.9	1.3	5.4

Source: World Bank, Global *Development* Finance 1997.

1988 to more than US$27 billion in 1996.[4] Finance for ***private*** greenfield infrastructure rose from virtually nothing in **1988** to more than US$20 billion in **1996.** Although the data on cross-border infrastructure capital flows are not strictly comparable with the data on capital flows, the former appear to account for approximately **10%** of global private-to-private cross-border capital flows.

As may be determined from the analysis in the next section (Table 4.2), host country sources of financing (*e.g.* equity from sponsor(s), domestic

[4] See Dailami, Mansoor and Klein, Michael, "Government Support to Private Infrastructure Projects", paper presented at the conference held in Columbia, South America sponsored by the World Bank, Managing Government Exposure to Private Infrastructure, 1997.

stock markets, merchant banks or the internal cash flow generation of projects as well as debt from commercial banks and development finance institutions) may have accounted for about 75% of the volume of private-to-private cross-border flows. Hence, total investment (cross-border and domestic) in ***new*** developing country infrastructure may have reached US$35 billion in 1996, considerably less than estimated global requirements.[5]

What developing countries are the primary recipients of private investment in infrastructure? Who, aside from sponsor(s), are involved in the provision of cross-border financing of these large facilities and in what amounts?

Available statistics do not appear to answer the question comprehensively. With regard to the first question, informal estimates from the World Bank indicate that about 10–15 developing countries receive 90% of all the cross-border flows but the membership of this elite group changes each year, albeit slightly. In respect of the second issue, it is possible to develop some educated guesses as to where the financing is coming from, based on a 1997 study done by the International Finance Corporation (IFC), described in the next section.

COMMERCIAL BANKS

Box 4.2 identifies the top 15 banks in the world during 199912000 in terms of arranging Project Finance debt from third parties.[6] Four of the 15 are commercial and investment banks located in the US – the first and second largest arrangers for the period are among these four. The 5th–12th spots on the table are occupied by an English, a German, a Japanese and a Canadian bank, including the two Dutch and two French banks. On the 13th, 14th and 15th spots are three Italian banks, one of which is a national export credit agency.

Historically, banks were the original pioneers in the 1970s in the Project Financing of oil, gas and mining projects and, subsequently in the 1990s, of infrastructure projects. Along with insurance companies, they are dominant players in the provision of Project Finance for projects located in industrialized countries.

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[5] The **World Bank estimates the global annual requirement for investment in infrastructure within developing countries to be about US$200 billion. A reliable estimate would be difficult to arrive at and, in any case, depends on one's definition of "required" infrastructure.**

[6] **Obviously, the above and other commercial banks provide many other kinds of finance, as well: corporate finance, construction finance, trade-related finance, etc.**

Box 4.2 Commercial and Investment Banks Active in Awanging Global Project Finance

		Global		Americas		Asia-Pacific		Europe-Middle East-Africa	
	Underwriter	US$ millions	No. of deals	US$ millions	No. of deals	US$ millions	No. of deals	US$ millions	No. of deals
1	Citigroup	2,171	15	1,351	5	208	4	612	6
2	Bank of America	2,149	8	1,616	4	98	2	438	2
3	Barclays Capital	2,119	12	535	2	735	3	849	7
4	ABN-AMRO	1,768	14	821	5	158	4	789	5
5	BNP Paribas	1,598	14	499	5	156	3	944	6
6	West LB	1,181	12	912	7	147	3	122	2
7	Dresdner Kleinwort Benson	1,000	12	69	3	130	3	801	6
8	Goldman Sachs	733	2	600	1	0	0	133	1
9	ING Barings	482	5	329	1	0	0	153	4
10	JP Morgan	450	2	70	1	0	0	380	1
11	Credit Lyonnais	445	5	357	2	49	2	39	1
12	Bank Tokyo-Mitsubishi	388	4	339	2	49	2	0	0
13	Banca Commerciale Italiana	380	1	0	0	0	0	380	1
14	Halifax Bank	375	3	0	0	0	0	375	3
15	Mediocredito Centrale	374	1	0	0	0	0	374	1

Source: *Project Finance International, 5* September *2000.*

However, the importance of their participation in similar projects located in developing countries is significant although, based on the limited evidence below, not overwhelming.

Several reasons may exist for their reduced impact in the financing of infrastructure projects in developing countries:

As discussed more fully in Chapter **6,** some of the exposure of commercial banks in developing countries is "covered", i.e., guaranteed, insured or credit enhanced in some way by a third party. In a developing country context, cross-border loans from commercial lenders may be partially, or wholly, covered in the following ways:

- "Political risk" insurance from multilateral entities, such as Multilateral Investment Guarantee Agency (MIGA).

- "Political risk" or "comprehensive risk" insurance from investment promotion agencies, such as the Overseas Private Investment Corporation (OPIC);export credit agencies (ECAs), such as the US Export-Import Bank; or private insurers such as the American International Group (AIG).
- "Indirect guarantee" through the preferred-creditor status of a multilateral bank.

Since the guarantors, or insurers, are largely public sector institutions, some observers tend to discount the importance of the commercial bank participation in these loans. Unfortunately, available statistics do not identify the level of commercial Project Finance exposure that is partially or wholly covered by third parties. The IFC study discussed further below does not address this issue either.

As already mentioned, commercial bank uncovered exposure is concentrated in relatively few countries, usually investment-grade-placed. As of year-end 1999, there were about 40 industrialized and developing countries rated in that category by Standard and Poor's (S&P), a widely known international rating agency. Twenty to *25* industrialized countries are located in North America, Asia, and European or Australian continents. The balance of this group consists of developing countries that share the honors among themselves in any given year for being among the top 10–15 destinations for uncovered commercial bank loans.

Bank regulators in industrialized countries have been increasingly vigilant in recent years supervising the activities of their country bank and indirectly constraining the growth of their exposure in developing countries.

The IFC Study

In 1996, a study was conducted of 140 private infrastructure projects that IFC had participated in between 1988 and 1996. As shown in Table 4.2, the projects had an aggregate cost (total financing) of US$26.6 billion with IFC providing US$2.2 billion in debt and US$800 million in equity, about 11% of the total financing

Analysis of financing sources shows that foreign commercial banks provided US$5.6 billion in debt, or *35%* of the US$16.1 billion of debt

Table 4.2 Sources of Debt and Equity: IFC Projects (US$ Billions)

Source of debt financing	Amount (US$ bn)	% of total financing (debt and equity)	Source of equity financing	Amount	% of total financing (debt and equity)
Foreign			Foreign		
Foreign commercial banks	5.60	21	Private foreign sponsor(s)	2.60	10
ECAs	2.00	8	IFC	0.80	3
Supplier credits	1.70	6	Other multilateral1 bilateral banks	0.10	0
International bonds	0.50	2			
IFC loans	2.20	8			
Other multilateral/ bilateral banks	1.30	5			
			Local		
			Private local sponsor(s)	2.80	11
			Local publicly owned banks	0.00	0
Local					
Local commercial banks	2.70	10			
Local publicly owned banks	0.10	0	Internal cash flow generation	4.20	16
Total debt	16.10	61	Total equity	10.50	39

Source: International Finance Corporation. "Lessons of Experience #4: Financing Private Infrastructure," 1995–96, p.57.

required to implement these projects – roughly 21% of the total financing. ECAs extended US$2 billion in direct loans and US$1.7 billion in guarantees of suppliers' credits for a total of $3.7 billion, 14% of the total financing.

The relative participation of the parties can be re-grouped as follows:

Source of financing	Amount (US$ billions)	% of total financing
IFC and other multilateral/bilateral banks	4.4	16
Bilateral agencies (ECAs)	**3.7**	14
Banks, private parties outside host countries	8.7	**33**
Banks, private parties within host countries	*5.6*	21
Internal cash generation	4.2	16
Total	26.6	100.0

The sample, of course, is not random, since it only includes IFC projects. Relative to commercial banks, IFC is disproportionately active in middle- and lower-income developing countries. Nonetheless, it may be indicative of the relative importance of commercial banks in emerging market Project Finance as well as that of some of the other institutions active in these area, namely:

- Private cross-border financing delivered **33%** of all the financing required in the IFC sample – offshore commercial banks (21%), private foreign sponsor(s) (10%) and international bonds (2%) providing the financing. If (direct and indirect) ECA financing is added to this total, $12.4 billion, or 47% of the total financing, came from cross-border flows and what is conventionally reported to be "private sources".'
- Foreign commercial banks, ECAs and suppliers credits, provided about 35% of the total debt financing in this sample, i.e., they "catalyzed" two times more financing than the local commercial banks.
- Private host country parties infused 21% of all the financing, with domestic commercial banks and private sponsor(s) accounting for the bulk.
- Balance financing came largely from internal cash flow generation and other sources.
- Total private financing raised from in-country sources, including internally generated project funding, was about 78% of that delivered by cross-border financing.

The single most obviously expandable source of financing for developing country infrastructure projects is that of the offshore commercial banks since, presumably, multilateral and bilateral agencies are resource-constrained. Nonetheless, mobilizing an adequate volume and maturity of commercial debt in these countries may continue to prove difficult. There are

'Although ECAs are owned by governments, most of them issue guarantees to the commercial banks and/or suppliers that are participating in the Project Finance deals. Since the banks, suppliers and projects are all privately owned, the convention is to consider these as private flows.

several reasons for this as already discussed. Commercial banks are relatively risk-averse, and infrastructure projects are particularly risky:

- Services offered by infrastructure projects are both, essential and *frequently* provided by monopolists. This increases political sensitivity to the prices charged. There will be fears that pressure from consumers will make it politically difficult to maintain prices that cover costs and/or debt.
- Infrastructure projects typically require large sunk investments that take ten to 30 years to recoup. Over such long periods, investors are exposed to serious cross-currency risks. For example, a typical financing mix consists of 20–40% equity and 60–80% debt. Exposure to currency risk, a relatively minor concern for foreign investors in export-oriented industries, is a critical feature of infrastructure. Project revenues are often generated in local currencies, while servicing of foreign debt and equity involves payment in foreign currency. Fluctuations in the exchange rate and/or potential capital controls limiting currency convertibility create serious risk for foreign investors and financiers.

To the extent that US commercial banks participate in Project Finance, there may exist strong preferences for:

- Projects located in investment-grade, rather than non-investment-grade, countries. (Nonetheless, it is also safe to assume that commercial banks will eschew "uncovered" participation in the projects of any country that is not perceived as well managed, regardless of its rating. By the same token, under the right circumstances, commercial banks may be induced to take uncovered risk in projects located in countries with good management even if non-investment-grade).
- Privatization rather than greenfields, given the more immediate cash flow prospects of the former as well as the absence of construction risk.
- Greenfields that generate foreign exchange.
- Among greenfields located in non-investment-grade countries that do not generate foreign exchange, those that feature: (a)multilateral bank participation; (b)political-risk cover from a multilateral bank, MIGA, bilateral institution or private insurer; and/or (c)a B-Loan syndication led by IFC or other multilateral bank.

In the next section, we will be addressing the financial products of the multilateral banks, IFC and MIGA and the variations of political-risk cover that they offer.

THE WORLD BANK GROUP

The World Bank Group is made up of five institutions, as shown in Box **4.3.** In addition, there are regional multilateral institutions with similar mandate, shown in Box 4.4.

Box 4.3 The World Bank Group: A Historical Perspective

The World Bank Group consists of five closely associated institutions:

- **The International Development Association (IDA).** Established in 1960, IDA has 161 members with cumulative lending of US$120.3 billion as of FY2000. IDA is the World Bank's concessional lending arm and provides key support for the Bank's poverty-reduction mission. IDA assistance is focused on the poorest countries, to which it provides interest-free loans (referred to as credits) and other services. In fiscal 2000, 81 countries were IDA-eligible. To this group, it lends about US$5–7 billion each year.
- **The International Bank for Reconstruction and Development (IBRD).** Established in 1945, IBRD has 181 member countries with cumulative lending of US$349.4 billion as of FY2000. IBRD provides US$20–25 billion in development assistance to middle-income developing countries and creditworthy poorer countries. A significant portion of this total is allocated to infrastructure, including improvements needed to attract private sector interest and participation in this sector.
- **The International Finance Corporation (IFC).** IFC was established in 1956 and now it has 174 member countries with committed portfolio of US$21.7 billion as of FY2000. IFC promotes growth in the developing world by providing equity or debt to private companies as well as technical assistance and advice to governments and businesses. IFC stimulates private bank lending in developing countries through its B-loan syndication activity. About 25% of IFC's for-own-account portfolio of US$14 billion is in infrastructure.
- **The Multilateral Investment Guarantee Agency (MIGA).** Established in 1988, MIGA helps encourage foreign investment in developing countries by providing guarantees and insurance to foreign investors against loss caused by non-commercial risks. MIGA also provides technical assistance to help countries disseminate information on investment opportunities. MIGA has 152 member countries and cumulative guarantees issued of US$7.1 billion as of FY2000.
- **The International Centre for Settlement of Investment Disputes (ICSID).** ICSID helps to encourage foreign investment by providing international facilities for conciliation and arbitration of investment disputes. ICSID also has research and publishing activities in the areas of arbitration law and foreign investment law. This last entity was established in 1966 and now has 131 member countries with a total of 75 registered cases.

Source: Year 2000 Annual Reports of each of the above institutions.

Box 4.4 Regional Multilateral Institutions with Overlapping Member Countries

Name of institution	Founding year	Number of member countries	Activity in project finance
African Development Bank (AfDB)	1963	51 African countries (and 25 other industrialized nations)	Limited
Asian Development Bank (ADB)	1966	36 Asian countries (and 16 other industrialized nations)	Provides equity, debt and B-loan syndications through its private window
European Investment Bank (EIB)	1958	15 member countries	Provides financing services in six countries joining the European Union (EU) in 1967
Inter-American Development Bank (IADB)	1959	46 Latin countries (and 17 other industrialized nations)	Provides equity, debt and B-loan syndications through Inter-American Investment Corporation
The European Bank for Reconstruction and Development (EBRD)	1991	50 member countries plus the EU and EIB membership countries	Merchant banking services in Central and Eastern Europe
Islamic Development Bank (IsDB)	1974	45 member countries in Africa, Asia and the Middle East	Provides grants or loans to infrastructure projects

Source: Year 2000 Annual Reports of each of the above institutions.

In the immediate post-World War II era, the World Bank extended loans to assist in the reconstruction of Western Europe. By the 1960s, however, the Bank focus by this time had changed and was aimed at providing funding to meet human development needs in countries within Africa, Asia and Latin America.

Projects financed by the Bank during the following two decades were in such areas as housing, health care, clean water, safe waste disposal, energy and education. Towards the end of the 1980s, the Bank shifted its strategy to one of reducing the public sector role and increasing that of the private sector in the provision of infrastructure services.

Among the principal drivers contributing to this change in policy were the following:

- Rising debt and declining commodity prices eroded the bargaining power of developing country governments, leading to various efforts to create a New International Economic Order, a topic that had sparked intensive debates in the 1970s.
- As mentioned in Chapter 2, the advent of the Reagan administration in the US, as well as the Thatcher government in the UK, stimulated during the 1980s a worldwide ideological shift: a renewed emphasis on free markets (at the expense of government intervention) and private ownership of means of production.
- Dissolution of the Communist block after 1989 de-legitimized, in most cases, an active role for the state in production of private and so-called public goods.

In response, two trends evolved at a global level, both of which have already been discussed. The first of these consisted of massive sales, particularly by governments in Eastern Europe and Latin America, of assets owned within the infrastructure and industrial sectors. The second involved a concomitant increase in private long-term capital flows required by the private buyers to finance their acquisitions.

Although the move to a larger private role in the provision of infrastructure services was welcomed by many, it had certain drawbacks. A number of observers were concerned that a shortage of debt in the international markets could emerge relative to needs, and/or that the demand for long-term debt under these circumstances could lead to a significant rise in its cost. A subsidiary concern in some quarters was whether foreign firms could manage risks associated with large investments in foreign markets. To address these issues, at least partially, the Bank developed two guarantee and one loan instrument.

World Bank Loans and Guarantee Instruments

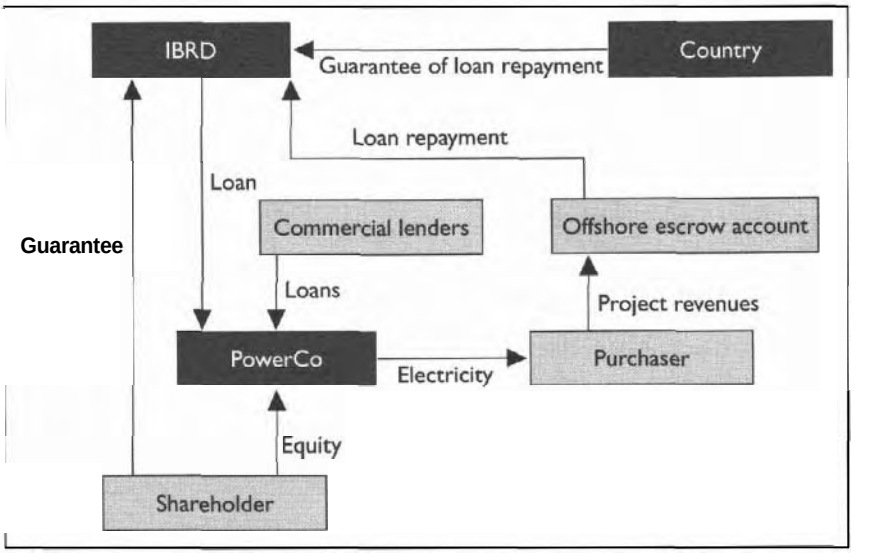
The International Bank for Reconstruction and Development (IBRD) will provide technical and financial assistance to any developing country that requires it. However, the use of any of the financial mechanisms discussed below is more likely to be required by the poorer developing countries.

IBRD developed two guarantees during the 1990s for private lenders to infrastructure projects. The first of these is a ***partial risk guarantee*** (PRG) intended to cover commercial loans made to a developing country project

against payment defaults arising from breaches by the sovereign of its contractual provisions. The second is a ***partial credit guarantee*** (PCG) covering designated debt service payments against all risks—typically later maturities of an extended term loan. There is a difference in the effects of coverage of the two instruments. The PRG is a financial guarantee that protects the lender against breach by the host government of any contractual undertaking. However, a PRG is not designed to protect the lenders for a default created by the project vehicle, its sponsor(s), contractor or any other private parties. The PCG, in contrast, guarantees lenders the repayment of later maturities of an extended term loan if there is a default under the security package, regardless of who, or what, caused it. A PCG does not guarantee repayment of the early maturities of a loan. Any PRG or PCG extended by the World Bank in support of a project located in a member country must in turn be supported by a counter-guarantee of the member country itself. This means that any World Bank disbursement under its guarantee(s) would create a World Bank claim on the member country to be discharged in the manner and terms set forth under the counter-guarantee agreement.

As represented in Figure 4.1, IBRD also provides loans for discrete projects in poorer countries that generate substantial foreign exchange (enclave projects), usually secured by (a)a counter-guarantee by member coun-

Figure 4.1 IBRD Project Loans for Projects in IDA Countries



Source: Benoit, Philippe. 'The World Bank Group's Financial Instruments for Infrastructure", The World Bank-Private Sector (www.worldbank.org), Note 101, January 1997, p. 2.

try; (b) an undertaking from private shareholders, for example, that they will complete the project on time and schedule; and (c) assignment of an offshore trust account.

Creation of Financial Intermediaries

In addition to providing loans and guarantees through IBRD, the International Development Association (IDA) also provides loans directly to a member country with the objective of creating a financial intermediary, an investment fund or other facility that would provide loans, equity, guarantees, take-out financing, or other financial support for a portfolio of discrete projects. In 1992, IBRD provided two separate loans to the Jamaican Government that were used to create the Private Sector Infrastructure Fund (PSIF) and Private Sector Energy Fund (PSEF), with the objective of extending loans to private-owned infrastructure projects, including energy-related undertakings. In 1994, TBRD provided the Private Sector Energy Development Project (PSEDP)-II with a US$250 million loan channelled through the Government of Pakistan (GOP) to finance a fund that subsequently made loans to eight private sector energy projects. Similarly, in 1997, IDA provided loans for about US$100 million to the Government of Sri Lanka (GOSL) to finance the creation of Private Sector Infrastructure Development Corporation (PSIDC) as well as US$225 million to the Government of Bangladesh (GOB) to organize Infrastructure Development Company Limited (IDCOL).

The operating characteristics of these arrangements are as follows:

- IDA credits are provided to the member country under a development credit agreement at zero interest rate, very long tenors of up to 40 years, an extended grace period, and a service charge of 0.75% per annum on the unpaid balances.
- The host country, through its designated agency, enters into an agency and administration agreement **(AAA)** with an existing, or newly organized, company to manage the debt fund. The parties agree that the credit proceeds from IDA to the member country will form the resource base from which loans at near commercial rates are to be extended by the fund administrator to private infrastructure facilities. Consistent with other provisions in the AAA, the administrator is then responsible for monitoring and recovering debt service when due.
- IDA simultaneously enters into a project agreement with the administrator that sets forth certain broad requirements related to lending and operating policies. Within these provisions, it is agreed that IDA must

issue a "No Objection" certificate to the fund administrator prior to the extension of a loan commitment on any project.

Most of these funds provide subordinated, rather than senior, loans at near market rates. As discussed in Chapter 10, a subordinated loan is a form of credit enhancement. Although it is different from a guarantee, it has the similar effect of catalyzing commercial bank participation in Project Financing. (As an exception to the general rule, IDCOL in Bangladesh provides both senior and subordinated loans.)

International Finance Corporation (IFC)

The International Finance Corporation (IFC), the private sector arm of the World Bank Group, was founded in 1956 to promote private sector investment, both foreign and domestic, in member countries. To accomplish this objective, IFC is authorized by charter to use the following instruments:

- Equity. Direct investment in the common stock of project companies, financial institutions, or other types of project vehicles.
- Quasi-equity. Direct investment in instruments that incorporate lending and equity features, e.g. subordinated loans or convertible debt. These provide risk/return trade-offs that lie between those of a straight loan and equity investment.
- Loans. Direct investment in the long-term debt securities issued by a project vehicle. In this case, IFC recognizes at least two kinds of loans:[8]
  - A-Loan. A loan funded with IFC's own resources.

    B-Loan. A loan arranged, or syndicated by IFC with participating financial institutions. Under the B-Loan programme, IFC is the lender of record relative to the project vehicle and the host government. At financial closing, or shortly thereafter, IFC syndicates its B-Loan exposure to third-party financial institutions. By maintaining its identity as "lender of record" in any given transaction, IFC bestows on the participating banks its preferred lender status.[9] It should be duly noted that the B-loan is not a formal guarantee in any sense.

As of 30 June 2000, IFC had a committed portfolio of US$21.7 billion, as may be determined from Table 4.3, involving 1,320 firms. Of this amount,

[8] IFC actually has a third loan, a "C" loan, a subordinated loan, which is rarely used.

[9] Preferred lender status is a designation given to IMF, all World Bank Group institutions and many of the regional multilateral hanks described in Box 4.4. According to their respective charters, they can only lend to member countries if there is recognition that, in the event of a foreign exchange crisis, the preferred lenders have first call on available foreign exchange.

Table 4.3 IFC Operations *1996–2000* (US$ millions)

	FY1996	FY1997	FY1998	FY1999	FY2000
Operations					
Investment approvals					
Number of projects	264	276	304	255	259
Total financing approved	8,118	6,722	5,905	5,280	5,846
For IFC's own account	3,242	3,317	3,412	3,505	3,505
Held for others	4,876	3,405	2,493	1,775	2,341
Total project costs	19,633	17,945	15,726	15,578	21,136
Committed portfolio[10]					
Number of firms	985	1,046	1,138	1,258*	1,320*
Total committed portfolio	16,336	18,992	20,608	21,238	21,733
For IFC's own account	9,844	10,512	11,448	12,917	13,527
Held for others	6,492	8,471	9,160	8,321	8,206

* Excludes companies for which IFC has committed only risk-management guarantee products.
Source: International Finance Corporation, *Annual* Report *2000*, Vol. I, p. 25.

US$13.5 billion was for IFC's own account and US$8.2 billion was held for others, i.e., B-Loans that had been successfully placed with third-party financial institutions. It should be noted that IFC has been successful in its B-loan activity despite the fact that the arrangement does not provide any cover for the participant against any risk except transfer risk, and then, only implicitly.

According to their own published reports, IFC's main project targets are in middle-income and lower-income developing countries, particularly those that are not yet deemed to be creditworthy enough to attract substantial interest from the commercial banks.

Multilateral Investment Guarantee Agency (MIGA)

Established in 1988, the Multilateral Investment Guarantee Agency (MIGA) provides political-risk insurance for equity and debt of private foreign investments. Its insurance cover the risks of expropriation, war and civil disturbances, currency transfers and breach of contracts. It can also provide protection against breach of contract where the claimant is denied appro-

[10] Total committed portfolio and held for others at 30 June 2000, 1999, 1998, 1997 and 1996 including securitized loans.

priate judicial or arbitration relief. MIGA's insurance instruments differ from those of the IBRD/IDA in three ways: insured amounts (a) are limited to $200 million per project; (b) do not require a host country counter-guarantee; and (c) include coverage of equity and shareholder loans aside from commercial loans.

MIGA's political-risk insurance, discussed further in Chapter 6, to private infrastructure companies has expanded sharply in recent years. In addition to offering lenders and investors coverage against the abovementioned specific risks, MIGA's multilateral status means that its participation in a project enhances confidence that the investor's right will be respected.

Table 4.4 shows MIGA's guarantee portfolio between 1990 and 1998.

Table 4.4 MIGA's Guarantee Portfolio, Fiscal 1990–98

Category	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
Number of guarantees issued	21	27	38	54	68	70	55	72	53	458
Amount of guarantees issued (US$ millions)	313	374	372	672	862	614	830	1,310	1,605	6,952

Source: Multilateral Investment Guarantee Agency (www.worldbank.org), *Annual* Report 2000.

MIGA's portfolio is well diversified across several sectors. The financial sector accounts for 34% of gross exposure, followed by infrastructure (29%), which shows the fastest growth.

GOVERNMENT

Role of Government

Government facilitates investment in infrastructure in one of two ways: through (a) guarantees and assurances provided to the private investor, particularly the cross-border investor, as identified in Box 4.5; and (b) a sound public policy and, in particular, a good regulatory framework. We will address each of these in turn.

Guarantees

Government guarantees and financial support are more difficult to avoid for greenfields, where tariffs are usually negotiated at a level that is higher

Box 4.5 Patterns of Supra-Government and Government Support for Private Infrastructure Projects: A Survey

Support mechanism/ Source of funds	Number	Pattern of support/Conclusion
Multilateral banks and ECA debt	37	Greater incidence of debt assistance by multilateral banks and ECAs in non-investment-grade emerging markets (27)
Government guarantees	28	Nearly three times as many government guarantees in non-investment-grade countries (24) than in investment-grade countries (9)
Informal agreements	28	Although 9 agreements were issued in Mexico, use of informal agreements is more common in investment-grade countries (11)
Multilateral banks and ECA guarantees	26	Slightly more examples among non-investment-grade emerging markets (15) than in investment-grade countries (11)
Government equity participation	18	Greater incidence of government equity participation in investment-grade countries (11)
Government debt (senior and subordinated)	14	Equal split among non-investment- and investment-grade countries
Multilateral equity participation	13	Much greater incidence of equity shareholding by multilateral banks and ECAs in non-investment-grade emerging markets (11)
Government grants	12	Greater incidence of government participation through grants in non-investment-grade countries (8)
Preferential tax treatment	2	Limited use of preferential tax treatment in investment-grade countries

Source: Dailami, Mansoor and Klein, Michael, "Government Support to Private Infrastructure Projects in Emerging Markets", paper presented at the conference held in Colombia. South America sponsored by the World Bank, Managing Government Exposure to Private infrastructure, 1997.

than that prevailing. The following are the risks and the respective government guarantees intended to mitigate against them:

- Breach of contractual obligations of a government-owned project participant:
  - Off-taker.
  - Major input supplier.

- Policy/political risks:
  - ➢ Currency convertibility and transferability.
    Changes of law or regulatory regime that are prejudicial to the project.
- Interest rate shifts:
  - ➢ Tariff reopener to cover a significant shift in interest rates prior to financial closing.
- Market risks:
  Guarantee of all terms under the off-take agreement, including provisions that specify quantity to be bought and price to be paid.
- Price/exchange levels:
  Indexing the prices paid under an off-take agreement to changes in inflation or changes in the exchange risk.
- Debt repayment:
  Guaranteeing debt or portions of debt, usually through a PRG or PCG.

To determine the prevalence of these guarantee, Dailami and Klein (see Box 4.5) conducted an extensive investigation that covered the financial packages of 78 projects (39 power, 26 transport, 7 waterlwaste, 4 telecommunications and 2 gas). These were then deconstructed and tabulated by type of support mechanism and source of funds.

Among the key conclusions:

- Of the 37 instances where multilateral banks and ECAs were participating jointly in project debt, 27 were in non-investment-grade countries.
- Guarantees of the type described above were detected in 28 host countries. Their prevalence was nearly three times greater in non-investment-grade countries.
- Informal agreements between government and project vehicle were used 28 times and appear to be more prevalent in investment-grade countries. (Informal agreements include the use of comfort letters, side agreements, non-binding assurances of tariff increases and other such mechanisms.)
- Of 26 agreements issued by multilateral banks and ECAs guaranteeing debt, more than half were issued in non-investment-grade countries.
- Investment-grade countries are more likely to invest in the equity of an infrastructure project than are non-investment-grade countries.
- Both investment-grade and non-investment-grade countries are just as likely to be participants in the debt issued by infrastructure projects.

Better Policy Frameworks

Dailami and Klein conclude that even countries with sub-investment-grade ratings can attract sizable private investment in infrastructure without special government guarantees if sound sector policies are made credible. Privatizing existing public sector assets, for example, reduces the role of government and, with it, fears of commercial interference. Establishing an independent regulatory commission to regulate the generation, transmission and distribution of power may accomplish the same thing. In Argentina, Peru and Bolivia, the electricity sector was privatized without any special government guarantees. This allowed these countries to attract investment despite their unstable macroeconomic environments.

Privatization also allows investors to earn high rates of return without raising consumer tariffs. This occurs in an auction where the winning sponsor(s) bid is set at that point where existing tariffs generate the required rate of return. This is not true in a greenfield where prices paid for services must be set at negotiated, frequently unpopular levels.

BILATERAL INSTITUTIONS

There are two types of bilateral institutions active in global Project Finance: (a) ECAs; and (b) investment promotion agencies. Each of these types of institutions, to some extent, has changed the way they operate to accommodate a larger role in Project Finance.

Trade Finance Agencies

The primary objective of ECAs is to promote their home country exports especially to developing countries. They accomplish this by providing one or both of the following financial services covering 85% of the home country export value of shipped goods:

- Direct loans, with medium- and long-term tenor,[11] to buyers located in foreign countries.
- Guarantees and insurance, as will be discussed subsequently in Chapter 6, specifically tailored to provide protection against political and commercial risks to the entities that finance the buyers.

Prior to 1994, ECAs would seek counter-guarantees from host country institutions when extending either loans or guarantees. Since then, a number

[11] In ECA parlance, medium-term implies financing for up to seven years, while long-term would mean financing over seven years.

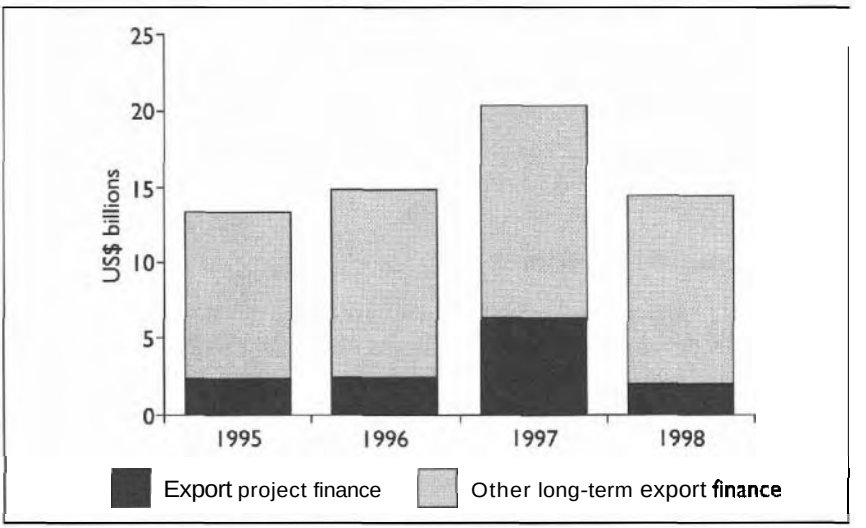
of ECAs (notablyJapan, France, Germany, UK and the US) have extended their support to Project Finance deals in developing countries. Under the new programmes, counter-guarantees are not always required to back up ECA's direct or indirect exposure for Project Finance deal.

Although relatively new, the aggregate volume of ECA financing has become very significant in a short time, as shown in Figure 4.2.

Forces affecting the evolution of the ECAs at this time are:

- A shift in the nature of industrialized country exports: buyers of goods are now predominantly private whereas ten years ago, they were primarily government-owned.[12]
- Competition at the national level within most industrialized countries for export market share, with aggressive emphasis within some of these countries to open up new markets through the introduction of additional services.

Figure 4.2 ECA's Project Finance Compared with Aggregate Long-Term Export Financing, 1995–98



Source: International Finance Corporation, "Lessons of Experience No. 7: Project Finance in Developing Countries". 1999. p. 34.

Investment Promotion Agencies

Private enterprise investment promotion agencies assist in mobilizing the participation of home country corporations in the economic and social

[12] Export-Import Bank of the United States *Annual Report* 1999.

development of emerging market countries as well as the transition economies of Central and Eastern Europe. Depending on the agency, and as discussed further in Chapter 6, services provided to home country corporations include some or all of the following:

- Insuring private equity investment overseas against a broad range of political risks.[13]
- Financing private businesses overseas through loan and loan guarantees.
- Mobilizing private investment funds, as a source of third-party equity to private business overseas.

Two of the bilateral investment promotion agencies mobilize equity funds: US's OPIC and UK's Commonwealth Development Corporation (CDC). OPIC, by the beginning of FY2000, had sponsored the development of 27 equity funds with combined investment capacity of $3.3 billion. These funds have been invested in more than 300 businesses in 40 countries around the world and played a role in providing capital, technical know-how and management assistance in important emerging markets.[14] CDC launched its first fund, Commonwealth Africa Fund,[15] in 1996, and is reportedly planning to follow up with others.

Factors affecting the evolution of these institutions, financial services offered, and the range of countries in which they are active, consist of the following:

- Unprecedented volumes of cross-border equity investment have been made over the last 20 years, within the industrialized countries themselves as well as within emerging market and transition economies.
- The privatization of thousands of state corporations in the former Soviet Union, Eastern Europe, Western Europe and all over the developing world has been one of the more powerful drivers influencing the bilateral agencies, since these types of projects require not only the purchaser's equity, but frequently also third-party equity and political risk insurance.

[13] **Cover provided to equity by these agencies would be similar to the political-risk cover provided on loans by ECAs. It covers confiscation, nationalization, expropriation and deprivation (CEND); currency inconvertibility (transfer risk) and political violence (loss of assets due to war, revolution, insurrection, or politically motivated strife, terrorism and sabotage).**

[14] **Overseas Private Investment Corporation,** *Annual* **Report 2000.**

[15] **Commonwealth Development Corporation** (www.commonwealth.org/htm/info/links/cdc.com), *Basic* **Information.**

- An increasingly urgent need, felt by key industrialized country governments, to support the international activities of their private sectors by, among other things, extending an "official" umbrella providing protection.

  Efforts by bilateral investment promotion agencies to extend protection to these equity flows have been accompanied by a plethora of similar efforts within multilateral institutions, particularly the World Bank with the creation of MIGA (1988) and other activities as well.
- Supply of available projects (and development of protection programmes by bilaterals and multilaterals) has coaxed out investment from, especially, US private institutions to participate in cross-border opportunities, for the purposes of seeking higher yields and diversifying existing investment.

INTERNATIONAL BOND MARKETS

The major international bond markets are in the US, Japan, Germany and the UK. The US bond market is the largest in terms of (a) volume; and (b) ratio of volume to gross national product (GNP), followed by Japan.

Bonds in the US can be sold to the public or placed directly with institutional investors. Public bonds require registration with the Securities and Exchange Commission (SEC) and rating by an acceptable rating agency prior to sale to the general public. ***Private*** Bonds, in contrast, can be placed privately with institutional investors such as insurance companies or pension funds without the need for registration or rating.

The US bond market, traditionally, is the main source of borrowing for federal, municipal and local government issuers. The level of public sector issuance is considerably greater than that of the private sector. Private issuers are either corporates or banks. In terms of bond issuance, corporations are much more important in the US than they are in Japan or Germany. Bank issuers, on the other hand, are much more important in the latter two countries.

During the 1980s, and especially in the 1990s, the US bond market became much more receptive to foreign bonds. ***Yankee*** bonds are the designation given to long-term debt instruments that are issued in the US capital markets by foreign issuers. A major factor in the more favourable reception was the adoption of Rule 144(a) by the SEC in 1990. The Rule permits the purchase of foreign unregistered securities by US qualified institutions with at least US$100 million under management as well as the subsequent sale of these securities to other qualified institutional buyers without the requirement for a minimum holding period. Japan's bond market is also

quite receptive to foreign corporations as most impediments to entry have been removed over the last 30 years. Under Japan's rules, foreign corporations may issue two types of yen-denominated foreign bonds: Samurai bonds and Shibosai bonds. Samurai bonds are public issues relied on by large and very creditworthy borrowers such as multilateral organizations and foreign governments. Shibosai bonds, on the other hand, are instruments that are placed in the Japanese market privately.

Foreign issuers of bonds in the German market are mainly industrial firms and banks. The level of foreign bond issuance in the German bond market also increased dramatically during the 1990s due to the streamlining and simplification of procedural requirements. The UK bond market is much more limited although the proportion of foreign issuers to total issuers is greater in that market than in the others.

Still another market is the Eurobond, an instrument created in the 1960s. After an interest equalization tax was levied on the issuance of foreign securities by US nationals, the tax made foreign borrowing in New York more expensive than alternative sources. As a result, the Euro market moved to London, where borrowers were able to tap the Eurocurrency market. A Eurobond can be issued in any convertible currency but cannot be placed in the country whose currency it is denominated in. To do so would attract regulatory vigilance by the country of currency. Thus, a Eurodollar issue can be sold in the UK and France but, to avoid SEC surveillance, not in the US; a Euroyen issue can be sold in the US and/or UK but not in Japan. In following this practice, Eurobond markets fall outside the purview of any regulatory authority.

Overall, the risk of default in most of the bond markets is very small, reflecting the stringent issuing requirements even for private placements. Generally, only high-quality corporations are able to access these markets. Since the 1990s, a large number of publicly owned foreign corporations located in Latin America and Asia have been able to issue bonds successfully in one or more of these markets. Privately owned infrastructure projects in developing countries are able to approach these markets only if the projects are extremely robust and the sponsor(s) is well known.

A number of these infrastructure projects, particularly over the period 1995–97, were able to access the US 144(a) and private placements markets. Many of these projects were rated investment grade by one or more of the international rating agencies. Factors that go into these ratings are discussed in Appendix 4.2 along with the preconditions that must exist a *priori* to enable countries as well as projects to secure a favourable rating from one or more of the rating agencies.

INFRASTRUCTURE INVESTMENT FUNDS

A number of equity funds have been created by investment banks, multilateral banks and insurance companies for purposes of investing in a portfolio of private infrastructure projects in developing and industrialized countries.

These funds channel equity, quasi-equity and, in some cases, debt capital from institutional investors primarily to the private sponsor(s) of power, telecommunications and transport projects in Asia and Latin America e.g. Asian Mezzanine Infrastructure Fund. The purpose is to allow investors (who might otherwise not invest in individual projects because of risks and costs associated with making efficiently sized investments) to invest in diversified portfolios of infrastructure firms and projects. From a performance perspective, these funds are expected to yield more than 20% annually.

Drivers behind the growth and popularity of these funds are as follows:

- Proliferation of opportunities simultaneously in many countries and regions.
- Need on the part of institutional investors to seek wider diversification in their portfolios and realize (potentially) higher yields.
- Inability or unwillingness on the part of project sponsor(s) to commit from its own resources the full amount of equity required by one or more given projects.
- Emergence of reputable fund managers.

Such funds will face the risks associated with all infrastructure investments, including liquidity risk. They seek to reduce liquidity risk by listing their own shares on developed country stock markets and by assisting project investments to list their securities on emerging country stock markets once they have established an operating track record. However, the infrastructure investments generally will remain illiquid during the life of these funds.

HOST COUNTRY SOURCES OF DEBT AND EQUITY

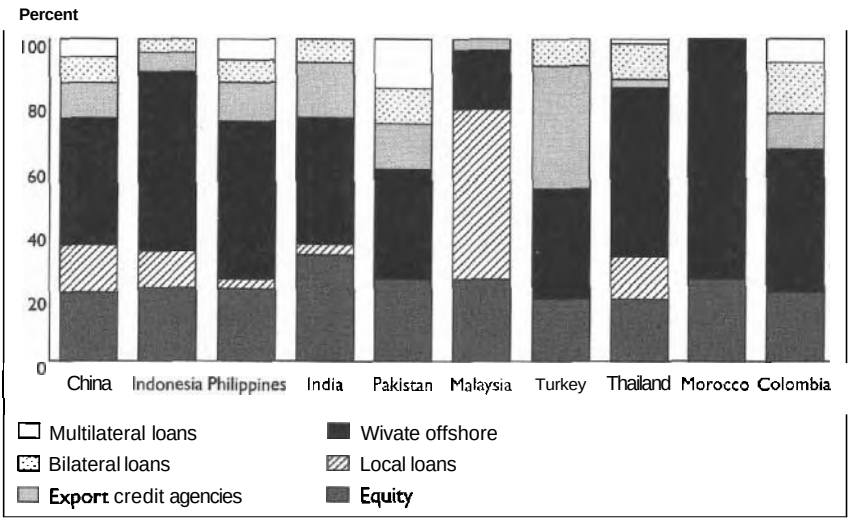
It is beyond the scope of this book to comment extensively on host country sources of debt and equity, as conditions vary greatly from one country to the next. Broadly, in industrialized countries, it can be assumed that debt is generally raised within the host country itself, while equity may be domestic or foreign. In contrast, and as discussed earlier, project debt and equity in developing countries originate largely from abroad. There does not appear to be extensive commentary in the Literature in this specific area.

A special study was published in December of 1998 regarding the impact of 137 contracts for greenfields entered into by developing country agencies with independent power producers (IPPs) over the period 1990–97. The study concludes that IPP projects were highly leveraged with an average debt-equity ratio of 3.17, and that approximately 80% of the debt was raised from foreign sources, most of it "from a small pool of banks that face limits on exposure to clients, sectors and countries".[16]

As shown in Figure 4.3, the conclusion from examining the sample of countries was that only China, Malaysia, Indonesia and Thailand had been able to deliver a significant component of local debt to such projects. Moreover, in all these countries, project equity is held mostly by a few global developers (30%), engineering, procurement and construction (EPC)contractors and local industry (20%).

In general, the above study concluded cautiously that developing country energy sector's exposure to cross-currency risk may have increased under

Figure 4.3 Sources of IPP Financing, 1990–97



Source: Albouy, Yves and Bousba, Reda, "The Impact of IPPs in Developing Countries: Out of the Crisis into the Future", The World Bank-Private Sector (www.worldbank.org), Note 162, December 1998, p. 3.

[16] Albouy, Yves and Bousba, Reda, "The Impact of IPPs in Developing Countries: Out of the Crisis into the Future", The World Bank-Private Sector (www.worldbank.org), Note 162, December 1998.

the IPP greenfield programme over what it might have been had state-owned utilities continued to expand their own generation capacity to meet demand. It provided the example of Pakistan, as a country that had vastly increased its exposure not only to foreign debt and equity but also to imported petroleum-based fuels.

One of the biggest future challenges within developing countries will be to increase the percentage of local currency debt and equity contribution to greenfield, as well as privatization projects. Over the long term, the best approach in this regard may be to improve the receptivity of the local domestic capital markets to long-term debt issuance, for the following reasons:

- Commercial banks in most developing countries are unlikely to contribute greatly to the capitalization of large greenfield projects because they intermediate between retail depositors and borrowers. Since deposits are usually short-term in nature and depositors' needs for cash are highly cyclical, banks tend to make short-term loans to less risky established customers. In contrast, the securities markets bring savers and investors together more directly than banks do.
- Commercial banks in developing countries may not be accustomed, or even comfortable, with the concept of entering into an inter-creditor agreement with foreign banks where loan governance decisions, including decisions related to the enforcement of security, are undertaken by lenders through well laid out voting procedures. Host country banks, compared to foreign lenders, may be more influenced by different criteria as to when and how to proceed in a distressed project.
- Securities markets are probably more innovative and, in any case, better able to define risk explicitly. They price, package and manage risk but do not focus on lessening it. To compensate for risk, an investor in securities will share in either the profits or losses of an enterprise or seek a higher assured yield. To protect against loss, investors typically diversify by investing in several enterprises such that the profits from some offset losses in others. In this way, the securities markets allow firms to raise finance for riskier projects from investors who seek higher returns and can manage their overall risk exposure.
- The spread, as well as adaptation to local environments, of such techniques as securitization of debt, described in Chapter 2, is likely to offer great promise to developing countries for drawing out participation by institutions in the capital markets generally, and greenfield projects, specifically.

Review Questions

1. Why are projects located in developing countries financed in US dollars, or other hard currencies?
2. How many boom periods have there been in the last 130 years in cross-border financing? What created these booms? What ended them? When and where did the art of Project Finance originate in these boom periods?
3. How important are the commercial banks in Project Finance globally? In what way does their participation differ when lending to industrialized countries and developing countries?
4. What are the factors that discourage commercial bank lending to lower and middle-income developing countries?
5. What institutions make up the World Bank Group? What role does each of these play in the offer of Project Finance services?
6. What is the difference between export credit agencies and investment promotion agencies?
7. List three types of institutions involved with creation of infrastructure investment funds?
8. How would your financing plan differ if you were asked to fund the same project in three different countries: (a) an industrialized country; (b) higher income developing country; and (c) middle-income developing country? What funding agencies would you rely on principally in each case? In what type of country would you choose to rely on (i) insurance companies; (ii) export credit agencies; (iii) investment promotion agencies; (iv) commercial banks; and/or (v) members of the World Bank Group?
9. In which countries would you be likely to get the longest financing terms? What effect would this have on the tariffs that could be offered?

APPENDIX 4.1

SOURCES OF FUNDS SUMMARY

Box A4.1 summarizes the focus, services and special requirements of the various public and private institutions that are active in the provision of Project Finance in developing countries:

- Commercial banks are the single largest participant in the provision of Project Finance in industrialized and developing countries. They provide large volumes of ***uncovered*** Project Finance in selected developing countries, especially those that are perceived to be the least vulnerable. Commercial banks are also the most selective regarding the type of infrastructure facilities that they pursue, thus far preferring power and telecommunications to other types of infrastructure finance.
- The World Bank, regional multilateral banks, IFC, and MIGA are more flexible in their lending policies. By the very nature of their business, they are more likely to consider a wider variety of projects located in member countries, including some that may not appear to be as creditworthy but may possess other compensatory features. To this end, the World Bank, ADB, EBRD and Inter-American Development Bank (IADB) use guarantees and direct loans to assist in completing the finance plans for important projects. By policy, the World Bank requires that their guarantee instruments be counter-guaranteed by the host government.

  The World Bank itself is unique among the multilateral banks in offering loans to government for the purpose of creating special lending vehicles that subsequently extend credit to private infrastructure facilities generally on a subordinated basis. The subordinated loan, as is discussed in Chapters 6 and 10, is a type of credit enhancement that serves a similar purpose as would a guarantee in mobilizing finance from commercial banks.
- IFC, European Investment Bank (EIB),Inter-American Investment Corporation (IIC) and other similar organizations operate as merchant banks taking equity, loans and mobilizing finance from third parties through their B-loan syndication, while MIGA, as discussed in Chapter 6, provides political-risk insurance to equity and loan project participants covering project exposure to confiscation, expropriation, nationalization and transfer risks, or perils of a similar nature.
- Bilateral agencies such as ECAs and investment promotion agencies are also quite active in providing direct loans or guarantees to projects located in developing countries. ECAs, as a fundamental precondition, will only extend credit, or guarantees, to cover partially the cost of

Box A4.1 Summary of Sources of Funds

Institution	Global focus	Project focus	Services	Requirements, imposed on project borrowers
Commercial banks	Engage in Project Finance on an uncovered basis only in countries that are deemed to be relatively invulnerable to foreign exchange crises	Prefer certain types of projects, e.g. power and telecommunications	To project: ▪ Advisory ▪ Underwriting ▪ Loans (Ten developing countries receive 90% of all international commercial bank loans)	• Rigid loan requirements ▪ Adhere to at least host country environmental standards
World Bank **Others include:** • **ADB** • **IADB** • **EBRD**	Developing countries that are members However, the World Bank and others are more active in those countries which are not favoured by capital flows	All infrastructure that has potential to be privately implemented; no limitations provided project is reasonably creditworthy and country is a member with good standing	**To government:** • Advisory • Fund creation To project: • Loans • Guarantees e.g. PRG, PCG (Guarantees and loans must be counter-guaranteed by host government)	• Selection must feature World Bank-approved international competitive bidding (see Chapter 3) • Adhere to World Bank and host country environmental standards

Box A4.1 (continued)

Institution	Global focus	Project focus	Services	Requirements imposed on project borrowers
IFC	Developing countries, particularly those not favoured by capital flows	No limitation, provided project is creditworthy and country is a member with good standing	To government: Advisory To project: • Equity • Quasi-equity • Debt • Loan syndication(s)	Adhere to World Bank and host country environmental standards
MIGA	Developing countries	No limitation, provided project is creditworthy and/or country is in good standing	To project: Political-risk insurance	Adhere to World Bank and host country environmental standards
ECAs	Largely developing countries, especially middle- and low-income developing countries	Reasonably creditworthy projects; however, in practice largely focused on power and telecommunications	To project: • Direct loans • Guarantees (Several ECAs no longer require counter-guarantees)	Services and works must be procured in ECA's home country

Box A4.1 (continued)

Institution	Global focus	Project focus	Services	borrowers
Investment promotion agencies: • **OPIC** • **CDC** • **FMO***	Largely developing countries, especially middle- and low-income developing countries that are defined to be of strategic interest	Increasingly focused on projects located in poorer countries	**To project:** • Direct loans • Guarantees	• Sponsored by citizen of the country of the bilateral agency • Strong developmental spinoff • Services and works must be procured in bilateral agency home country
Host-government-owned funds	Projects located in its own country	Varies	**To project:** • Subordinated loans • Occasionally, senior loans	If funds are created with participation of IDA, project must meet IDA's ICB procedure, developmental and environmental conditions.
Collective investment funds	Projects located in specific countries within a specific region e.g. Latin America, Asia	Power, Telecommunications	**To project:** • Quasi-equity instruments • Subordinated loans	• Robust cash flow • Meets environmental standards • Located in investment-grade country

*The Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N V (FMO), the Netherlands development finance company, similar to the US OPIC.

capital equipment purchased in their home country; investment promotion agencies will extend credit to those projects that are sponsored by home country nationals or otherwise have significant other inputs from the home country.

- Host-government-owned funds are generally used in the more vulnerable developing countries.

  A variety of host country institutions are capable of providing local currency denominated equity and debt to infrastructure projects but their contributions thus far in most of the developing countries have been sub-optimal. **A** variety of factors constrain both the developments of these institutions into bona fide cash flow lenders, including legal, regulatory and traditional practices. It is here that the largest and most beneficial changes to the mobilization of finance for limited recourse projects are likely to occur.

- Other collective investment funds are used in power and telecommunications projects, which are generally located in investment-grade countries.

APPENDIX 4.2

PURPOSE AND CONDUCT OF SOVEREIGN AND CORPORATE CREDIT RATINGS[17]

Overview

Generally, the international financial markets require substantial and reliable country-specific information in order to assess the risks of doing business and/or incurring exposure in any country. A sovereign credit rating (SCR) efficiently supplies this information to numerous financial market participants with potentially widespread benefits to users of capital and the economy at large.

International credit rating agencies such as S&P and Moody's Investor Services (Moody's) have developed sophisticated quantitative and qualitative tools to evaluate a country's ability to service its obligations. The quantitative tools include four sets of indicators measuring the economic and financial health of the country. The qualitative tools review economic policies, political environment and outlook for improvements (or problems) in the country's financial health. Based on an exhaustive review of this information, rating agencies assign an initial SCR that is reviewed at least once in every subsequent year, or as conditions in the country change. The initial SCR is normally accompanied by a foreign currency bond offering made by the government.

Benefirs from an SCR are derived from greater access to capital for the government itself, its agencies, parastatals and private corporates. These benefits can be quantified in part by the reduction in the cost of borrowing incurred by all borrowers of foreign currency.

SCR Methodology

Evaluating the Sovereign's Ability to Pay Its Obligations

SCRs are published for the country's local currency as well as foreign currency obligations.

While these ratings use similar inputs, they can have very different results. In particular, the maturity and stability of the local financial markets will have a greater influence on the local currency rating as compared to a foreign currency rating. The indicators used by S&P for arriving at these

[17] Appendix 4.2 is based on materials available from Standard & Poor's.

ratings are described below and applied to all sovereigns rated by this company.

S&P uses four sets of quantitative indicators to evaluate the credit quality of a sovereign. The economic data covering gross domestic product, savings, investment, unemployment and domestic credit in the private sector are measured and compared to other countries. Government financial data covering debt and fiscal performance of the country are also evaluated. Separately, balance of payments data are reviewed using exports, borrowings and financial reserves to determine the ability of the country to withstand economic changes. In order to measure the interaction of government policy on trade and investment activities, the external debt data are analysed as well.

S&P uses eight categories to review in a more qualitative manner the health and flexibility of a sovereign's credit. The rating agency uses political-risk indicators to examine internal and external threats to the country's sovereignty. Income and economic structure, economic growth prospects and fiscal flexibility of the country provide another basis to compare the country's stability. Factors such as the public debt burden and price stability are used to measure historic performance of the economy. Finally, the balance of payments flexibility and external debt and liquidity in the economy give indications of the country's international financial posture.

Use of quantitative and qualitative tools are augmented by in-country research prior to arriving at the SCR. Two countries may have very similar or even identical data, but the rating agency looks behind the numbers to establish its final credit rating. This rating, determined by a committee of company experts, is arrived at by consensus. The established rating is reviewed with the government and published only with the approval of the government.

Project Ratings

S&P's rating approach for infrastructure project companies is based on the established framework for rating loans in the market where ratings are most extensively used – the US corporate bank loan syndication market.

For infrastructure loans, as for other bank loans, S&P uses the same rating approach. Ratings express both default risk and loss severity, and are assigned S&P's established rating symbols:

- "AAA" through "D" for long-term debt.
- "A-1+" through "D" for short-term debt.

For infrastructure loans, S&P does make a distinction in rating approach between the following:

- Corporate-style loans. Generally secured or unsecured debt of ongoing entities such as utilities and transport companies deriving revenue from diverse assets, with flexible issuance covenants.
- Projects and concession loans. Generally debt paid from revenues of one facility such as a power project or an airport concession, with highly structured security and covenant packages.

For corporate loans, S&P follows the approach it uses on all corporate debt:

- First, S&P establishes an issuer credit rating (ICR) or corporate credit rating (CCR) designating the overall capacity of the borrower to pay all of its debts as they come due.
- Subsequently, it assigns an issue-specific rating indicating the credit strength of the specific loan or other debt issue to which the issue rating is assigned.

Infrastructure loans, the other type of limited recourse corporate debt, have the potential to receive issue ratings higher than the CCR based on the three rating factors below:

- Collateral value.
- Timeliness of access to collateral and remedies.
- Overall issuer rating level.

Such elevation is generally no more than two notches above the sponsor's CCR provided that the loan issue is well secured and the project's capitalization has limited leverage.

S&P expects infrastructure corporate issuers located in emerging market countries to generally have limited capacity for elevation because of the following factors:

- Influence of country risk on project vehicle risk. Projects are exposed to two broad categories of risk: endogenous and exogenous. The endogenous risks are those inherent in the project itself, and generally within the control of the sponsor(s) or project participants, i.e., construction, operating, market risk, etc. Exogenous risks are those external to the project, outside the control of the sponsor(s), including foreign exchange availability, currency parity and legal risk. The foreign exchange risk is a key one since all private projects located in a given country have to service their foreign debt by creating demands on the ***country's*** available primary and/or secondary foreign exchange reserves. For this reason, project companies do not receive a rating higher than the host country's SCR. The rationale is that both the project and the sovereign

have to service their foreign obligations from the same pool of foreign exchange reserves. However, there are exceptions to this general rule.[18]

- Limitations in access to cross-border collateral packages. On secured loans, cross-border lenders in one country may have little practical ability to enforce remedies in another, especially in jurisdiction where the established legal system is deficient in addressing lenders' enforcement rights.
- Leverage levels. Corporate infrastructure borrowers are often leveraged at levels too high to permit rating elevation under established guidelines. Average leverage for infrastructure developers on a consolidated basis exceeds 1.5, and for some non-US utilities, leverage is at nearly comparable levels. This generally precludes valuations of collateral at a level high enough to warrant a rating elevation.
- Limitations of holding company security structure. Even where loans are secured, they are often repaid by a holding company, one or more steps removed from the operating assets generating the cash flow required to repay the holding company debt. Moreover, holding company relationships may shift materially over time, especially in non-US markets where parent companies and company groups can be restructured with little or no restrictions. In addition, holding company debt may be subordinated to debt at the level of the operating company.

Intangibles

Securing an SCR for a country makes it possible for developers and sponsor(s) of infrastructure such as oil and gas projects to secure ratings for their own projects from international rating agencies. This evolution will permit the use of a greater variety of international debt instruments, access to wider debt and equity syndication nets (including longer terms), and the possibility of advantageous novel pricing. In the case of infrastructure, these financing benefits will be translated into lower tariffs and greater international competitiveness. Also, better financing terms directly benefit the whole economy of a country by facilitating management of the country's balance of payments.

The trends discussed below describe the different applications for project credit ratings. Project developers seek the widest access to financial instruments in order to secure the best available terms. International banks use

[18] **Up to two notches of elevation above the SCR are permitted for those projects which are export-oriented, involve creditworthy and tight off-take agreements, where sale proceeds are captured by offshore trust accounts.**

SCRs to avoid problems with home country regulators through certification of their portfolios by independent raters. Financial institutions depend on external ratings to avoid problem loans and maximize the opportunity of selling project loans to third parties in the future.

Other benefits of an SCR include:

- Widening circle of loan syndication. Rising project size, along with rising appetite of participating banks for project and infrastructure paper, has led to loan syndication with as many as 100 or more participating banks, with co-financing from multilateral agencies, ECAs and capital market investors. This broad sourcing of debt has helped diversify lenders' exposure, but at the same time, has made it impractical for participating banks and other lenders to control credit risk individually. In particular, the widening circle of loan participation has made it difficult for smaller participants to gain timely access to credit information. The SCR reduces this lack of control by communicating the same information widely and quickly.
- Rising potential for credit volatility. Wider debt sourcing has occurred at the same time that the credit profile of infrastructure loans has become more complex and potentially more volatile. Thus, for many participating banks and lenders, the need for credit information has risen just as their access to this information has declined. The Asian financial crisis highlighted this problem and led banks to look for more effective ways to establish credit levels through recognized, consistent ratings and rating surveillance.
- Rising scrutiny of bank and agency loan portfolios. The Asian financial crisis and continuing pressure on asset quality in the lending portfolios of international banks have led to calls by bank regulators for more complete and independent credit scrutiny of loan portfolios. In addition to hanks' loan portfolios, export credit and multilateral agency loan portfolios with exposure to Asian infrastructure and corporate credits may experience' greater scrutiny, especially should those loans enter into severe or projected non-payment periods. Expanding pressure in Asian and other markets for greater transparency and disclosure has made it difficult to mask credit erosion, especially when it becomes serious.
- Crossover between loan syndication and capital markets debt. While direct investment continues to be important for infrastructure projects, the long-term trend is towards more portfolio-style investment for raising debt capital for infrastructure projects. Banks and institutional lenders have found debt in the infrastructure sector as attractive, on a risk-

adjusted basis, for both yield and duration. Consequently, the traditional distinctions between loans and bonds have blurred with banks buying bonds and institutions buying loans where risk-adjusted yields are attractive.

- Potential for securitization. An important development in infrastructure financing over the next few years is expected to be the expansion of collateralized loan obligations (CLOs) and collateralized bond obligations (CBOs). To develop this funding option effectively, it will be important for lenders to have an objective benchmark to measure infrastructure loan credit quality, such as an S&P rating, before a loan is originated. This benchmark helps price the loan at a level that captures the potential for liquidating the loan through a loan or bond-funding vehicle. For such assessment, credible and globally consistent ratings become a linchpin in the securitization process, because these ratings have standards that can be used across sectors and markets. Ratings are the chief benchmark used in both bond and loan markets, and the main standard designed solely to measure credit risk independently. The SCR for the location of an infrastructure project is a necessary precondition to a loan credit rating.
- Credit-tested pricing for syndicated loans. Increasingly, credit-tested grid pricing is entering the loan origination process in the US and other markets. While many loans continue to be priced off floating interest rate indices (in order to provide recovery of the lender's cost of capital), some loans are now priced to maintain loan-specific credit spreads as well. In such loans, interest rates are adjusted periodically, typically quarterly or more frequently, to reflect the credit quality of the loan. The loan's interest rate is raised or lowered to the extent that the loan's rating is above or below the reference rate on a pricing schedule or grid. For infrastructure loans, this type of pricing can be attractive for both borrowers and lenders, because it gives each an opportunity to tie the loan's price to the project's specific credit strength. Credit-tested pricing permits both borrower and lender to look to risk-based credit ratings, updated throughout the life of the loan, rather than some financial market index that has little correlation with loan-specific risk.

PART II

Project Documents and Support

chapter 5

PROJECT AGREEMENTS

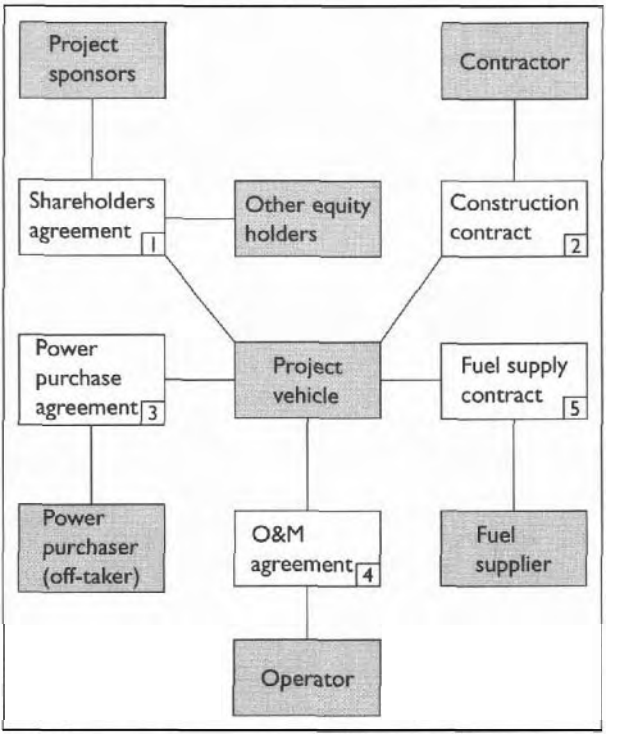
INTRODUCTION

The project agreements constitute the "core" of any Project Financing. Unfortunately, there is no single definition for this term.

Generally, the contractual foundation of a project consists of three classes of agreements: (a) project agreements, including the concession, or off-take, agreement around which all contracts revolve; (b) finance documents, to be covered in Chapters 8–11; and (c) the security documents as discussed in Chapter 12.

The project agreements (referred to variously as project documents or project contracts) are completed during the second stage of the project development process, prior to mobilizing finance and negotiating agreements related thereto. These agreements contain the key technical, commercial and economic understandings related to the project. As shown in Figure 5.1, the document structure for a classic power generation project includes the equity support (shareholders) agreement; off-take (power purchase) agreement, if any; engineering, procurement and construction (EPC) contract; resource supply contract, if any; and the operations and maintenance (O&M) agreement. If the project site is a leasehold, a land lease agreement (LLA) is also included. It is not dealt with in this chapter because its financial impact is relatively low compared to the other agreements. Although there may be exceptions to the rule, an LLA, as opposed to a purchase of land, is preferred by the sponsor(s) because it involves less cash outlay. To this list of project contracts, one would also add the organizational documents of a project vehicle, its licences, as well as permits and consents that underpin the undertaking. This chapter will not deal with the implementation agreement (IA) as a project contract. The IA will be treated as a credit enhancement instrument and dealt with in Chapter 6.

Figure 5.1 Basic Document Structure for a Limited Recourse Power Generation Project'



'Steps:

1. Sponsor(s) forms the project vehicle and enters into a shareholders agreement with other equity participants.
2. The project vehicle enters into a construction contract with the EPC contractor for construction of the project.
3. The project vehicle enters into a power purchase agreement pursuant to which the power purchaser (or off-taker) agrees to purchase the output of the project for an extended period.
4. The project vehicle enters into an O&M agreement with the operator for the operation of the project after its completion.
5. The project vehicle enters into a fuel supply agreement with the fuel supplier who will supply the fuel needed to generate power.

Source: Based on material prepared by US Project Finance law firm of Hunton and Williams, in support of lecture and slide series, February 2000.

A key purpose of all project agreements is to allocate obligations and associated risks of the project to the project vehicle, or its counter-parties, in a legally enforceable manner. Lenders and investors will require that the responsibilities, obligations and associated risks for the development, design, financing, construction, operation, supply and maintenance of a project are appropriately shared and effectively allocated. Typically, provisions in the project agreements require that (a) compensation be paid by the responsible party in the event it does not manage the assigned risk as required; and (b) effective mechanisms are established to resolve disputes fairly, within a reasonable time period, and at reasonable cost.

For an infrastructure project to be successfully developed and financed, each commercial, *political* and force *majeure* (FM) risk must be properly shared and allocated to the party best able to manage it *and/or* deal with its *financial* consequences. This chapter and the next discuss the allocation of these three types of risks. More precisely, Chapter 5 covers the allocation of commercial risks while Chapter 6 augments the discussion by identifying the credit enhancements used to mitigate commercial, political and FM risks, as well as the instruments used to accomplish this objective.

As discussed in Chapter 6, political risks include confiscation, expropriation, nationalization and deprivation (CEND) perils, as well as the effects of war, revolution, insurrection, riots, nationwide strikes, or changes in law affecting the viability of the contractual arrangements or materially changing the economics associated with their execution. Generally, certain political risks are allocated entirely to the off-taker, ceding authority and/or the host government. None of the government participants is relieved of its obligations under the project agreements due to political events that may affect it. If the consequences of a political event are severe enough, the host government, or utility, usually agrees to purchase the project from the sponsor(s) based on a predetermined price schedule. FM provisions, conversely, excuse a party from key performance obligations when it is unable to execute due to events or circumstances that are not within its reasonable control and could not have been prevented through reasonable care. Political FM is different from non-political FM, consisting of natural risks that are normally covered by insurance policies. Non-political FM events may encompass protection against unexpected natural calamities, or even technical problems that disrupt the facility's construction or operation, but fall short of insuring against events caused by a party's negligence.

With regard to the allocation of commercial risks, the specific goals of this chapter are the following:

- Provide an overview of how the suite of project agreements works together to create pre-conditions for raising finance. [2] In this case, the project vehicle, utility and project participants share commercial risks in certain expected ways. At a global level, this type of Project Financing for power generating projects is the most common by far, although lenders in countries such as the US, UK and Australia are moving away from this, by adopting the hybrid model discussed in Chapter 2 used to finance merchant power plants (MPPs).

  From this framework, examine alternative risk-sharing variations that apply as one moves away from the classic Project Finance power generation to other categories of projects.

BROAD OVERVIEW OF CLASSIC PROJECT FINANCE

Project agreements vary from project to project. Project agreements encountered on a power project will, in many respects, look very different from those that define a rail project or a telecommunication financing. Moreover, each project agreement has special provisions found only in that document and none other. At the same time, all contain certain key provisions required by the commercial institutions that provide debt finance.

For all these differences, the risk profile of a Project Finance deal is defined by the contractual framework embedded in the project agreements. Their single most important attribute is the manner in which they allocate risks between and among the various major participants. Given the number of parties with differing interests, risk allocation is made within a framework that reflects the outcome of negotiations and commercial compromise, and one that also takes into account the relevant legal framework. As one might reasonably expect, the project agreements will favour the long-term commercial interests of the project vehicle. Hence, collectively, the contractual provisions will move risk ***away*** from the project vehicle *to*wards one or more major participants. Major participants, however, may refrain from taking on more risk than they are ahle to handle ***by*** creating exceptions to their assumption of risk. In other words, they may generally accept a given risk in most situations but refrain from its acceptance in ***all***

[2] The objective is not to make the reader an expert in the more technical areas of each and every project agreement. That would be well beyond the scope of this hook. Rather, the purpose is to develop an appreciation and understanding relative to "standard" risk sharing found in the project agreements related to a power generation project, while focusing on attributes which create the preconditions for finance-ability.

situations. Lenders spend a great deal of time with their lawyers identifying the implicit or explicit ***residual risks*** assumed by the project vehicle and, therefore, the lenders.

To satisfy the lenders, project agreements must be finance-able. The term, as we use it in this context, has several dimensions:

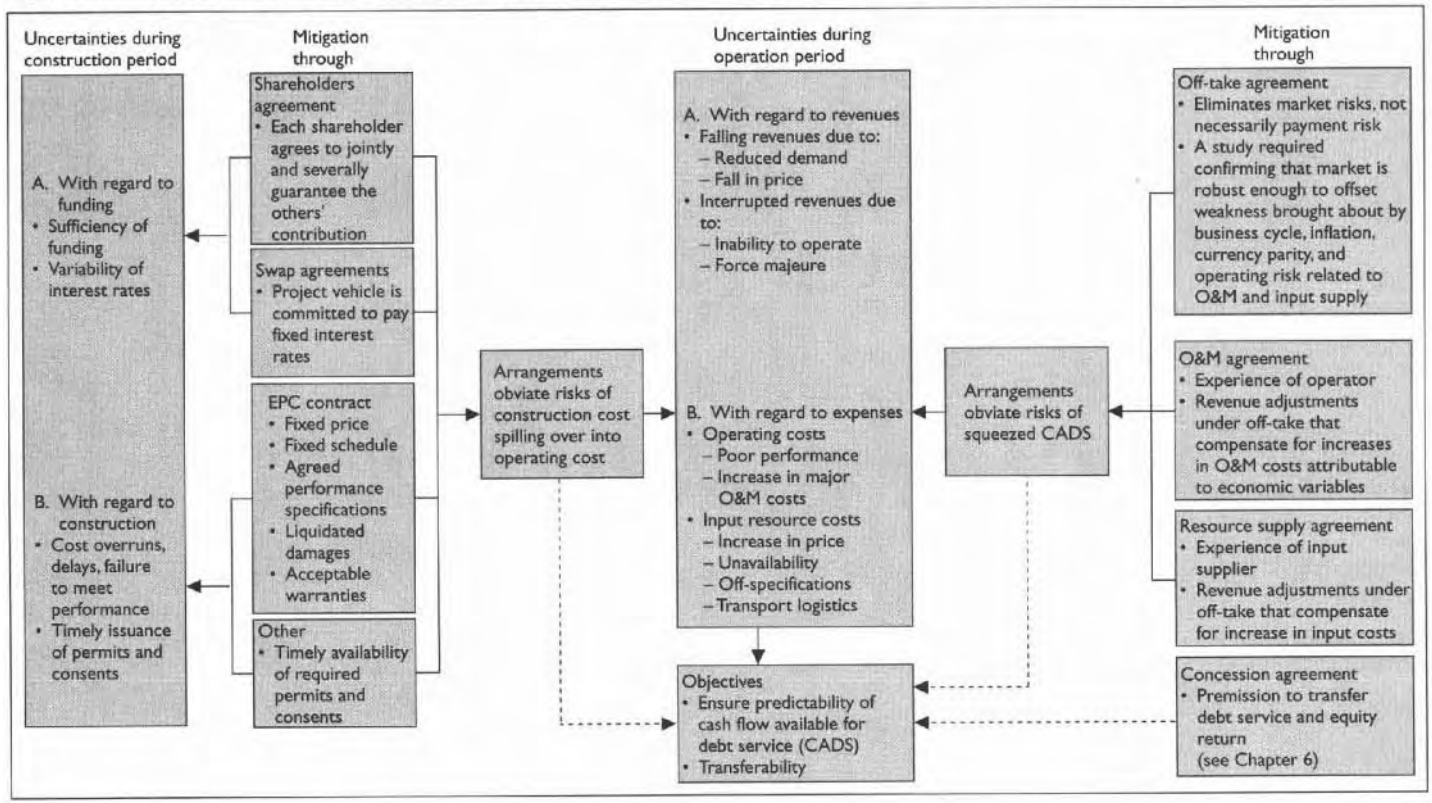
- First, it refers to the acceptability of a project's commercial structure as the basis of a Project Financing. This is a very fluid concept that changes rapidly across host countries, sector(s) of the economy that the project will fit into, and current market practice, as well as lending sentiment. It is also a very ***deal-specific*** concept: what is an acceptable balance of risks for one project may not be acceptable for another project with different strengths and weaknesses.
- Second, the cash flow attributes of the project must be characterized by a high degree of predictability. Lenders hate surprises! As a general rule, they will not accept risks that are either incapable of proper assessment or are open-ended in their effect. Moreover, lenders will want the project agreements to tell the whole story and not be subject to background law that distorts the allocation of risks therein.
- Third, to the extent that there are serious residual risks that have not been completely allocated to a major participant, the sponsor(s) will have to be able and willing to move that risk away from the project vehicle by accepting it.

Hence, experienced project sponsor(s) will negotiate project agreements with the objective of eliminating the major risks for the project vehicle and improving the predictability of its cash flow, otherwise they may be called upon to assume risks themselves. Principles involved in this endeavour are outlined in Figure 5.2 and summarized below. Generally, the sponsor(s), or project vehicle, will strive to:

- ***Negotiate*** a fixed price, fixed schedule for the commissioning of the facility with the EPC contractor as well as appropriate penalties in the form of liquidated damages (LDs) for its failure to perform. The key is to avoid having ***unanticipated*** construction and related financing costs spilling over onto operations. Selected aspects of the LD structure are examined in some detail in Appendix 5.1; while the failure of the EPC contractor to meet the heat rate specification in relation to permitted fuel consumption under the power purchase agreement (PPA)is examined in Appendix 5.2.

  Great care is taken by the sponsor(s), and subsequently the lenders, to prevent the financial consequences of unanticipated events during

Figure 5.2 Role of Project Agreements in Reducing Risk and Improving Cash Flow in a Classic Project Financing



construction from subsequently squeezing cash margins during the operation period. As shown in Figure 5.2, aside from entering into an appropriate turnkey construction contract with a creditworthy party, key objectives in this regard would include ensuring that (a) a sufficient level of funding exists to meet budgeted construction costs; (b) shareholders' commitments to meet equity calls, as required during the construction period, are backed by acceptable letters of credit (L/Cs); (c) contracts are entered into with reliable parties with the purpose of swapping fixed-interest financing for variable-rate financing during the construction period, the objective being to avoid cost overruns due to unanticipated variations in the interest rates; and (d) the project vehicle procures timely permits and consents that obviate unnecessary delays in the start-up of construction or in meeting preconditions for draws under the debt facilities. Good execution in this regard obviates the possibility that construction cost overruns under a turnkey contract may spill over to affect operating results adversely.

- ***Ensure*** an appropriate level of predictable gross revenues for the project over its life, either (a) by entering into an acceptable off-take agreement with a predictable revenue structure as described subsequently in this chapter;[3] or (b) if there is no off-take agreement, and the revenue forecast is subject to price, demand, business cycle, inflation, currency parity and other operating risks, the independent market study should conclude that the concession has a very robust revenue upside capable of largely, if not entirely, neutralizing their effects.

  Hedge to the maximum extent possible against the possibility that cash available for debt service (CADS) may narrow significantly during operations. With an off-take agreement, a common strategy is to negotiate a provision that (a) reasonably covers the fixed and variable costs associated with an experienced operator's management of the facility; and (b) provides automatic adjustment of output price to cover those increases in operating or maintenance costs that are brought about by economic variables over which the project vehicle has no control. For example, in a power project, changes in the costs of operating or maintaining the facility caused by currency depreciation or inflation should bring about corresponding adjustment in the output prices under the

[3]Unless domestic inflation and parity of the currency of the host country are extremely stable, the off-take agreement should neutralize as fully as possible against price, demand and business-cycle impacts on the operating margins. Similarly, if there is significant credit risk associated with the off-take agreement, a credit enhancement should be put into place to neutralize its potential effects.

off-take agreement. Similarly, if the facility requires in large quantities a particular resource input such as fuel, a fuel supply agreement (FSA) should he entered into with an experienced and creditworthy entity that guarantees price, availability, transportation and quality specifications of the feedstock. Ideally, any changes in fuel prices should be contractually reflected in the price paid for by the off-taker for electricity output. Conversely, if no off-take is involved, there should he a demonstrable linkage between market-driven input costs and output prices.

- ***Neutralize*** through insurance policies, as subsequently discussed in Chapter 6, any possibility that natural perils, economic trends or political risks will have unanticipated effects on the project's ability to generate income or transfer dividends.

If the power project has been well selected and the agreements have been properly negotiated, with appropriate hedges, credit enhancements and guarantees put into place, project CADS should be persuasively robust under most reasonably foreseeable circumstances as to ensure an acceptable margin of safety relative to debt service.

ORGANIZATIONAL DOCUMENTS

Memorandum and articles of association are the constituting document(s) which govern a corporation. All projects have constituting documents as required by the statutes of the host countries where they are located. Depending upon requirements, sponsor(s) may wish to supplement these (largely) boilerplate constitutions to incorporate more sophisticated approaches to administration and oversight. Although there is more than one method for supplementation, shareholders agreements are the most common in Project Finance.

Shareholders Agreement

A shareholders agreement is the generic term for any contract between two or more shareholders governing their conduct in relation to the corporation, or partnership, in which they own shares and in the range of corporate activity permitted to them. A shareholder agreement can create voting agreements, voting trusts and other provisions for the governance, ownership structure and management control of a project. It is also used to set forth obligations between and among the shareholders in relation to the project vehicle, establish procedures for their execution, and define remedies in the event that one or more shareholders is unable to comply with their obligations. Finally, such agreement may be used to create processes

for the arbitration of disputes, clarify rights of pre-emption or describe conditions under which the project vehicle would be subjected to a voluntary winding up.

There is no aspect of a shareholders agreement that is unique to Project Finance. Problems associated with a shareholders agreement for joint ventures may be found in a Project Financing. Table 5.1 captures the most common issues and identifies one or more approaches used for mitigation.

Some of the issues listed in the table are best resolved through the project vehicle's constitutional documents rather than a shareholders agreement, a point to take into due consideration on a case-by-case basis.

Areas where the stakeholders, or shareholders, must seek common ground in order to avoid future problems are as follows:

- The project will have credit risk relative to its sponsor(s) during the development period when calls for capital are made, as well as during construction and operation, when calls for base or contingent equity are made. Specifically, this refers to the possibility that one or more of these shareholders will not be able to make a capital call when due. If any capital contribution is to be made during the development or construction periods, each shareholder will have to take a view on the creditworthiness of the others. If there is unease about any particular share-

Table 5.1 Commercial Provisions of Shareholders Agreement

Risk	Mitigation
Credit	The shareholders agreement will frequently require each shareholder to issue a bank guarantee or a letter of credit to backstop their obligations to the project. It will also contain remedies in respect to a failure to perform.
Contribution in kind	Shareholders making in-kind contribution to the project agree to an independent market valuation of their contribution and reimburse the project vehicle if market valuation reveals a deficiency.
Selling out shares to a third party	A "pre-emption rights" clause is included, obligating each shareholder to offer its shares first to existing shareholders before approaching any outsider.
Conflicts of interests	A provision is included, excluding the contracting shareholder from any decisions taken by the project vehicle's Board of Directors in relation to the contract the shareholder has entered into with the project vehicle.
Competition	Shareholders consent to a "non-competition clause", i.e., no one shareholder is permitted to undertake any activity in competition with the project vehicle.

holder's creditworthiness, the agreement will normally require that each party back up his commitment through a standby L/C issued by an acceptable bank. The usual standard is to have such a bank rated at least "A" by an international rating agency.

- Sometimes the only equity contribution a shareholder can make is a contribution in kind. It is often the case that local firms are in a position to contribute real estate required by the project, or some other more intangible assets. Where such a contribution is made by a shareholder, the other parties will be concerned to ensure that an acceptable value is placed on such contribution since that shareholder might otherwise obtain a disproportionate return.
- The issue inevitably arises as to what happens when one party wishes to sell its interests in the project. In this regard, a common provision is to obligate the selling party to offer its interests to the other parties to the joint venture. If the others are not interested, the selling shareholder is then permitted to negotiate a sale with a non-related third party. Under this provision, existing shareholders will have a *pre-emptive* right to the shares, which places them in a position of strength relative to the seller. To avoid abuses, however, if the selling shareholder is not satisfied with the price offered by an existing shareholder, it is usually permitted to identify a third party willing to pay a higher price. The existing shareholder must then match that price or forego its pre-emptive right.
- Where a project vehicle has, or is likely to have, a contractual relationship with one of the shareholders, other shareholders will want to eliminate the contracting shareholder's conflict of interest. Conflicts are likely to be most pronounced when issues in relation to the contract are addressed formally by the Board of Directors. Typically, the issue is mitigated by a supplemental provision (in the shareholders agreement or elsewhere) excluding the contracting shareholder from any discussion, or vote, related to that specific matter.

  An important aspect of any joint venture is that shareholders should be required to pull together towards a common objective. None should be permitted to do anything to undermine the achievement of that objective. This objective is reinforced often by non-competition clauses – agreements by each party to avoid undertaking any new activity that would compete with the joint venture. These clauses need to be carefully considered in the light of applicable laws related to antitrust or monopoly.

Issues Related to Finance

While evaluating a shareholders agreement, lenders will base their judgements on the finance-ability of the project on the following factors:

- Lenders will undertake a thorough review on the shareholders' agreement, as well as the balance of the project vehicle's organizational documents, to ensure that all of the common problem areas are identified and procedures for resolution are addressed. They will also ensure that each shareholder has the authority to enter into a loan and equity support agreement with the project vehicle.
- The general experience and track record of the sponsor(s) with the type of facility under consideration, including its featured technology, is the most important criterion related to finance-ability. The ideal case is one where every shareholder is experienced in the project and its technology, and is seen to he creditworthy for its commitments. At the very least the lead sponsor(s) must have prior experience in implementing similarly sized projects in the country where the proposed project is located, or some other country with similar attributes.
- Proposed structure of project capitalization should meet acceptable ratio of debt to equity in the international markets. Moreover, the proposal should also reflect host country legal or statutory requirements in that regard.
- Ideally, the sponsor(s) enters into an equity support agreement that stipulates that each shareholder, jointly and severally, will provide equity contributions upfront, prior to any disbursement by the lenders under the common terms agreement (CTA). As a fallback, paying an equity contribution over time, or even back-ending those contributions, is acceptable provided that:

  (a) The banks are satisfied with each individual shareholder's creditworthiness ***and*** are provided with a joint and several guarantee instrument from each, effectively backstopping all other equity commitments; or

  (b) Each shareholder delivers a standby L/C from a bank acceptable to the finance parties backstopping its own commitment.

- The sponsor(s) must provide satisfactory cover for cost overruns. Ideally, this is done through a relatively open-ended commitment, referred to as a completion guarantee. Alternatively, the sponsor(s) may negotiate with the lenders to put at risk an agreed level of contingent equity to support the project completion. Chapter 7 discusses the use of Monte Carlo simulation for the purpose of determining the acceptable level of

contingent equity needed. Chapter 9 will probe in some detail issues involved with a sponsor(s) equity support agreement.

- In addition to cost overruns, the sponsor(s) must agree to cover any gaps in insurance coverage, as discussed in Chapter *6,* or for that matter, any significant residual risk that one or more major participants are not willing to absorb.
- Finally, sponsor(s) should not seek to benefit from dividends, prior to the first scheduled principal instalment payment under the loan agreements, nor if there exists an event of default (EOD) under the finance documents.

THE KEY AGREEMENT

The key agreement may he a concession agreement or an off-take agreement.

Concessions can perhaps be usefully described by comparing them to licences. **A** number of key themes emerge in this comparison, as described in Table **5.2.**

In a general sense, a concession agreement is similar to an off-take agreement in respect of the last three points in the left-hand column in Table **5.2.**

Table 5.3 outlines the similarities in approach to risk management arising during the negotiation of concession and off-take agreements. It identifies risk areas and approaches to their management that the two agreements **share** in common. Table **5.4** focuses on the management of market risk in off-take agreements, an area that is not covered in most concession agreements.[4]

Concession and Off-Take Agreements: Similarities

Key provisions addressed by both agreements are as follows:

- Project implementation. If the project is a greenfield, rhe umbrella agreement will set forth a clear, enforceable right to build the project according to defined specifications – including the rights to develop, finance, construct, insure, operate and maintain the facility. Equally, the counter-party in such umbrella agreement will want clear undertakings that the project will be created as envisaged, and that the completed facility will be operated and maintained to the agreed standards.

[4] There **are some types of concession agreements – production-sharing agreements – that are structured to eliminate market risk.**

Table 5.2 Comparison between Concession Agreement and Licence

Concession agreement	Licence
A set of contractual understandings between a concessionaire, central government and, often, the ministry under which the concessionaire will operate.	A special consent or permit that authorizes an entity to undertake some activity.
The host government normally agrees to provide facilitation, incentives and often, credit support to a project. If the project is located in an emerging country, support by government "enhances" the value and creditworthiness of the project.	The host government normally has no role to play in a licence. A licence is issued by a regulator.
Since concessions are contractual, the rights and obligations between the parties constitute regulation through contract. The concession obviates the need for a regulator to regulate the project, at least initially.	A licensee operates under a regulated structure. A concessionaire may also operate under a regulated structure but in cases of conflict between the concession agreement and regulation, understandings formalized under the former take precedence over the latter.
A concession agreement is often referred to as a public-private partnership and may contain understandings related to sharing of risk, setting of prices, or division of profits (through royalties, profit overrides, special pricing arrangements and other similar provisions).	A licence is not a document that purports to share risk, provide incentives or divide profits. It has no purpose other than to serve as a permit. It may implicitly or explicitly contain provisions that condition the continuity of the licence to appropriate performance by the licensee.

- Commercial Outlines. The agreements will address the effective period of the concession; service(s) to be offered; procedures or conditions for renewal of the concession; rights of the parties; implicit and explicit risks assumed by each party; initial tariff structure; ongoing economic regulation of the facility, including service standards; review of initial or subsequent tariff structure as well as the methodology to use in its adjustment.
- Government facilitation. Where government is the counter-party to the umbrella agreement, a number of steps may be identified therein that the latter is willing to take in order to expedite the securing of permit

Table 5.3 Similarities in Approach to Risk Management in Concession and Off-Take Agreements

Risk	Mitigation
Building or expanding a project. The counter-party requires a facility that is appropriately sized for the current market but wishes to negotiate a fixed schedule of expansion in the future without reference to the growth of the market.	This risk is more common with the concession agreement. Lenders have had some bad experiences with mandatory expansions under concessions. In off-take agreements, there have also been instances of off-takers. on a discretionary basis, contracting for more service capacity than the market could accommodate. Lenders, currently, do considerable due diligence in this area and will not finance fixed investment schedules or potential over capacity.
Delay. The concessionaire/project vehicle is not able to complete the construction of the project on time and LDs will have to be paid to the ceding authority.	The concessionaire/project vehicle is allocated this risk but will attempt to offload it to the EPC contractor (see Table 5.5). The structure described in Appendix 5.1 is one way of achieving this objective.
Failure to meet performance specifications. The concessionairel project vehicle cannot meet performance specifications. and the facility is (a) rejected outright by ceding authority; or (b) subject to LDs based on delays and/or off-spec condition of the facility.	The concessionaire/project vehicle is allocated this risk but will offload it to the EPC contractor through formal rights that permit (a) rejection of the facility if materially off-spec; or (b) negotiation of compensatory LDs payment, as illustrated in Appendix 5.1.
O&M. Due to faulty and improper O&M, operating expenses escalate and profits are lower than anticipated.	Concessionairelproject vehicle is allocated this risk and partially offloads the risk to an experienced operator under an appropriate O&M contract (Table 5.7).
Economic regulation/tariff setting. The regulator sets the tariff arbitrarily at a level that is not sufficient to cover cost of delivering service, debt service and profit.	As discussed in Chapter 6, this risk in a concession agreement is mitigated if the regulator is an independent commission. The risk is also mitigated in the project agreement by negotiating to have the tariff reviewed and reset based on objective criteria that are determined in advance. (As described in Chapter 6, the concessionaire1project vehicle may contract for political-risk insurance, specifically"breach of contract" insurance, to mitigate this risk further.)

Table 53 **(continued)**

Risk	Mitigation
Foreign currency availability. Foreign exchange is not available in the country and/or local currency is not convertible when needed for debt service and/or profit repatriation.	The host government is allocated this risk by entering into an IA, described in Chapter 6, with the project vehicle providing a foreign exchange availability guarantee.[5] Some would regard the above as a political risk, rather than a commercial one. Bilateral and multilateral agencies such as export credit agencies (ECAs), Multilateral Investment Guarantee Agency (MIGA) and Overseas Private Investment Corporation (OPIC), and other members of World Bank Group will neutralize this risk by providing guarantees of foreign exchange availability. These arrangements are described in Chapter 6.

and consents. This assistance may make it easier for the project vehicle to meet on a timely basis the preconditions identified by the lenders for drawing rights under the various financing commitments put in place to construct and commission the project.

- Commercial **and** fiscal incentives. Frequently, government will offer a range of commercial and fiscal incentives in order to attract interest in the project. Examples of such commercial incentives include the following:

  (a) With a concession, the agreement may confer an exclusive right to service a particular area, and thereby facilitating the development of more robust as well as predictable revenue forecasts than otherwise might be the case.

  (b) Under both the concession and off-take agreements, holidays on a variety of taxes may be offered, thereby permitting the project vehicle to offer lower priced services to the consuming public than otherwise possible.

  (c) Taken together, the incentives improve the prospects for a successful public-private partnership by enhancing commercial viability while improving the political palatability of the tariff structure.

[5] Some projects in developing countries are allowed to invoice their services in foreign exchange, e.g. airport terminals and port facilities.

Concession, or where applicable, off-take agreements, usually underpin the entire matrix of contracts needed to implement the project. Many of the key provisions of other contracts are driven by their terms.

Issues Related to Finance

Concession ***and*** off-take agreements share certain preconditions related to their finance-ability, including the following:

- Project-related permits and consents should be issued for the duration of the project. In some cases, counter-parties may not be able to grant consents for such long periods. If so, the terms for renewal should be subject to as little variation by regulators as possible. An acceptable mechanic is that the consents should be issued for a ***specified period of time*** and renewed, ***subject to meeting some clear and predefined standard*** of ***operation.***
- Project should not be exposed to the possibility of discriminatory taxation. In developing countries, many infrastructure projects, and indeed other types of Project Finance, are usually awarded corporate tax holidays for a defined period. In industrialized countries, however, lenders will take the risk of a change in general taxes but not the risk that their particular project is singled out for discriminatory taxation.
- Project vehicle's liability for consequential loss from breaching its obligations under a project contract must be capped, not open-ended.
- Project may be terminated early for a number of reasons, including EODs or prolonged FM. In case of termination by either party, compensation is generally tailored to meet the circumstances. However, the minimum termination payment, as explained in Appendix ***6.3,*** should consist of the sum of principal and all interest, including default interest, outstanding to the lenders under the financing documents.

Banks may be prepared to accept various shadings of risk depending on the jurisdiction in which they are dealing and the track record of the various regulators and issuing authorities.

Off-Take Agreements and Market Risk

Off-take agreements are typically long-term ***purchase and sale*** contracts in which a creditworthy purchaser agrees to buy the output of a facility on specific terms over a defined period. An off-take agreement can apply to ***commodity projects*** such as the production of gold, silver, copper, tin, oil, natural gas or coal; ***industrial projects*** such as processing of cut flowers, vegetables, wood, packaged foods, newsprint or medical supplies; *infra-*

structure projects related to power generation, pipelines, telecommunications fixed-line extension, bulk water processing and supply, etc.

PPA

By far, the most common off-take agreement today is the PPA, normally structured as a take-or-pay contract. A PPA is an agreement for the sale of power (usually on the basis of "available capacity" and "net electrical output") between the utility and the project vehicle. This structure serves two important functions:

- It guarantees a market, a cost basis for the power plant and corresponding predictable revenue stream for the power to be produced by the project (thereby allowing the facility to be financed on affordable payment terms and with a reasonable tariff).
- It defines in reasonable detail the rights, responsibilities and obligations of the project vehicle and the purchasing utility through the financing, construction and operational phases of the project.

Under the PPA, the project vehicle agrees to make the contracted level of electricity generation capacity available to the utility (subject to a certain amount of annual outage time for maintenance or other outages) by an agreed date and for an agreed period of time, and the purchaser agrees to pay the agreed tariff for capacity made available to it and the net electrical output dispatched to it. The PPA includes provisions related to the arrangements and mechanics of payments.

Although there are only two parties to the PPA, the responsibilities and obligations of each party under this umbrella agreement must be acceptable to the utility, sponsor(s), investors and lenders to the project and interface properly with other project agreements. In particular, provisions therein related to the allocation of risk must be acceptable to the fuel supplier, construction contractor and the O&M parties. This broader consensus is important because the lenders will require that the risks assumed by the project vehicle under the PPA, which potentially affect its cash flow adversely, be passed through the other project agreements to the appropriate parties. As previously mentioned, the fundamental principle applied is that the party best positioned to manage a particular risk should be responsible for managing it, and the party responsible for the risk should be compensated for its acceptance and be liable (pay compensation) for its failure to properly manage the risk.

The PPA includes protections, incentives and damages designed to ensure that performance is rendered as promised by allocating the risks associated with load growth or shrinkage and fuel price variations to the utility,

while construction, financing and operational risks associated with the project are allocated to the project vehicle. The PPA also includes compensation payable to the utility or tariff adjustments for performance (reliability and availability) not up to contractual requirements.

Other key provisions of the PPA include:

- The firm purchase of capacity and net electrical output at an agreed tariff, assuming that the project vehicle meets the performance requirements in the PPA incorporating:
  - (a) Capacity price, payable per unit of dependable capacity at a level demonstrated through testing upon commissioning of the facility and not less often than annually thereafter. Capacity price is usually fixed at the time of execution of the PPA (or at the time of bid submission if the capacity is procured through a competitive bidding procedure), but some adjustment in the tariff, or in the tariff components, is often allowed at the time of financial closing and periodically thereafter. Capacity price is usually structured so as to include operating expenses, debt service and a return on equity.
  - (b) Energy price, including some form of "pass-through" of fuel cost, payable on each unit of energy dispatched by and delivered to the utility. Energy price will be paid by the utility at the agreed price for the amount of energy actually delivered to the utility. Energy payments are structured to cover fully the risk of fuel price variations since this is an unacceptable risk for the project vehicle to take from the view of sponsor(s) and lenders. Waste fuel or by-product fuel projects may represent an exception to this general rule.
  - (c) Tariff adjustment mechanisms, usually linked to inflation or change in parity between the currency of payment and that of external debt and equity mobilized.
  - (d) Tariff adjustment and damages levied against the project vehicle for delays and poor performance.
- Term of the PPA.
- Project description (includingthe agreed capacity commitment), required completion date and electrical specifications.
- Description of type and location of interconnection facilities and the respective obligations of the parties regarding the design, cost, construction and maintenance of the facilities, and the consequences assumed by the utility of not completing such facilities by the required date (typically some form of "deemed commissioning").
- Invoicing and payment procedures as well as metering requirements.

- EOD, termination of the PPA, rights upon termination, including a right to purchase or sell the project.
- FM provisions, as discussed in Chapter 6, including its impact on performance and payment obligations (as discussed earlier, payment obligations are not excused by FM).
- Testing and commissioning procedures.
- Dispute resolution (including arbitration in a neutral forum and if the government is involved, waiver of sovereign immunity).

Off-Take vs. Other Similar Agreements

Five variations of off-take contracts are seen in practice: (a) hell-or-high-water contract; (b) throughput agreement; (c) cost-of-service contract; (d) tolling agreement; and (e) step-up provision.

Each is discussed below using the take-or-pay as a comparative framework.

A take-or-pay is a contractual agreement in which one party agrees to purchase either (a) a specified volume of output periodically at some defined unit price; or (b) capacity (as is the case with a power generation plant or bulk water supply system) as well as output. With certain exceptions, a typical power take-or-pay arrangement is intended to mitigate those risks described in Table 5.4, related to price, demand, business cycle, capacity relative to market, industry restructuring, inflation currency parity and credit.

Generally, the first of these two take-or-pay arrangements requires the off-taker to buy each month a minimum amount of service (e.g. x million units of output at $y/unit for a minimum purchase of $xy million), or pay the equivalent amount even if the service is not required. Subject to the details underlying the contract, this arrangement leads to a fairly predictable cash flow for the project vehicle, and hence a good capacity to raise debt.

In the second arrangement, typical of power off-take, the off-taker has to purchase capacity, provided that it is dependably there throughout the given period and may buy output if it chooses to. While the dependable capacity of the power plant is available at the contracted level, the off-taker is obligated to pay, and the project vehicle entitled to receive, a capacity payment, usually on a monthly basis. It is from this capacity payment that revenue becomes available to fully cover fixed operating costs and debt service, and to provide a reasonable return on equity. As mentioned, the off-taker may choose to buy net electrical output if required. If it does, the energy price of that output is sold on essentially a cost-pass-through basis.

Table 54 Management of Market Risk in an Off-Take Agreement

Components of market risk	Mitigation
Price, demand, business cycle. Project revenue fluctuates as a result of potential decrease in the price of, and/or demand for, net electrical output due to competition from new entrants, and/or a drop in general business activity.	Off-taker agrees to provide the project vehicle with a minimum level of revenue by purchasing each month over the life of the contract: (a) agreed capacity, as would be the case with power or bulk water supply; or (b) a minimum amount of product or service at an agreed price (gold, silver, coal, etc.). Where an off-take agreement is used to "purchase" capacity, there may be selected instances where the off-taker is excused from paying capacity price. A considerable amount of due diligence is spent by lenders dimensioning the probability of such events occurring.
Too much/too little capacity.	Off-taker generally agrees to take this risk.
Industry restructuring. Project is terminated due to restructuring of the industry in which the project operates.	This risk tends to affect the off-take agreements linked to infrastructure projects such as power and water. Where necessary, off-taker and host government are allocated this risk through an IA with the project vehicle. IA guarantees that if the project is terminated adversely due to such restructuring, the government will compensate the project vehicle by making a one-time termination payment, sufficient to repay outstanding loans. equity, and (usually) some foregone profit.
Inflation. High domestic and international inflation negatively affects local and foreign O&M cost, resulting in lower operating profit.	Off-taker in an infrastructure project assumes this risk by agreeing to index the local and foreign components of output price against an appropriate local and foreign cost index. Hence, increased costs of O&M caused by economic variables aver which the project vehicle has no control will often require an adjustment in output price.
Foreign currency. Foreign currency rises in value with respect to local currency and tariff revenues are inadequate to pay operating costs, debt service and equity return.	Off-taker in an infrastructure project assumes currency depreciation risk by agreeing to adjust output price to reflect the changes in parity between foreign currency, i.e., the currency of debt and local currency.

Table 5.4 (continued)

Components of market risk	Mitigation
Credit. Off-taker fails to honour its contractual payment obligations.	In an infrastructure project, where the credit of the off-taker is in question, host government under the IA backstops its payment obligations. Another method of dealing with this risk is to contract for "contract abrogation" insurance as discussed in Chapter 6.

Hence, a starting point for lenders in assessing the creditworthiness of a power plant project is to determine what situations, within and outside the control of the project vehicle, might lead to an interruption in the capacity payment. For example, an inability of the project vehicle to complete construction of the power plant on its scheduled commissioning date as a direct consequence of the contractor's fault, or its own for that matter, would obviously delay receipt of scheduled capacity price. Since the contracted capacity has not yet been commissioned, there is no reason to expect the off-taker to pay for something that has not been delivered. Similarly, once the plant is commissioned, an inability of the operator to *maintain contracted capacity* in a given month, wholly or partially, could lead to a total, or proportionately partial, interruption in capacity price even if the fault is not entirely that of the operator or sponsor(s). It is the sum total of these potential interruptions, and the probabilities associated therewith that determine the "predictability" and hence creditworthiness of the project. For this reason, the contractual understandings embedded in the project agreements in this regard, along with the skill and experience of the sponsor(s), contractor and operator, become critical elements in assessing this creditworthiness.

- Hell-or-high-water contract. A hell-or-high-water contract is really a provision used to strengthen a lease or a take-or-pay arrangement. In the context of a power plant take-or-pay, it may stipulate generally that there are no circumstances, *regardless* of *their nature*, that excuse the off-taker from paying a specified capacity price. A permitted exception to this general rule is that the off-taker may not be required to pay for capacity until the plant is commissioned and the dependable capacity is certified to exist, *provided that* the risks of delay, schedule and performance are properly allocated to the contractor. This structure might be used, for example, when a large industrial firm organizes a captive power plant to service its needs for net electrical output and seeks financing from the banks to set up the facility.

- Throughput agreement. A throughput agreement is used in connection with an oil or natural gas pipeline financing. Under a throughput, an oil/gas company will be transporting the commodity via pipeline from its source to some destination where it is further treated, or sold to a third party. The project vehicle that is organized to own the pipeline will enter into an agreement with its parent, the oil/gas company, to transport the commodity each month, at a specified price. A throughput requirement may be augmented by a cash-deficiency agreement, also called a keep-well agreement. It obligates the oil/gas company shareholder(s) to advance funds to meet obligations if, for any reason, the project vehicle does not generate sufficient cash to meet its operating expenses or debt service. As is true for the take-or-pay structure with a hell-or-high-water provision, a throughput agreement – augmented by a keep-well agreement – leads to highly predictable cash flow.
- Cost-of-service contract. A cost-of-service contract requires each shareholder to pay its proportionate share of monthly project vehicle costs, in return for a contracted share of project's output. Such a contract typically requires payments to be made on a hell-or-high-water basis, whether or not any product or service is delivered. A full cost-of-service contract would cover operating, administrative and maintenance expenses, debt service and return on equity capital, as well as corporate taxes. As is true for the hell-or-high-water contract, a cost-of-service contract imposes severe obligations on the shareholders except for the construction period during which time certain risks would he laid off on the contractor. This particular structure might be used whenever there are several companies, or industrial hosts, interested in developing, building and operating a power generating plant, or some other facility, designed to service their needs exclusively. A full cost-of-service contract is generally binding on the shareholders under all circumstances – except as may have been noted – and therefore leads to highly predictable cash flow.
- Tolling agreement. In a tolling agreement, the project vehicle levies tolling charges for processing raw materials usually owned and delivered by several project sponsors. At a minimum, the total tolling charges for such a project vehicle will be equal to the total operating costs and fixed charges, including debt service, taxes and profit. The tolling charge payable by *each shareholder* is generally equal to its proportionate share of the total expenses incurred by the project. A tolling contract is similar in structure to a cost-of-service contract. This structure is often used by MPPs, as discussed in Chapter 2.

- Step-up provision. As is true for most of the other agreements described herein, step-up provisions are intended to enhance agreements in cases where there are multiple purchasers of the output (or multiple users of the facility). A step-up provision is often included in the purchase and sale contracts. It obligates all the other purchasers to increase their respective participation, thereby taking up the slack, if one of the other purchasers goes into default. In effect, each of the purchasers co-insures the obligations of the others.

Summary: The Key Agreement

The banks' reaction to the terms of a structured purchase and sale agreement depends to a large extent on the identity of the off-taker, its creditworthiness, and whether it is an arms-length market price arrangement or a pass-through arrangement.

- If the off-taker is a shareholder and is creditworthy, the banks will be concerned to see that the project vehicle is offered true market terms for its product.
- If the off-taker is not creditworthy for its obligations under the off-take agreement, a credit enhancement will have to be put into place, as is discussed subsequently in Chapter 6.
- If the off-taker is not a shareholder but is creditworthy, or its obligations are credit-enhanced, the bank optimizes its position in the following situations:

  (a) In a power project, there is a full pass-through of energy costs in any input contract that involves heavy purchases of fuel.
  (b) Any pass-through of energy costs is effected in matching, or essentially equivalent, currencies so that the project vehicle does not bear any residual foreign exchange risk or inflation costs.
  (c) If the power project is located in a developing country and the off-taker is government-owned, there is an extensive assumption of FM risk by the off-taker. (The assumption of FM risk, however, is rarely total, as discussed in more detail in Appendix 6.2).

COST-BASED CONTRACTS

Three cost-based contracts will be discussed in this section: (a)EPC contract; (b)Resource Supply Agreement; and (c)O&M agreement. The EPC contract and O&M agreement are present in all Project Finance deals involving the construction of a new facility.

A resource supply contract must be incorporated into the project agreements if a project (a) requires large quantities of raw product, or fuel; and (b) if the resource is not abundantly available on the world's markets at a stable price. For example, a fossil-fuel-fired power generating plant would require a resource supply contract involving diesel, oil, coal or gas, etc. to process into electricity.

Construction Contract

Three general types of construction contracts exist: (a) engineering; (b) procurement; and (c) construction. A fourth is an EPC contract covering all three phases of construction, sometimes referred to as a turnkey contract. Because it encompasses all phases of construction, a turnkey provides single-point responsibility for its execution. Under its terms, the contractor accepts full responsibility for delivering to the project vehicle a fully operational facility with agreed specifications (on-spec) by a certain date (fixed schedule) and at a specified price (fixed price). Moreover, contractors will back up their performance obligations under a turnkey with LDs payable for non-performance, as discussed in Appendix 5.1. In return for this arrangement, a turnkey will cost a project vehicle approximately 15–20% more than a conventional construction contract. Despite its higher cost, lenders (and sponsor(s)) prefer the arrangement because of the built-in hedges against price, schedule and performance shortcomings.

In an international Project Financing, a turnkey construction contract is the most important of the cost-based contracts because:

- It is the largest single component of capital cost and will absorb, therefore, the majority of the project vehicle's capitalization.
- Quality and efficacy of the design and construction of the plant will impact on project expenditure and revenues throughout project operation.
- Completion of construction and commissioning by a specific date is often a fundamental condition of the concession or licence. Timeliness, or delay, in completion of the construction will impact on project economics.

Under an EPC, the contractor and the project vehicle are allocated risks based on standard risk mitigating principles. Both the participants have a vested interest to ensure that the project completion occurs on time. As construction proceeds, new risk arises while some of the risks (already allocated to the parties) subside. Most severe among the possible construction risks throughout the construction period are cost overruns, delays in

completion, start-up and testing problems, hidden defaults and contractor payment default.

Table 5.5 provides an outline of the allocation of these risks.

Table 5.5 Risk Management in an EPC Contract

Risk	Mitigation
Cost overruns-The construction of the facility is not completed within the original budget allocated.	The EPC contractor assumes this risk by agreeing to a fixed-price contract.
Delay in completion. The construction of the facility is not completed within the original schedule envisaged, and LDs are payable under the off-take agreement and unnecessary interest roll-up occurs.	The EPC contractor assumes this risk by agreeing to a fixed schedule for the completion of the facility backstopped with LDs.
Testing and commissioning. The facility fails to achieve required performance specifications: (a) is rejected and performance bond is called by the ceding authority; (b) achieves a level of operation that is below specifications but within the acceptable range of performance and LDs are therefore payable.	The EPC contractor assumes this risk by agreeing to deliver a fully operational facility with performance attributes consistent with those that are embedded in the concession or off-take agreement and backs it up with LDs.
Hidden defects. Hidden defects are discovered in the operation of the facility after commissioning.	The EPC contractor assumes this risk by agreeing to a stringent "takeover" test — frequently more rigorous than that imposed by the ceding authority. In addition, the contractor provides a warranty period, sometimes extending over several years, where major defects must be fixed by the contractor as they are discovered.
Contractor default. EPC contractor is unwilling or unable to perform under its warranty period obligations.	EPC contractor agrees to have a certain amount of its contract revenue, usually 5–10%, withheld until it has completed its obligations during the warranty period.
Natural calamity. A natural FM event delays the completion of the facility.	Although this is a form of commercial risk, we defer discussion on this subject to Chapter 6.

Avoiding delays, avoiding cost-overruns and trying to meet performance specifications are particularly important objectives for the project vehicle. If the project takes longer to build than was anticipated, project cost will exceed financing commitments since the roll-up of interest due to lenders will be greater than projected. A project vehicle that is exposed to delays and cost overruns will have to borrow more money at additional cost and/or invest more equity.

The classic construction risk is that of cost overrun, i.e., the threat that the proposed facility will not be constructed within the original budget allocated. Entering into a fixed-price turnkey is the most powerful method available to shift this risk entirely from the project vehicle to the contractor.

A second risk is that of delay in completion. The turnkey will specify a date for the completion of the project work that matches the required commissioning date specified in the off-take or concession agreement. If not met, the turnkey will provide for the payment of LDs from the contractor for any unexcused delay in completing the facility on time. The LDs are set usually at a level that will cover at least six months of delay. Beyond the level of coverage, the project vehicle and the lenders are exposed.

The failure to meet performance specifications during the testing and commissioning is another important risk. Three situations may occur in this regard, i.e., the facility (a) is rejected; (b) achieves a performance level below specifications, within the acceptable range and is subject to LDs; and (c) meets specifications and is commissioned successfully.

Still another source of risk is the contractor's performance during the warranty period. The contractor should give extensive warranty period guarantees. In a power plant operation, the starting position is usually two years for mechanical and electrical works and five years for civil works commencing from the commissioning date. The more rigorous the commissioning and reliability tests, and the longer the warranty period, the safer position the project vehicle is in.

Summary: Construction Contract

The banks' requirements for EPC are predictable. Although there are exceptions as discussed above, EPC arrangements must exhibit the following attributes to be finance-able:

- Completion arrangements that are subject to meeting performance specifications and a fixed schedule generally tied to the scheduled commissioning date under the appropriate off-take or concession agreement with an agreed level of LDs payable if facility is off-spec or delayed. As illustrated in Appendix 5.1, LDs should be payable if completion is not achieved by a fixed date sufficient to meet (a) LDs payable under the other project agreement; (b) interest during construction (IDC) roll-up during the delay; and (c) fixed overhead costs throughout the period of delay. If no delay is experienced, there should be clearly specified procedures for the takeover of the works by the project vehicle from the contractor.
- A lump sum (fixed price)/contract. The contractor agrees to perform the entire contract scope of work for a fixed-price established at the time the contract is entered into, which is final and binding and not subject to escalation or adjustment of any kind other than that specifically provided for in the construction agreement or eventual change orders. The contract should be incapable of being reopened except for relatively few situations and always subject to approval by the lenders.
- Payments to contractor tied to the achievement of performance milestones.
- Single-point responsibility with respect to the whole works. Generally, one single contractor should be responsible to the project vehicle for the execution of the entire scope of works. If the EPC is divided into more than one contract, or if the project vehicle enters into more than one contract (e.g., one for equipment supply; the other for installation, erection and commissioning services), both contractors must provide the project vehicle with a cross-guarantee, under which each agrees to guarantee the other's performance. If one contractor defaults under the terms of its portion of the turnkey, the other must cure the default and ensure the appropriate completion of the contract.

  A full turnkey contract. No aspect of the construction should fall between the cracks. Hence, if the contractor is basing his design on any plans, or data, supplied by the project vehicle, the contractor should be given the opportunity to verify their accuracy and take "ownership responsibility", even though they were supplied, or even prepared by, the project vehicle. Similarly, there must be no subcontractor, or equipment, that is selected by the project vehicle. If such specification exists, the contractor must take responsibility.

- A financially solvent EPC contractor, unquestionably creditworthy for its obligations under the turnkey. If it is not, a creditworthy entity must be found to guarantee the contractor's performance under the contract.
- Pre-completion revenues applied against project's capital expenditures, thereby reducing the amount that needs to be funded by the lenders. For example, a power generation plant may be built in stages where new sources of revenue are realized at the completion of each stage. In that case, revenues above those required to operate the partially completed facility should be applied to the construction costs of the unfinished portion thereof.

Resource Supply Agreement (RSA)

A resource supply agreement (RSA) is executed between an input supplier and the project vehicle for the sale of all of the project's requirements for inputs consistent with its obligations to deliver outputs under the off-take agreement. The input can pose a serious risk during the operating period because each of the key risks, e.g. price, transportation, availability and quality, irrespective of its magnitude, presents a competing demand on the cash flow of the project vehicle. This discussion will consider the example of an FSA.

Lenders prefer that the project vehicle enter into a requirements contract, sometimes referred to as a supply-or-pay contract, with a creditworthy input supplier. A requirements contract allows the project vehicle to purchase feedstock at an agreed price over the life of the contract and to vary the quantities provided that yearly minimum and maximum purchase levels are adhered to. This type of contract gives the project vehicle the maximum degree of flexibility. If the facility is not capable of operation in a particular month, or if the project vehicle chooses not to operate the project, no damages are due to the supplier so long as the yearly minimum purchase requirement is observed. In effect, the supplier takes the risk that its capacity and logistical support are sufficient to adjust to any requirements arising during the course of the project life. The supply-or-pay stipulation enhances the inputs contract by affixing on the supplier an obligation to either supply the commodity based on the requirements of the project vehicle or pay LDs associated with having the latter source the input on a spot terms in the open market.

In a power generation project, the PPA will require the project vehicle to have a reliable supply of fuel through the construction and operational phases of the project consistent with the requirements of the PPA, includ-

ing its tariff provisions. The FSA is the instrument that satisfies this condition by guaranteeing a reliable supply of fuel (gas, oil, coal) to the project vehicle by a commercially acceptable fuel supplier. The fuel supplier may be a private firm, or government-owned or -controlled entity (normally the case in a developing country).

As shown in Table 5.6, the FSA will apportion the risks between the two parties related to credit risk, construction and interconnection of fuel delivery facilities, operational testing responsibilities, maximum supply obligations or minimum purchase obligations, quality specifications, etc.

Table 5.6 Risk Management in a Fuel Supply Agreement

Risk	Mitigation
Credit risk. Either participant is unable to meet its obligations under the FSA.	Both counter-parties are taking credit risk in respect of each other. The fuel supplier expects to get paid periodically for its fuel sales and, often, will require a standby letter of credit from the project vehicle in order to mitigate this risk. The project vehicle is taking a credit risk on the fuel supplier because LDs are payable in the event it is unable to perform. If the fuel supplier is government-owned. its performance under the FSA will often be guaranteed by the host government under the terms of the IA discussed in Chapter 6. If the fuel supplier is a private entity, its performance may be covered by a surety bond, a standby letter of credit or other acceptable instrument.
Construction and cost of interconnection of fuel delivery facilities.	In a captive fuel project, fuel is available at the project site. For example, a project might be built at the mouth of a coal mine, which would not require huge expenditure save for conveyer belt facilities. In other cases, fuel or other input must be transported over a mix of pipelines, railways and roads, and/or from seaports and river docks. Normally, the fuel supplier is responsible for building the construction and interconnection of fuel delivery facilities. If these ancillary facilities are not completed on time, the fuel supplier is liable to pay LDs. This obligation is backed up by a surety bond, standby letter of credit or other acceptable instrument. If government-owned, the fuel supplier obligation will be backed up by the IA.

Table 5.6 (continued)

Risk	Mitigation
Operational testing responsibilities.	Fuel supplier would be responsible for ensuring that the facilities work properly.
Maximum supply obligations or minimum purchase obligations.	Since the fuel supplier is responsible for covering the investment in the fuel delivery facilities, it will be interested in recovering their full cost. It does this by requiring that the project vehicle purchase a minimum amount of fuel every year, and become subject to LDs, if this is not done. It also constrains the project vehicle by imposing a maximum ceiling on the amount it can buy each year. From the perspective of the fuel supplier, this makes the requirements contract more tolerable, with the burden of adjustment shared equally with the project vehicle.
• Price. Steep rise in input prices reduces cash flow available to service debt. • **Transportation.** The disruption in transporting input to the project site impedes the ability of the project to operate. • **Availability.** The input is unavailable or there is a shot-rage of input over the life of the project, making it impossible for the project to operate. • Quality specifications. The supplied input is of lower quality and off-spec, creating damage to the facility and eventually cessation in operation of the facility.	Price, transportation, availability and quality specifications are allocated to the input supplier under the terms of a requirements contract. The supplier must deliver the commodity at the agreed price regardless of what happens to its availability or price, transport the input to a designated spot within the facility, and pays LDs for any failure to deliver or any rejection as a result of off-spec quality. The LDs for breach are sufficiently large to enable the project vehicle to purchase the input on the open market on a spot basis.

The project vehicle agrees to pay for fuel delivered by the fuel supplier at an agreed price, appropriately escalated over the life of the project, so that fuel cost under the FSA and the price paid for energy under the PPA

adjust together. To enhance the credit risk involved, the fuel supplier may require the project vehicle to issue a standby letter of credit covering its monthly purchase under the FSA.

To the extent that a fixed-price contract is not available, other risk-mitigation strategies are employed. For example, the project vehicle could negotiate that the fuel cost be subordinated to debt service payments. Alternatively, through a tracking account mechanism, payments above a certain amount could be deferred until all debt is repaid. Finally, if economical to do so, the project vehicle could purchase the entire amount of fuel it will need over its project life in advance.

The fuel supplier (gas and oil) will typically be responsible for providing all facilities necessary to interconnect and test its fuel delivery system with the fuel transport system of the power project. Interconnections must be built early enough to enable fuel to be available for testing of the project. If the interconnections are not in place early enough, or fuel is not made available as agreed, LDs would be payable by the fuel supplier, or if government-owned, deemed commissioning may be held to have occurred.

During the operating period, the fuel supplier will agree to make a maximum quantity (daily, monthly and/or annually) of fuel, with defined minimum and/or maximum quality specifications, available to the project vehicle by an agreed date and for an agreed term. The fuel quality specifications must satisfy the fuel quality requirements related to the equipment manufacturer's warranties. If the fuel supplier fails to deliver, or delivers fuel that is off-spec and rejected, it will usually be required under the terms of the FSA to pay LDs that are sufficient enough to permit the project vehicle to buy on-spec fuel in the open spot market.

The FSA may contain minimum quantity purchase obligations on the project vehicle intended to permit the fuel supplier to recover its fixed capital investment, i.e., the costs associated with the fuel transport delivery facilities. The minimum quantity cannot be so large as to affect the dispatch flexibility of the utility power purchaser. Because the project vehicle is not able to insure against interruptions in fuel supply and adequate supply of fuel may not be available from other sources, the project vehicle (and lenders) may require a limitation on the length of time that the fuel supplier is excused from performance due to FM.

Summary: Resource Supply Agreement

The main issues for the banks in a resource supply agreement are those that will also preoccupy the project vehicle:

- Security of supply, remedies for unwarranted interruption of supply, and the general creditworthiness of the supplier to stand behind its obligations to supply-or-pay.
- If relevant, the fierceness of any minimum take-or-pay obligation imposed on the project vehicle. The minimum purchase obligation must be consistent with a number of variables – the supply and demand situation in the country, the standing of the plant in the merit order, criteria used by the dispatcher to bring generation on line, etc.

As is discussed further in Chapter 6, the lenders will expect a high degree of overlap between the supply contract's definition of FM and that contained in the other project agreements.

O&M Agreement

A project sponsor(s) has the option of being the operator for the project vehicle pursuant to a technical services agreement or having this function performed by someone else. Since lenders prefer third-party operation, the discussion below will assume that the O&M of the project is often done by an arms-length participant.

The services of the operator in an O&M agreement are usually identified in three phases: mobilization, pre-operations and operations. As shown in Table 5.7, the agreement apportions operating risks between the operator and the project vehicle for obligations related to O&M contract approval by the host government; training of the workforce; acceptance of the facility; enforcement of its warranties; undertaking of responsibility for acceptable and efficient performance thereof; maintenance of permits; drawing up and observation of budgets for operations and for routine and major maintenance; and ensuring input availability.

The host government and the lenders normally will have to approve the O&M contract before it can be implemented. In reviewing the contract, the host government may be concerned primarily with whether the project will operate as planned and comply with all laws, including environmental and safety laws. In contrast, the lenders may focus primarily on whether project revenues will be sufficient to repay their investment with interest, and the sponsor(s) may want to assure itself that the project revenues will be sufficient to provide a reasonable rate of return. To satisfy themselves, government, sponsor(s) and lenders will want a minimum performance standard defined in the O&M contract. A performance standard should be simple, designed to facilitate monitoring.

After completion of construction and initial start-up and testing, the operator should be required to inspect and certify that the facility meets the

Table 5.7 Risk Management in an O&M Agreement

Risk	Mitigation
Approval by the host government of the O&M contract.	In an infrastructure project, responsibility for securing host government approval (particularly in an emerging country) of the O&M contract usually rests with the project vehicle. The host government is more likely to rigorously review the O&M contract where it has a residual ownership stake as would be the case with a build-operate-transfer (BOT) project. A routine and relatively common requirement by the host government is the right to approve the nationality of the operator, usually for national security reasons.
Training of the workforce.	The operator is assigned this responsibility.
Facility acceptance and takeover.	The operator is usually allocated this risk by being mobilized prior to the end of the construction period to permit its active participation in the testing and commissioning of the facility pursuant to the project agreement or the EPC contract. It is the operator who usually agrees on the approval of the testing procedure under the EPC contract.
Enforcement of project warranties.	The operator assumes this obligation. It would be its job after commissioning to ensure that there are no hidden defects in the plant and/or to enforce remedies vis-a-vis the EPC contractor for latent defects during the warranty period.
Maximizing facility performance.	This issue is usually negotiated between the project vehicle and the operator and memorialized in the O&M agreement. The most common arrangement is a cost-plus fee. Lenders usually are quite interested to ensure that the operator has adequate incentives built into the contract to maintain the facility at its optimal operating capacity.
Maintenance of permits. access to the site, feedstock or fuel needed for operations, utilities and waste disposal.	This obligation usually belongs to the project vehicle, although the lenders will usually want to keep this to a bare minimum. Any failure to perform on the part of the project vehicle could excuse performance of the operator.

Table 5.7 (continued)

Rick	Mitigation
Operating and routine maintenance budget. If the project is operated inefficiently, O&M cost overruns might result, reducing operating cash flow and therefore debt service cover and dividends.	The operator is allocated this responsibility and backs it up with LDs. However, these LDs are not as comprehensive in impact as EPC LDs. Thus, sponsor(s), and beyond that, the lenders share the residual risks.
Major maintenance budget. Major O&M expenditure exceeds the amount built into the major maintenance reserve, causing a dip into the operating cash flow and a reduction in the debt service cover.	Manufacturer is usually allocated the cost of major maintenance if the machinery is new or untested, and the actual costs exceed those estimated by the manufacturer. If the operator is allocated this risk, it will expect its total compensation package to reflect this additional risk.
Input unavailability. The input is unavailable or there is a shortage of input over the life of the project. hindering project's revenue generation and debt servicing absorption capacity.	Only rarely is a project vehicle allowed to undertake this risk, except in cases where the raw material or fuel input is readily available and can be purchased at historically stable prices. If this is the case, the operator will be responsible for ensuring resource input availability. However, where the operator is not specifically allocated this responsibility due to the presence of a resource input supplier, the operator remains responsible for anticipating any special difficulties that may arise in the supply of inputs, or their transportation. The reason for this is to minimize disruption on the operation of the project. The operator could be subject to LDs if it does not perform this function adequately.

required performance specifications guaranteed by the construction contractor. It should also have the responsibility for obtaining and managing any warranted work as a result of defective construction or equipment. Since the operator has the responsibility of operating the facility, it is in the best position to determine whether or not it has been built to perform properly. Hence, it is usually in the best interest of the project to have the operator involved in the project from the outset.

In a power plant, the performance standard should be set in relation to operating capacity, while in a toll road project, it may be set to minimize the percentage of lost revenue from missed or uncollected tolls. To ensure good performance, there should be provisions for giving incentives to the operator under the O&M agreement. There are several options available to compensate the operator for its services. They include fixed-price, cost-plus-fee and performance-based compensation. In a fixed-price contract, the operator will receive a flat fee for providing its services. While this option represents the lowest risk alternative to the project vehicle, it is usually appropriate only where both scope and magnitude of the service to he rendered can be predicted with some accuracy and is unlikely to fluctuate. A more common arrangement is a cost-plus-fee contract. "Cost-plus" could include (a)consurnables necessary for the operation and maintenance of the facility; (b)costs of any third-party contracts being administered or entered into by the operator; and (c)cost of the operator's employees. The "fee" is either a fixed percentage, a percentage tied to performance or a combination, thereof. The fee can also be tied to specified criteria to create a performance-based incentive for the operator to provide the best available service. Fee increases for superior performance can be coupled with LDs for poor performance. These arrangements are particularly useful when the operator is an equity investor in the project vehicle with a significant stake in the success of the project.

During the operating period, there are three major concerns for the operation of a facility: (a)supply of an input; (b)demand for the product or service; and (c) the delivery of the product or service. For a gas-fired plant, the operator will need a steady supply of gas to feed into the turbine to produce the power, a market for the power and a network of transmission lines for distribution. The loss of any one of these components would render the project incapable of performing its function. While the operator cannot be responsible for maintaining a fully functional gas industry in a given country or situation, it must nonetheless remain knowledgeable about the developments in supply of fuel and its transportation in order to anticipate and *minimize disruptions*. For a toll road operation, however, a key issue for the O&M agreement is to define responsibility for attracting users. The operator may be responsible for marketing but unless compensation *is tied* to increased use, it would not have as much incentive as it would have for the project vehicle to perform this function. For example, while the installation of an automatic vehicle identification system may be an attractive investment for the project vehicle (because it streamlines access to the road and increases the number of users), the operator would have little incentive to make such an investment from its own funds unless

it were paid bonuses for increased traffic. With respect to service delivery, both the toll road and power plant operators should be held responsible for keeping their facilities in good repair, at full efficiency and with minimal disruptions in service.

Scheduled or preventive maintenance, as well as minor repair work, is likely to be the full responsibility of the operator. If the project vehicle purchases equipment that requires vendor maintenance, the agreements thereto should be negotiated in consultation with the operator and then assigned to the operator. Such an assignment will keep the project vehicle out of potential disputes between the operator and the vendor, and preserve the integrity of the O&M structure. If, conversely, a vendor under contract with the project vehicle is made responsible for the proper functioning of equipment, a problem can arise when the performance guarantees cannot be accessed because of bankruptcy or dissolution of the vendor. The structure of the O&M contract with regard to (a) responsibility for equipment failure or replacement and (b) capital improvements must be carefully negotiated. If the operator is to take the risk and responsibility for these events, it will expect more compensation than had these functions stayed with the project vehicle.

Summary: O&M Agreement

The major concerns for the banks correspond with those of the project vehicle and are as follows:

- The operator should be given proper incentives to run the project properly and efficiently in order to maximize the project vehicle's profit.
- Conversely, the operator should be subject to tough penalties if certain operating budgetary targets are not met.
- The banks should be able to remove (or bring about the removal of) the operator for poor performance.
- If the operator is the sponsor(s), or a stockholder in the project vehicle, a contract must be drawn up between the parties that reflects arms-length negotiations and agreements.

VARIATIONS OF THE CLASSIC PROJECT FINANCE STRUCTURE

This section and Chapter *6* discuss the common variations to the classic Project Finance structure discussed earlier. Depending on circumstances, these variations create additional uncertainties for lenders in assessing the predictability of revenue, construction costs, resource supply costs and operating costs. Specifically, this section discusses basic variations in cost-

based contracts that have proved to be acceptable in the market; while Chapter 6, among other things, describes the variations in revenue structure and the credit enhancements used to manage revenue risks.

We will turn first to a discussion of the cost-based contract variations.

EPC Contract Variations

Currently, the most common practice is for lenders to agree to share construction risks with the project vehicle. When lenders assume this risk, mitigation typically is in the form of a fixed-price, lump-sum, fixed-date EPC contract with substantial LDs, as described in Table 5.5 and Appendix 5.1. Usually the LDs will protect lenders and project vehicle for some, but not all, of the more extreme outcomes.

The sponsor(s) is normally required to contribute contingent equity to the project to cover cost overruns. Stronger projects have full completion guarantees provided by sponsor(s). When the sponsor(s) provides a full completion guarantee, it accepts all risks associated with the completion of the project, regardless of its cause or the inability of the turnkey contractor to mitigate the problem with LDs or other remedies. If the palliatives that are built into the turnkey contract are insufficient, the sponsor(s) must provide additional equity and working capital into the project in order to complete it.

There are variations on how this is done. Some sponsors simply issues a performance bond or a letter of credit (L/C) covering their obligations to complete the project; others use other mechanisms. Hopewell Holdings of Hong Kong, for example, undertook to build the coal-fired power station at Shajiao, China, and the diesel-fired Navotas I project in the Philippines under a fixed-price turnkey contract establishing single-point responsibility through one of its own companies. Through a subsidiary, the sponsor entered into a turnkey contract with each project vehicle. It then "hedged" its risk by negotiating in each case with a consortium of equipment suppliers and contractors for guarantees, warranties and other cover that would backstop its commitments under the EPC. Sydney Harbour Tunnel (Australia) and the Dartford River Crossing (UK) are examples of projects where the sponsor(s) entered into similar arrangements. In all these cases, the sponsor(s) through its own construction subsidiary, provided the single-point responsibility that is ordinarily undertaken by the EPC contractor.

Depending on the complexity of the works, other approaches have proved acceptable to lenders. The Euro Tunnel is an example of a construction contract where the project vehicle, and therefore the lenders, assumed certain construction risks and arranged a standby facility for cost overruns. The following describes the arrangements:

- Approximately half the onshore construction works, i.e., the terminals (in the UK and France) and the equipment, were under a fixed-price contract.
- However, the offshore tunnelling works were entered into on a target cost basis, with adjustments in cost permitted depending on progress or obstacles encountered.
- Rolling stock was contracted under a tentative cost target, adjustable under certain circumstances.

In a well-publicized series of events, the Euro-Tunnel experienced severe cost overruns primarily due to spiralling tunnelling works and had to be refinanced. Standby financing for cost overruns mobilized at financial closing by the sponsor(s) to cover contingent overruns proved to be insufficient.

A similar structure, with happier results, was followed in Hong Kong Harbour for the very large Asia Container Terminals Limited (ACT), a container port facility. Traditionally, contractors in Hong Kong have been reluctant to take on fixed-price risks for complex undertakings involving dredging and filling in of large areas of reclaimed land. This posed a problem for the sponsor(s) and lenders involved in the ACT project.

Lenders ultimately reasoned that the risk was manageable based on a number of factors including (a) previous good experience with contractors in Hong Kong that were engaged in similar, major projects, all of which were built on time and within budget; (b) a tender held by the project vehicle for the purposes of selecting the EPC contractors, with price quotes requested on a ***remeasurement*** basis, i.e., unit costs were fixed but quantities were allowed to vary, which mitigated a portion of the risk; (c) cost estimates of the project were made by an independent and respected third-party engineer, which served as a verification of the total cost estimates submitted by bidders; and (d) relatively large amounts of contingent financing were set aside by the sponsor(s) to cover risks of delay and cost overruns.

Resource Supply Agreement Variations

A number of RSAs exist in practice, some of which are used in Project Finance. These are referred to as (a) fixed amount; (b) dedicated reserves; (c) output; (d) spot; and (e) firm vs interruptible.[6]

[6] **See Hoffman, Scott *L.*, *The Law and Business of International Project Finance*, Kluwer Law International, 1998, p. 309.**

- Fixed amount. Input contracts may involve the supply and/or transportation of fixed amounts of input. Under this contract, the supplier agrees to supply and/or transport a specific amount of the needed input to the project, and the project vehicle agrees to purchase a specific amount of this at a defined price. Although the contract provides both *parties* with certainty, it *leaves* no room for changes to the amount available or required. While it may be suitable for certain financing situations, this type of agreement is not a useful contract for a power plant operation whose dispatch may vary considerably from period to period.
- Dedicated reserves. In certain situations, as discussed previously, where the project feasibility is particularly sensitive to input costs and supply or transportation availability, the supplier is required to set aside input reserves for use only by the project. Examples include coal and gas reserves. It is not unusual for the reserves in such case to he purchased in advance.

  Output. An output contract requires the supplier to supply and sell to the project all of its production or output, or all of its production or output from a specified source. In effect, the specified source becomes a captive of the project. This may be the case in a mining project involving a coal deposit and its linkage to a power generation plant. Unless an independent study is done relative to exploitable reserves, there is no assurance for the project vehicle that the output will be sufficient to service rhe requirements for the facility.
- Spot. Under a spot contract, the project vehicle agrees to purchase supply and/or transportation services on the terms available in the market at the time of the purchase. This type of contract does not provide the cost predictability necessary in some project situations.[7] However, lenders permit this arrangement where global supply of the input is abundant and price as well as transportation availability is not volatile.[8] In cases where spot contracts are used, the responsibility of ensuring supplies of critical input is imposed on the project operator.
- Firm **vs.** interruptible. A firm contract requires that some input, such as fuel, he supplied and transported to the project without interruptions in favour of other customers. An interruptible contract permits the fuel

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[7]Some utilities, such as National Power Corporation in the Philippines, reimburse independent power producers (IPPs) the cost of power based on its spot price, rather than on a long-term price structure.

[8]When this is not the case, lenders may require the sponsor(s) to hedge the price of the input in the forward markets, if long-term hedges are available or, otherwise, to provide a cash-deficiency guarantee if the price of the commodity exceeds a defined ceiling.

supplier to favour the needs of firm contract holders. Although there are differences in cost of input, lenders would generally prefer a "firm" over an "interruptible" provision when such arrangement is employed. However, a project vehicle would enter into an interruptible contract and save money, if it can (a)stop operations temporarily without paying damages under the off-take; (b)shift to different sources of supply due to abundance of suppliers; or (c)as part of a supply strategy, use this variant in combination with others to create redundancy, and therefore more certainty in supply.

O&M Agreement Variations

Apart from the third-party operator, there are other methods for structuring the project vehicle O&M agreement: (a)the project vehicle can perform the O&M itself; (b) it can enter into an O&M agreement with a related third party, e.g. one of its shareholders, or its affiliate; or (c)it may share the O&M with a third party by entering into an agreement with the third party to provide a workforce and/or maintenance.

Lenders generally prefer arms-length, third-party arrangements; however, this is not a strict requirement. When a shareholder provides O&M to the project vehicle, care is taken to avoid all conflict of interests.

Review Questions

1. Define project agreements. Collectively, what role do they play in Project Financing?
2. Explain the term finance-ability *of the* project agreements.
3. What are the three broad categories of project agreements?
4. What is the overarching general risk-sharing principle under the project agreements?
5. Compare and contrast between a concession and an off-take agreement.
6. Identify the credit risk assumed by each of the following project participants:
   (a) Shareholders.
   (b) Project vehicle.
7. Identify two major construction risks.
8. Explain the lenders' preferences for:
   (a) An off-take agreement structured around the take-or-pay provision.
   (b) A turnkey EPC contract.
9. In what ways are the off-take agreement and EPC contract linked?

10. When is an RSA not needed?
11. What are the four ways an O&M agreement is structured?
12. What special role do LDs play in project agreements?

APPENDIX 5.1
DETERMINING ADEQUACY OF LDS

Overview

Liquidated damages (LDs) are damage penalties provided by the parties in advance as a genuine pre-estimate of loss for a failure to perform. LDs are generally payable for failure to (a)achieve certain performance parameters, i.e., performance LDs (PLDs);and (b)meet time-bound performance milestones, i.e., delay LDs (DLDs).

In an EPC contract, PLDs compensate the project vehicle for increased operating costs associated with the failure of the contractor to meet the agreed-upon performance criteria. PLDs in such a project may be typically payable for:

- Achieving a net dependable capacity lower than the guaranteed capacity under the EPC contract.
- Achieving a heat rate that is inferior to the one guaranteed in the EPC contract.

PLDs are also referred to as buy-down LDs since they are used to pay down project's debt to offset the expected decline in net operating cash flow, and are set at a value that will allow the debt service coverage ratio (DSCR)to remain unchanged. It is important to clarify the concept here. A shortfall in net capacity output will mean a downward adjustment in capacity payment. Therefore, other things being constant, a shortfall in dependable capacity will reduce the DSCR, given that:

$$\text{DSCR} = \frac{\text{Cash flow available for debt service (CADS)}}{\text{Debt service (Principal + Interest)}}$$

By the same token, if the plant achieves a heat rate that is less efficient than the guaranteed heat rate under the EPC contract, the project vehicle will incur higher fuel expenses and end up with lower CADS than anticipated.

On the other hand, DLDs are payable for increased cost to the project vehicle resulting from failure to achieve the takeover date guaranteed in the EPC contract.

DLDs under an EPC contract are usually tied to a number of issues, such as (a) DLDs payable by the project vehicle under the PPA; (b) LDs payable under other project agreements, e.g. the Gas Supply Agreement (GSA); (c) roll-up of IDC and other financing costs during such delayed period; and (d) fixed O&M costs.

Usually, there is a cap on the amount payable by way of PLDs, a cap on the amount payable by way of DLDs, and an overall cap on the aggregate amount payable for all LDs (whether for PLDs or DLDs). Aggregate LDs are often **10–15%** of the contract price for many gas pipelines, for example, while as high as 35–40% for longer gestation and more technically complicated coal-fired power generation projects.[9]

LDs are typically assigned to lenders as a part of their security package, and are often backed by a performance bond or a letter of credit if the creditworthiness of the contractor is questionable.

The following discussion focuses on both types of LDs, i.e., DLDs and PLDs, and presents an analysis for determining adequacy of LDs under the project documents.

Adequacy of LDs: An Analysis

Assume a **450** MW, US$300 million power project, financed on a debt-equity ratio of **3,** i.e., with US$225 million in debt and US$75 million in equity. It has a project life of **20** years. The project construction period is guaranteed by the EPC contractor to be **24** months from financial closing. Required commercial operations date (RCOD) under the PPA is also **24** months from financial closing. Now, further assume that the loan has a life of **15** years with a grace period of four years. The annual interest rate on loan is **12%.** The project vehicle incurs fixed O&M costs of US$9,000 per day during construction.

Two types of LDs are stipulated under the PPA and payable by the project vehicle for failure to meet (a) the project timeline; and (b) contracted capacity.[10] It should be noted that PPA generally does not specify explicit LDs for failing to achieve a specified level of plant heat rate. The project vehicle is worse off to operate with a less efficient heat rate. Since the heat rate determines the fuel consumption, which is a major component of energy payment, an operating heat rate that is less efficient than the PPA heat rate will lead to a shortfall in fuel cost reimbursement, i.e., the

[9] **See Ruster, Jeff, "Mitigating Commercial Risks in Project Finance", The World Bank-Private Sector (www.worldbank.org), Note *69*, February 1996.**

[10] It **is imperative to note that PPA also envisages LDs that are payable by the off-taker. For example, PLDs may be payable by the off-taker if it is under the obligations to provide interconnections to the project but fails to do so. Similarly, DLDs may also he payable if the off-taker defers a testing and COD is delayed as a result.**

project vehicle will spend more on fuel than it will get reimbursed by the utility under the PPA.[11]

LDs profile for the above example, typical of a gas-fired power project, and its analysis are described in Table A5.1.1.

Table A5.I.I **LDs Typical** of a Gas-Fired Power Project

Project agreement	Profile of LDs
PPA	• Delay If COD does not occur by the RCOD, the project vehicle pays to the utility: US$45,000 for each day of delay *DLDs Cap: US$30* million (i.e. approximately 22.22 months of delay, calculated thus: $30,000,000 ÷ $45,000/per day ÷ 30 days) • Contracted Capacity If the dependable capacity of the project is less than the contracted capacity, the project vehicle pays: US$1,000 for every kilowatt (kW) shortfall *PLDs* Cap: *US$4.5* million (which covers a shortfall of 4,500 (= 4,500,000 ÷ 1,000) kW. Note that plant capacity tariff is based on the contracted capacity of 450 MW. Therefore, if the dependable capacity of the plant falls short of contracted capacity, the project vehicle will receive lower capacity tariff, calculated as: Capacity Tariff = (Dependable Capacity ÷ Contracted Capacity) x Reference Capacity Price (although there is no upward adjustment for a plant achieving a dependable capacity above the contracted capacity).
EPC	• Delay If takeover date does not occur by the required takeover date, the contractor pays: US$170,000 for each day of delay *DLDs Cap: US$30.6* million (which covers a delay of 6 months, calculated thus: $30,600,000 ÷ $170,000/per day ÷ 30 days. If the commercial operation is delayed beyond the guaranteed period, the project vehicle would have the right to reject the facility.

[11] This is because many PPAs are structured to have a tariff consisting of two broad elements: capacity component and energy component. Energy payment includes fuel expense, which subject to a reference heat rate, is a direct pass-through. Therefore, if the project vehicle achieves a plant heat rate which is less efficient than the reference heat rate, it will be reimbursed a lower amount on account of fuel expense. See Appendix 3.1 for a fuller understanding of tariff.

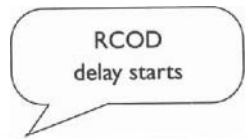
Table **A5.1.1 (continued)**

Project agreement	Profile of LDs
EPC	• **Contracted** Capacity If the dependable capacity of the project is less than the contracted capacity, the contractor pays: **US$1,790** for per kW shortfall *PLDs Cap: US$24* million (which covers a shortfall of approximately 13,408 (= 24,000,000 ÷ 1,790) kW or 13.4 MW. If the plant achieves an initial dependable capacity below 436.6 (= 450 – 13.4) MW, this will constitute an event of default under the EPC and the project vehicle will have the right to reject the facility.
GSA	• **Minimum Gas Purchase** In addition, under the GSA the project vehicle has to pay LDs to the gas supplier for failing to consume minimum amount of fuel after scheduled COD (which is same as RCOD under the PPA) at the following race: Minimum daily amount of consumption: 31,000 million standard cubic feet (MSCF) Gas price: US$1.117/MSCF LDs per day: **US$34,627** (= 31,000 x 1.117) Cap: Not *applicable*. Per day LDs rate will apply so long the project vehicle fails to consume the minimum amount of gas.

Mismatch of DLDs

Since lenders require that LDs cover at least a six-month delay in commissioning, the analysis shown in Table **A5.1.2** attempts to determine whether the profile of LDs supports this objective. The analysis shows that the project vehicle can adequately support six months of delay from the LDs proceeds received from the EPC contractor. In fact, the LDs profile supports about six months and seven days of delay from scheduled commissioning. However, if such a period is extended further, this will require a call on additional support from sponsor(s). Alternatively, the EPC contract can be terminated and the contractor would be liable for 100% refund of the EPC price.

Table A5.1.2 Analysis of Mismatch of DLDs (in US$)



0–24th month	25th–30th month		31st month onwards
Construction period (provided by EPC to be 24 months from financial closing)	DLDs received under **EPC** (beginning cash balance) [180 days @US$170,000 per day]	US$30,600,000	Beginning cash balance: $1,147,140 This cash balance is sufficient to cover additional 7 days of delay, calculated thus: [1,147,140/(29,452,860*/180)] *29,452,860 = 30,600,000 − 1,147,140
	DLDs payable under **PPA** [180 days @US$45,000 per day]	(8,100,000)	
	LDs payable under **GSA** [180 days @US$34,627 per day]	(6,232,860)	
	IDC during delay [US$225,000,000 x 0.12/2]	(13,500,000)	
	Fixed O&M costs [180 days @US$9,000 per day]	(1,620.000)	
	Ending cash balance	1,147,140	

Mismatch of PLDs

Under the EPC, the contractor will pay LDs to the project vehicle at a rate of US$1,790 per kW shortfall of output below 450 MW. On the other hand, under the PPA, the project vehicle is obliged to pay to the off-taker as LDs an amount equal to US$1,000 per kW of the shortfall below 450 MW up to a maximum of 4,500 kW (or a cap of US$4.5 million). Net EPC LDs for each kilowatt shortfall below 450 MW would therefore be US$790/kW. However, under the PPA, capacity tariff is reduced commensurately if the facility achieves an initial dependable capacity below 450 MW.

Under the EPC contract, capacity LDs are capped at US$24 million. This is the amount that would be payable for a shortfall up to 13.4 MW (i.e., 2.98% of 450 MW) or for a facility achieving a capacity of 436.6 MW.

Therefore, with regard to net capacity output LDs, three situations emerge, as shown in Table A5.1.3.

Contracted capacity shortfall affects project economics in a negative way. Since capacity tariff is reduced commensurately if facility achieves an initial dependable capacity below 450 MW, lenders will rely on the base case financial model to examine whether net of PLDs received by the project vehicle are sufficient to restore base case financial projection.

Under normal conditions, i.e. with a dependable capacity of 450 MW, the project cash flows yield a certain rate of return. The ideal case is that the project's original rate of return stays the same even if the plant capacity falls below 436.6 MW. To carry out this calculation, we would compare the present value of LDs proceeds received by the project vehicle with the present value of the shortfall in capacity revenue discounted back at the cost of loan. If the former exceeds the latter, PLDs are sufficient to restore the base case DSCR; otherwise, they are not.

Table A5.1.3 Relationship between Net Capacity Output and LDs

Situation	Effect
Facility achieving 445.5–450 MW capacity	Net EPC LDs to the project vehicle would be US$3,555,000 (= US$790 x 4,500 kW)
Facility achieving 436.6–445.5 MW capacity	Net EPC LDs to the project vehicle would be US$19,500,000 (= US$24,000,000 – US$4,500,000)
Facility achieving below 436.6 MW capacity	The project vehicle can reject the facility.

APPENDIX 5.2
FUEL CONSUMPTION ISSUES

The ideal case for a project vehicle is to have guaranteed heat rate that is at least as efficient as (preferably more than) the PPA heat rate. PPA heat rate is used to calculate the fuel expense that is reimbursed as a part of energy payment to the project vehicle by the utility. The mismatch of the heat rates embedded in the EPC contract and those stipulated in the PPA potentially creates a drain on the project's cash flow resulting from increased fuel consumption.

Mismatch of Heat Rate

The illustration below examines the materiality of the mismatch of the heat rate efficiency and its impact on fuel consumption expense incurred by the project vehicle.

Assume that EPC heat rate LDs are capped at US$28.6 million. Though the PPA does not oblige the project vehicle to pay LDs for heat rate performance shortfall, an issue arises when the contracted heat rate under the EPC is not consistent with the PPA reference heat rate. For example, the EPC heat rates at 75% and 85% plant load factors are less efficient than the PPA heat rate, although the converse is true at 95% plant load factor.

Table A5.2 analyses the monetary impact of the PPA/EPC heat rate discrepancy under three different plant load factors.

From Table A5.2, it can be seen that the project vehicle will not recover, at each semi-annual period during the life of the PPA, US$150,000, and US$50,000 at 75% and 85% plant load factor respectively, while it will gain US$120,000 at 95% plant load factor in the costs of fuel consumption. These amounts have to be compared with CADS and debt service to determine how significant they are.

Table A5.2 PPA/EPC Heat Rate Discrepancy under Different Plant Load Factors*

Situation	Plant load factor		
	75%	85%	95%
PPA heat rate (kJ/kWh)	8.172	8,036	7,900
EPC heat rate (kJ/kWh)	8,263	8,062	7.840
PPA gas consumption (GJ/6 months)**	12,080,259	13,463,113	14,792,355
EPC gas consumption (GJ/6 months)**	12,214,780	13,506,672	14,680,008
PPA gas cost (US$ million16 months)*	13.49	15.04	16.52
EPC gas cost (US$ million16 months)***	13.64	15.09	16.40
Gain/(Loss) (US$million16 months)	(0.15)	(0.05)	0.13

*Assumptions: (a) Dependable capacity: 450 MW; and (b) Gas price: US$1.117/GJ.

** Gas consumption = Net electrical output x Heat rate

[where Net electrical output = Plant load factor x Dependable Capacity x 24 x 365/2]

*** Gas cost = Gas consumption x Gas price

Note: kJ – kilojoule

GJ – gigajoule (1GJ = 1,000,000 kJ)

chapter 6

CREDIT ENHANCEMENTS

INTRODUCTION

Chapter 5 addressed the project documents and the allocation of risk among major participants to a Project Finance deal. This chapter will address the use of credit enhancements to perfect the allocation, or in other ways support the distribution of risks among the major parties to a project.

Start-up project vehicles are not regarded as creditworthy on their own merits, especially highly leveraged ones. As discussed in earlier chapters, such companies derive their creditworthiness either from the contractual arrangements entered into or, in the absence of such arrangements, from the depth and dependability of the markets they serve. As discussed in Chapter 3 and Chapter 5, most Project Finance deals have contractual arrangements and can be characterized as contract-intensive. The typical project enters into a number of contracts, some of which improve considerably its perceived creditworthiness. Arguably, the most important of these is a well-structured off-take agreement in one or another of its various forms especially if it succeeds in reducing market risk appreciably. Such agreements may underpin the provision of services by one party to another involving, for example, the transportation of gas through pipelines, supply of bulk water, generation and bulk sale of power, as well as the supply, mining and processing of ores, etc. Additionally, where resource supply is a central part of the business involving periodic delivery of needed commodities, lenders will prefer very creditworthy entities as counter-parties especially if availability, price, quality and transportation of the resource are highly variable. If these and other counter-parties are sound, the project vehicle will be able to secure a higher financial leverage and better loan terms than otherwise would be the case. Conversely, if the off-take and supply counter-parties are regarded as weak, the lenders will require third parties to guarantee, or credit enhance their performance as a precondition for lending to the project vehicle.

A few key definitions will assist our understanding of the credit enhancements to be discussed in this chapter. We begin with the concept of the guarantee.[1]

Guarantees, or performance guarantees, are undertakings by one person (the guarantor) to be answerable for the payment of some debt, or the due performance of some contract or duty, by another person. In the Project Finance context, the guarantor evidences its intention to guarantee a project participant by entering into a guarantee contract. The parties to that contract would be the guarantor, the major project participant whose payment obligations are being guaranteed and the beneficiary. There are a number of situations where guarantees are used in a typical Project Finance transaction, as we shall see further below.

Guarantees are generally of two types:

- The first of these is a monetary performance guarantee wherein a guarantor undertakes to pay a beneficiary a stated amount to satisfy the payment liabilities of a major project participant (the guaranteed party), but only upon failure of the latter to pay.

  Let us suppose that a project vehicle enters into a contract with an offshore entity to supply it with processed ore. If the off-taker is perceived to be creditworthy, the lenders will not have any issue with payment risk. If, however, the off-taker is a start-up company located in another country and is owned by an important commercial group, a monetary performance guarantee from the latter covering the payment performance of the off-taker may be required to ensure the financeability of the project. If the guarantor is deemed to be creditworthy, the guarantee will be evidenced simply as a contract issued under its own name and covering the payment obligations of its affiliate.

  If the guarantor itself is not perceived to be creditworthy and/or the country in which it resides is not assessed to be a dependable channel for foreign exchange transfers, the guarantor may be required to open a standby letter of credit (WC) through an international bank. Under a standby L/C, a commercial bank assumes the obligations of the guarantor, to make payment upon request by the beneficiary on a first-demand basis. This means that payment under the instrument is conditional upon a simple declaration by the beneficiary that the guaranteed party has not made payment or performed under its contract. There is usually

[1] **Some definitions in this chapter are partly derived from definitions and other reference material available in Black, Henry Campbell, Nolan, Joseph R. and Nolan-Haley, Jacqueline M., *Black's Law Dictionary*, sixth edition, West Publishing Company, 1991.**

no requirement for the beneficiary to present to the paying bank any evidence of non-performance.[2]

- Under the second type of guarantee, namely a performance bond, a guarantor (or surety) guarantees the performance of a construction contractor under a contract. If the contractor fails to perform, the surety may choose one of two options with which to comply with the terms of the issued instrument: (a) rectify defective work by completing the construction, itself; or (b) obtain a third party to do so. The value of such an undertaking is limited usually to a stated amount, or a certain percentage, of the contract value.

  The terms *guarantor* and surety are sometimes used interchangeably, but they should not be confused. A surety and guarantor have this in common: they are both legally bound to cover the obligations of a third party; yet there are also differences in the nature of the commitment. A surety, issuing a performance bond, is usually bound by the same contract as the party being guaranteed. The surety joins in the same promise as its principal and, along with the latter, is primarily liable. In contrast, the guarantor of monetary performance makes a separate and individual promise and is only secondarily liable. Its liability is contingent on the default of its principal. The guarantor becomes absolutely liable only when the default takes place.

Aside from guarantees, credit enhancements may include cash traps, insurance, hedges (for interest rates or commodities) and subordinated loans. This chapter, however, will focus on performance guarantees, cash traps, warranties and insurance, only. Interest rate swaps are covered in Chapter 11, and the subordination agreement is dealt with in Chapter 10. This chapter provides examples and discusses the various private, host country, multilateral and bilateral sources of credit enhancements and insurance used to buttress the ongoing commercial viability of a project vehicle. For obvious reasons, these are referred to as the "belt and suspenders" of a typical Project Finance.

Appendix 6.1 describes the market risks faced by projects in industrialized and developing countries. Appendices 6.2 and 6.3, respectively, address risk sharing related to force *majeure* (FM), using an approach commonly used in developing countries, and, in the event of early termination,

[2] Of course, if there is a disbursement under the standby L/C, the major project participant or guarantor will be obligated to repay the bank for the amount disbursed plus any interest due while the amount was outstanding. The commercial bank, by guaranteeing the off-taker and its parent, is acting as a financial intermediary accepting the risk that the project vehicle or its lenders were unwilling to assume.

the compensation paid to the project vehicle. Incidentally, the terms ***risk sharing*** and ***credit enhancement*** represent two different types of participation in the financial structure of a Project Finance deal, although their objectives overlap. For example, an off-taker in a developing country may have agreed to share certain risks with the project vehicle, **e.g.** demand, price or currency parity risks, while the host government may have entered into a contract to guarantee, or credit enhance, the performance of the off-taker. In this case, the risk sharing party is different from that which is credit enhancing. When an off-taker does not require a credit enhancement, as is often the case, it is itself enhancing the creditworthiness of the project vehicle by assuming certain risks on its behalf. By sharing risks, it is improving the credit worthiness of the project vehicle and improving its ability to take on debt. Finally, Appendix 6.4 illustrates the use of a direct letter to keep insurance current against the agreed insurable perils, with the coverage agreed to, with proceeds under the control of lenders as co-loss payees – a method that is common to all projects. Insurance, traditionally, is a risk-sharing arrangement but may be viewed as a form of credit enhancement as well.

CREDIT ENHANCEMENTS PROVIDED BY PRIVATE PARTIES

Credit enhancements may be regarded as direct or indirect. Actually, the great majority are direct guarantees that are litnited in some way, as discussed further below. While most of these enhancements provide direct support to the project vehicle, the off-take agreement is perhaps the best known example of an indirect credit enhancement. When the off-take agreement is properly structured and involves a very creditworthy off-taker, the latter is able to impart upon the project vehicle a large measure of its financial solvency. For this to be the case, the off-take agreement must be structured as a take-or-pay as discussed in Chapter 5, or in one of its acceptable, alternate forms.

Credit enhancements may be separated into two parts for discussion: (a) those provided by the sponsor(s); and (b) those provided by the project vehicle and third parties.

Basic Support Provided by Sponsor(s)[3]

Enhancement by the sponsor(s) of the project vehicle's ability to meet its obligations to lenders may take several forms depending on the project and its individual circumstances. The sponsor's need to provide support is most pronounced during the construction period but may spill over onto the operating period. Examples presented below are not intended to be exhaustive:

- Project vehicle obligations to ceding authority. As described previously, the contractual obligations of the project vehicle to the ceding authority under the terms of the concession, or off-take, agreement are backed up usually by some security granted by the former to the latter. In some countries, where the ceding authority is a government-owned entity, the structure of this security is determined on a case-by-case basis through a negotiation between the project vehicle, its sponsor(s) and the appropriate government authority. In others, host country law may contain detailed provisions with regard to the specifications of acceptable security. In such case, the project vehicle, or its sponsor(s), may be required to procure a standby L/C from an acceptable bank guaranteeing the payment of liquidated damages (LDs) for up to a specified proportion of the project cost covering its failure to perform under the terms of the key agreement. The magnitude of the guarantee may decline proportionately over time during the operating period. As examples, a failure on the part of the project vehicle to achieve commercial operations by the required date triggers the payment of substantial LDs under the standby L/C. Similarly, an early termination due to a breach by the project vehicle of its obligations under one or another project agreement may trigger LDs, although progressivelysmaller amounts the closer one gets to the final maturity of a concession or off-take agreement.
- Construction. During construction, the sponsor(s) will enhance the project vehicle's ability to mobilize debt by agreeing to a completion guarantee or a contingent equity commitment.

  (a) Sponsor's completion guarantee. A completion guarantee covers the risk that the facility will be fully built according to specifications while minimizing the impact on the project's viability of any cost overruns or delays experienced.

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[3]Throughout the discussion on credit enhancements, the word support is often used to mean the same thing. This intrnduces a problem of semantics. Lenders, for example, are said to provide "support" to the project vehicle by extending loans. There is, however, a difference between those institutions that provide risk sharing and/or credit enhancements and those that provide loans. The latter rely on the former to justify their long-term exposure.

Under this arrangement, the sponsor(s) commits to one of the following actions:

Committing the additional capital needed by the project vehicle to arrive at its completion, a date that is reached once the facility achieves certain tests of a financial and technical nature. The sponsor(s) will also commit to infuse the project, as necessary, with the full complement of working capital needed to maintain its debt service cover, as originally identified in the lenders base case.

Repaying all project debt, or an agreed portion, if it decides not to complete the project.

A completion guarantee is limited in time, i.e., it falls off once the project completion date is achieved.

(b) Sponsor's contingent equity commitment. In lieu of a completion guarantee, a project sponsor may be required by the lenders to cover the cost-overrun risk associated with the construction of a new facility by agreeing to commit a pre-agreed amount of contingent equity. Contingent equity is a negotiated standby commitment, callable by lenders only for the purpose of covering cost overruns or delays anytime up to the project completion date.

The circumstance under which contingent equity is callable is often the discussion of prolonged debate between lenders and sponsor(s). Generally, the sponsor(s) will attempt to narrow these circumstances as much as possible, taking the view that contingent equity should be at risk only to the extent that a cost overrun is forecast and the need for additional financial resources has been crystallized. They may also take the position that contingent equity should not be callable for events that are beyond the control of the engineering, procurement and construction (EPC) contractor or project vehicle. In any case, the unused contingent commitment, depending on calls that have been made during the construction period and assuming that it is not exhausted by such calls, is released partially or fully on the date of project completion.

Other Kinds of Support

- EPC single-point responsibility guarantee.[4] Under its credit enhancement, an EPC contractor "warrants" as to the integrity of all labour

[4] In Project Finance jargon, this credit enhancement is sometimes referred to as an "EPC wrap".

and materials that will go into the construction of the facility, including those of its subcontractors. It also guarantees specifications and fitness, as well as the performance of all major equipment, including mechanical and electrical installations that form part thereof. The contractor, in effect, acts as a wrap guarantor with regard to subcontractors and manufacturers. In return, the contractor receives the warranties related to performance. If there is a subsequent problem with regard to the functioning of the installation or major equipment, it is the contractor that has the single-point responsibility for fixing the problem. Possession of warranties enables the EPC contractor to enforce remedies against the manufacturers, as required. Sponsor(s), or lenders, however, may be unsatisfied with the financial solvency of the contractor and may require it to procure from a surety (a)a payment bond covering its obligations to pay LDs; or (b)a broader performance bond covering overall performance under its wrap guarantee.

- EPC retention amounts. Normally, under the terms of an EPC contract, the project vehicle is entitled to withhold up to 5–10% of each stage payment that it makes to the contractor. A portion of the withheld amount is released when the project arrives at its project completion date. The remainder is paid at the completion of the warranty period. Although payment retention is an integral part of every construction contract, some contractors prefer to receive the otherwise withheld cash and are willing to secure it with a retention bond, issued by a surety, that equals the withheld amount. If the project does not arrive at its project completion date due to the fault of the contractor, the surety would pay the project vehicle the total amount available under the instrument.
- Project vehicle's obligations to third parties or lenders. Project vehicle's obligations to a key resource supplier are often backstopped by some agreed credit enhancement. For example, a private power plant facility may have requirements to purchase fuel periodically from a fuel supply company. Because the power plant is highly leveraged, and all of its assets are pledged to lenders, a fuel supply company may not feel comfortable supplying fuel in the absence of a monetary performance guarantee. In the context of the resource supply agreement, the two parties may have agreed that the project vehicle will backstop its purchase orders with a revolving L/C issued by an acceptable bank.

Moreover, during the operating period, the project vehicle may have to dip into reserves (cash traps) in order to meet unanticipated expenses. Most Project Finance deals have well specified uses to which revenues can be applied. Project revenue priorities, as set forth in the loan agree-

ment, are referred to as cash waterfall provisions. These provisions govern the applications to which revenues may be applied, including: (a)operating expense; (b)the debt service payment account (DSPA);(c) the debt service reserve account (DSRA); (d) major maintenance reserve account (MMRA);and (e)dividends. Monthly operating expenses, as one would expect, are the first priority application of revenues. Thereafter, surplus revenues may go into as many as three cash traps before dividends may be paid:

(a) DSPA, a monthly proportionate allocation of funds needed to meet the next semi-annual debt service payment.
(b) DSRA, to top up any deficiencies that may exist therein. Usually, by prior agreement, the DSRA must at all times contain an amount equal to one to two debt service payments, to be used only if the project runs into cash flow difficulties.
(c) If appropriate, an MMRA that is created initially by a monthly allocation of funds after the facility is operational, in the aggregate sufficient to meet the next major scheduled expenditure for rehabilitation/maintenance of the facility.

Any legitimate withdrawals from the two reserve accounts, for example, to meet unanticipated or emergency operating expenses would require the project vehicle to substitute with an L/C from an acceptable bank for amounts withdrawn, up to the amount that lenders have contributed. For example, if the project capital structure is 70% debt, 30% equity, the L/C would substitute for up to 70% of the amounts in the reserve funds. This requirement, when applicable is usually memorialized in the accounts agreement (AA),discussed in detail in Chapter 9.

- Alternative means of enhancing state-owned entity obligations. To provide stability and support to the contractual arrangements entered into by wholly owned entities, the host government may agree to enter into an implementation agreement (IA)with the project vehicle. Under the IA, the subject of the next section, the government guarantees the performance of its state-owned enterprises under contracts entered into with the project vehicle. For example, the government-owned electricity utility may have executed a contract with the project vehicle to purchase electricity against monthly invoices. Under the IA, a failure on the part of the utility to pay for such service would require the government to step in and make such payment. Similarly, a government-owned fuel supply company may have entered into a contract with a project vehicle to deliver fuel on a periodic basis, guaranteeing availability, price, trans-

portation and quality of supply. A failure to perform by the fuel supplier would require the payment of LDs to the project vehicle, permitting the project vehicle to source its fuel from an alternative supplier. A breach of contract by the fuel supplier to pay these LDs would require the government to step in and make the payment.

In lieu of an IA, however, there are examples of state-owned offtakers that have mobilized rolling L/Cs from commercial banks to support their monetary performance obligations under the terms of an offtake agreement, or other similar contract. The advantage of the standby L/C, of course, is that it is a first-demand guarantee. To be equivalent, or as equivalent as possible to a standby L/C, the IA must involve (a)a waiver of sovereign immunity; (b)be callable on demand; (c)provide for waiver by government of all defences; and (d)represent an absolute and unconditional obligation. In the absence of one or more of these provisions, the IA may not provide the credit enhancement necessary to comfort a lender that reliable support is in place.

However, it should be clearly understood that the IA has elements of both a first-demand guarantee and a performance bond. A demand to pay under its terms may be contested under permissible grounds by either, or both, the guarantor and the guaranteed party, with resolution only possible through arbitration. In this case, the government would pay only if the arbitration panel rules against its position.

Other typical credit enhancements that are mobilized by a project vehicle prior to financial closing consist of insurance, hedges and subordinated loans:

- **Hedges.** Broadly, hedges that are common to Project Finance are futures, forwards, options, swaps, price ceilings and floors, etc., covering the forward price of interest rates, commodity prices and currency parities. An interest rate swap, covered in Chapter 11, has the express purpose of permitting the project vehicle to exchange (or swap) the variable-rate interest payment obligations formalized within its loan contract with lenders for fixed-rate interest payment obligations. The new fixed interest rate obligations assumed by the project vehicle improve the predictability of debt servicing requirements while mitigating the risk that rising short-term interest rates will affect adversely its cash flows and ultimately, its ability to service debt.

  A different type of hedge, referred to as a ***currency hedge,*** may be available to a project vehicle located in an industrialized country if it is deliberately borrowing in one currency but generating revenues in another.

In a currency swap, two counter-parties agree to exchange their respective loan proceeds – each loan denominated in a different currency – and to service each other's loans until final maturity. For example, a counter-party – such as a government, bank, corporation or multilateral institution – may borrow under specific terms and conditions in one currency, such as German Deutsche Mark (DM), while the other counter-party borrows in second currency under different terms and conditions, say in US dollars. The primary motivations for a US dollar-based borrower to issue foreign currency debt are to (a) expand its banking relationships; (b) avoid rating revisions that may be triggered with the acquisition of new US debt; and (c) exploit arbitrage opportunities where it is less costly to issue debt denominated in foreign currency and then swap into dollars.

Example

A newly organized US project vehicle decides to arrange a project loan in a foreign currency to reduce its cost of borrowing. With the assistance of its parent company, which has a large presence in Germany, it borrows in DM at an all-in fixed rate of 7% per annum. It then enters into a foreign currency swap with an unrelated company in Germany that has just issued US dollar bonds at a fixed rate of 9% per annum. By way of this agreement, the two companies agree to exchange loan proceeds and service each other's debt. The currency swap makes sense if the German company has a comparative advantage in borrowing US dollars on a fixed-rate basis, and the US company has a comparative advantage in borrowing fixed-rate DM. By exchanging their respective obligations through a currency swap, both end up with a cheaper source of funds than they would have been able to achieve on their own.

Currency swaps provide an attractive alternative to the use of long-dated forward foreign exchange contracts for currency hedging. As is true with some of the commodities discussed earlier, long-dated forward exchange contracts have a very illiquid market, are priced very conservatively by banks, and the bid-offer spreads tend to be quite wide. Banks and other institutions are usually not eager to take on the risk of changes in the future level of spot exchange rates, and when they do assume long-dated forward positions, they have to "square" these with rolling, shorter term forward contracts.

- Insurance. Insurance is a contract whereby, for a stipulated consideration, one party undertakes to compensate the other for loss suffered on a specific asset, or assets, as a result of perils directly specified. The party agreeing to make the compensation usually is called the insurer or underwriter; the other, the insured or assured; the agreed consideration, the premium; the written contract, a policy; and the events insured

against, risks or perils. Insurance is regarded as a credit enhancement because it removes from the project vehicle most risks arising from Other FM-A (which we will discuss later in this chapter). In the absence of such an arrangement, the project vehicle would have to self-insure, i.e., underwrite these risks itself.

- Subordinated loans. As discussed in more detail in Chapter **10,** a subordinated loan is an agreement whereby one lender (the subordinated lender) holding an otherwise senior lien on the assets and cash flow of a borrower consents to a reduction in priority relative to another lender (the senior lender) holding a similar interest on the same assets. Subordination is regarded as a credit enhancement because its effect is to provide the senior lender with first rights to all of the project vehicle's cash flow and, therefore, a larger margin of safety with regard to its debt service. Similarly, in the event of an enforcement by the lenders and a liquidation of the project vehicle's assets pursuant to its dissolution, the subordination also provides the senior lender with first rights to recoveries until such time as its loans are fully paid off.

HOST GOVERNMENT GUARANTEES: THE IA[5]

An IA is not a part of the contract structure of a Project Finance transaction in developed countries. It is, however, commonly found in many deals in emerging market countries.

Essentially, an IA is a contract between a project vehicle and a host government that provides support and stability to political and financial uncertainties that are common to the host country. Lenders will require the project vehicle to enter into such an agreement in an emerging market Project Financing, particularly if one or more government-owned entities – off-taker, resource supplier, etc. – are counter-parties to key project agreements.

As summarized in Box 6.1, the host government under an IA typically provides one or more of the following:

- **A** waiver of sovereign immunity. Generally, under an IA, the host government will waive its right of sovereign immunity and consent to judicial proceedings in any court of competent jurisdiction, including foreign courts, for any action filed by the project vehicle to enforce any award or decision made in connection with an arbitration. Essentially,

[5]Host government guarantees are found in implementation agreements (IAs) for greenfields. Some or all of the guarantees discussed in this section are also found in other host government agreements, e.g. concession agreements and memorandum of understanding.

Box 6.1 Provisions of Host Government under an IA

Implementation Agreement

An IA is a contract between a project vehicle and a developing country host government that addresses political and financial uncertainties in a Project Financing. **An IA is not normally needed in a developed country.**

Under an IA, the host government may:

- Provide waiver of sovereign immunity.
- Backstop payment obligations of wholly owned subsidiaries that are major participants to a Project Financing.
- Grant fiscal incentives to the project.
- Give priority access to foreign exchange availability.
- Provide assurances that the project will not be confiscated, expropriated or nationalized.
- Agree to underwrite the consequences of *Political FM* and/or pay compensation to the project vehicle if the project is terminated early due to breach by government.
- Assist in accelerating project implementation, including timely issuance of permits and consents.

this waiver converts the host government into a commercial party for purposes of resolving legal issues.

- Payment guarantees. Certain political, legal, regulatory and financial risks undertaken by a project vehicle, that are deemed to be within the host government's control, are addressed by the IA. For example, the government may guarantee the payment (as well as other performance) obligations of those wholly owned entities that are major project participants to the Project Financing but are not perceived to be creditworthy in their own right and/or are not viewed to be truly independent of government policy.
- Fiscal Incentives. Often, reduction in host country taxes, duties and levies are also included in the IA. The financial impact of a reduction, or elimination as the case may be, of such taxes is reflected in the lower cost of project vehicle's unit service price. If the tax holiday is revoked for any reason, or new income and other taxes are applied, the IA permits the underlying unit price to increase and offset such new tax.

  It is particularly important that the entire project contract structure be included in the negotiation of this provision so that tax or duty benefits extend to the contractor, operator and fuel supplier. Otherwise, these entities will not enjoy the same benefits as the project vehicle. A failure to do so, for example, may result in a pass-through of the taxes assessed against these entities to the project vehicle in the form of higher prices.

Typical tax benefits conferred under the IA are as follows:

(a) The project vehicle may, for a specified period from the commercial operations date (COD), be exempt from taxation or withholding tax in the host country.[6]

(b) As indicated previously, tax holidays and/or other benefits are provided to the project in order to lower tariff and debt service, while at the same time insulate the project vehicle from the rent-seeking behaviour of the tax official.

(c) The project vehicle and its contractors, prior to the COD, may be allowed to import plant and equipment without payment of any taxes, including custom duties and value-added tax (VAT).

(d) The project vehicle may be exempt from any stamp duty and fees on the registration of the security documents and deeds recorded in connection with acquisition of the site in the host country.

(e) The project vehicle may be exempted from any imposition of tax on the sale of output to be produced by the project to the off-taker.

- Guarantee of availability and transferability of foreign exchange. The IA will typically address a variety of country-specific currency issues. Currency issues that must be taken into account include convertibility of the currency, and whether sufficient foreign exchange is available to service the foreign currency obligations of the project, including its operating, debt service and dividend payments.

  The nature of the currency convertibility and transfer risk varies, based in part on the type of project. An infrastructure project in a developing country, generally, will not earn hard currency. The currency concerns involve the ability to receive local currency from customers as well as the conversion of local currency receipts into hard currency and transfers of the hard currency abroad. By contrast, if the project is a mining or container port project in a developing country, the currency concerns will be different because hard currency will most likely be generated from the export operations of the mine or the services provided by the port. Currency issues include the right of the project to retain the hard currency, establish an offshore currency account for purposes of depositing the export revenues, and apply proceeds to operating, debt and equity needs.

[6] **However, tax lawyers or accountants should be consulted in the preparation of a tax holiday provision. If not properly structured, the tax holiday in the host country could nonetheless result in tax liability when dividends are paid.**

- Assurances that the project will not be confiscated, expropriated or nationalized. Government agreement may extend to all government agencies and may include provisions that prevent it from acquiring any shares in the open market under any set of circumstances or, more commonly, not to purchase shares beyond a certain ownership level.
- Assistance in accelerating project implementation. Responsibility for cooperation in the permitting process is also included in the IA. This cooperation is often manifested in an obligation that the host government and its agencies use best efforts to issue the permits and licences needed by the project sponsor(s) for construction and operation. This assurance sometimes includes an undertaking in the IA that the host government will not revoke or modify permits and licences without a justifiable reason and an opportunity to receive notice and be heard. In some situations, lenders will require that they are given prior notice and an opportunity to cure defaults before a significant permit or licence is revoked.
- Acceptance of responsibility for political FM and agreement of certain termination provisions in event of default (EOD).FM provisions in the IA are drafted identically to those under the off-take agreements. FM protection may take the form of underwriting the consequences of Political FM. This may include a project buyout at an agreed-upon price and/or an agreement to pay project debt service and fixed operating costs during an FM event, particularly one that is not deemed to be under the control of the project vehicle.

We turn now to a discussion of FM risks and their allocation within the context of an off-take agreement and their enhancement by way of the IA.

Force Majeure

FM is a legal doctrine, its purpose being to excuse contractual performance by parties confronted by unanticipated events beyond their control. A careful analysis of FM events is critical in a Project Finance context because such events, if they permit a particular party to avoid its contractual obligations, can severely disrupt an established risk allocation scheme. Since FM risks are by nature unpredictable, they cannot be effectively mitigated unless they are properly allocated. The allocation of FM responsibility is fundamental to a coherent Project Finance (as opposed to a traditional loan) structure and the subject of intense negotiation among the parties.

As shown in Table 6.1, the key project agreements recognize three types of FM events, which may excuse the performance of the project vehicle:

- Political FM.
- Change-in-Law.
- Other FM.

Table 6.1 **Types of Force Majeure**

FM types	Definition examples
Political FM	Generally, Political FM is defined as those events that occur inside the host country or directly involve the host country, including, but not limited to: • Any act of war, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection. • Strikes, works-to-rule or go-slows that extend beyond the project and are widespread or nationwide.
Change-in-Law	Requires a major reconfiguration of the plant (or the project) to meet new environmental standards; or makes it unlawful for printe investors to operate an infrastructure business.
Other FM	Generally, Other FM events are divided into two categories: Other FM-A and Other FM-B. Other FM-A events include natural perils such as lightning, earthquakes. flood. tsunami, storms, cyclones, typhoons or tornadoes, fire, explosion or chemical contamination. Other FM-B events are political events. occurring *outside* the host country, not involving the host country, but somehow affecting adversely the project's operation, such as any act of war (whether declared or undeclared), invasion, armed conflict, blockade. embargo, revolution. riot, insurrection, civil commotion.

Political FM

Political FM is defined as those events that occur ***inside*** the host country or ***directly*** involve the host country, including, but not limited to:

- Any act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, civil commotion, or political act or act of terrorism.
- Strikes, works-to-rule or go-slows that extend beyond the project, are widespread or nationwide, or that are of a political nature associated with or directed against the project vehicle.
- Radioactive contamination or ionizing radiation (e.g. arising from the detonation of a number of devices) originating from a source inside the host country, and affecting the proper operation of the project.

- A lapse of a permit or consent not caused by the project vehicle.

Change-in-Law

Generally, a Change-in-Law event is defined as a new law, regulation, decree or policy that has one of the following effects:

- Requires a major reconfiguration of the plant (or the project) to meet new environmental standards.
- Makes it unlawful for private investors to operate an infrastructure business.

Other FM

Generally, other FM events are divided into two categories and, for the purposes of this discussion, will be referred to as Other FM-A and Other FM-B.

Other FM-A events include natural perils that occur within the host country and have the potential to damage the facility:

- Lightning, earthquake, flood, tsunami, storm, cyclone, typhoon, or tornado.
- Fire, explosion or chemical contamination.
- Epidemic or plague.

Other FM-B events are political events, occurring outside the host country, not involving the host country, but somehow affecting adversely the project's operation:

- Any act of war (whether declared or undeclared), invasion, armed conflict, blockade, embargo, revolution, riot, insurrection, civil commotion, or political act or act of terrorism.
- Strikes, works-to-rule or go-slows that extend beyond the host country borders that are of a political nature.
- Radiation forthcoming from a source (e.g. arising from the detonation of a number of devices) outside the host country.

Basic FM Risk-Sharing Principles

Typically, the project vehicle is excused from performance for Political FM and Change-in-Law, but not for Other FM-A or Other FM-B. Moreover, for Political FM and Change-in-Law, the project vehicle may be entitled to indemnification by the off-taker. In such case, the purchaser, if government-owned, may be required to pay capacity price regardless of whether

the facility is capable of providing service while a Political FM or Change-in-law persists.

In addition, some form of financial protection is included in the off-take agreements in countries where Political FM or Change-in-Law results in the need for restoring/reconfiguring the plant. For example, a ***tariff reopener*** may be allowed – the objective of which is to recover costs of refurbishing the project if it is materially damaged by a Political FM, or needs to be reconfigured as a result of a Change-in-Law.

However, for Other FM-A or Other FM-B events, the project vehicle would ***neither*** be excused from performance ***nor*** entitled to indemnification. In the case of Other FM-A, it may be assumed that insurance will cover most, if not all, of such perils through appropriately structured insurance policies; for Other FM-B, the host government, as a matter of principle, may refuse an allocation of project risks that is beyond its control (see Appendix 6.2 for an illustrative analysis of the FM risks that pose a threat to the viability of the project vehicle, the typical allocation of these risks and the residual risks that the project is left to contend with).

Moreover, the project vehicle may be permitted to terminate the project and receive special compensation if FM is ongoing for six months or more, as well as for a variety of other reasons. An ongoing event falling under the Political FM or Change-in-Law may entitle the project vehicle to full compensation upon termination. Conversely, an ongoing event falling under Other FM-A or Other FM-B may provide for partial or no compensation at all (see Appendix 6.3 for an analysis of the compensation the project vehicle is entitled to for early termination under a variety of circumstances, including ongoing FM events).

MULTILATERAL BANK GUARANTEES

Partial Risk Guarantee[7]

A Partial Risk Guarantee (PRG) provides coverage against well-defined risks. As discussed previously, these risks include some or all of the following categories: confiscation, expropriation, nationalization, currency inconvertibility or non-transfer, political violence and breach of contract. In Project Finance such risks are typically referred to as political risks, as distinct, for example, from purely commercial or project-related risks. Risks

[7]The discussion is adapted from the *World Bank Guarantees Handbook*, available at http://www.worldbank.org/guarantees.

covered under the PRG may be similar to the undertakings provided by the host government under the terms of an IA, or similar agreement.

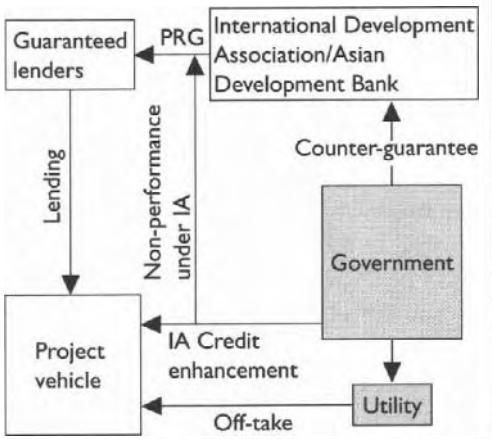
As discussed, the host government will often enter into an IA with the project vehicle in order to neutralize political risks and make the project finance-able. If, however, the lenders do not feel that the project is finance-able with the IA alone, they may request the host government to assist in obtaining a PRG from the World Bank or one of the other regional development banks. These would include the Asian Development Bank (ADB), Inter-American Development Bank (IADB) or European Aank for Reconstruction and Development (EBRD). The purpose of a PRG, in this case, would be to credit enhance some, or all, of the undertakings of the host government in the IA, or some other agreement providing similar undertakings. To simplify the discussion, we will refer to all such agreements as IA, even though the provisions found in that document may be found in agreements that bear a variety of names. We should also duly note that a PRG may be issued with or without the existence of an IA. For total exposure of US$100 million or less. both ADB and IADB will provide PRGs without any counter-guarantee from the host government, either direct, or implied by the existence of an IA. In contrast, the World Bank requires a counter-guarantee for all projects, while ADB and IADB require such an instrument for major projects where total exposure exceeds US$100 million. Typically, under the terms of a counter-guarantee, the host government is committed to repay the issuer for any disbursement under the PRG drawn in response to the occurrence of a political-risk event.

A schematic view of a PRG in support of a private water project is shown in Figure 6.1. It is worth reiterating that the World Bank guarantee is limited to backing the government's obligation. It cannot be used to back up the obligations of private parties such as the project vehicle, the EPC contractor and/or the operator. The same limitation applies to the other institutions that provide PRGs.

Although the overlap is not perfect, it must be emphasized that the PRG issued by multilateral banks is very similar to the insurance cover provided by others for political risk discussed further below. The main providers of the latter insurance cover are the Multilateral Investment Guarantee Agency (MIGA), bilateral institutions such as the US and Japanese investment promotion agencies, export credit agencies and private companies such as the American International Group (AIG) and Lloyd's of London.

Figure 6.1 World Bank Partial Risk Guarantee on a Private Bulk Water Supply Project

- A PRG covers specified risks arising from non-performance of sovereign contractual obligations, as formalized in the IA.
- Such guarantee ensures payment in the case of government breach.
- The guarantee does not cover non-performance under project agreements due to project vehicle breach.



Advantages

The PRG should not be confused with the World Bank's partial credit guarantee (PCG) described in Chapter 4. The PRG and PCG have completely different purposes and objectives. However, both can benefit borrowers and host governments in many ways, for example, by:

- Covering risks that the market cannot assume and facilitating access thereby to financing that would not otherwise be available.
- Extending the maturity of loans beyond the loan period that would not be possible without the guarantee, thereby allowing for a lower unit cost of output over the life of the project.
- Providing borrowers (public and private) with greater flexibility in choosing the most appropriate financing sources (currencies, markets, interest rate benchmark, and so on) for their needs.
- Reducing host government exposure to a project by passing commercial risks to the private sector.
- Eliminating the need for the international competitive bidding for the project provided that procurement is demonstrably economic and efficient.

INSURANCE

Key Issues

Insurance is, unfortunately, an area that rarely receives the attention it re-

ally deserves. Agreement between the project vehicle and lenders in regard to the insurance arrangements is often left to the very end of the debt negotiations. Insurance, however, is an important credit enhancement tool in a Project Financing. Project risks not otherwise covered, that are insurable at a reasonable price, will be addressed in an insurance programme, including the possibility for self-insurance for certain agreed-upon minimal risks.

Guidelines imposed by lenders in respect of the acquisition of insurance include at least the following: (a) comprehensive insurance cover; (b)policy deductibles set at realistic levels; (c)minimal self-insurance set at levels that cannot undermine cash flows needed for payment of debt service; (d)minimum creditworthiness and stability of insurance underwriters; and (e)appropriate controls over insurance cover through loan covenants.

Insurance programmes made in connection with privately financed infrastructure projects typically will vary according to the phase to which they apply, with certain types of insurance purchased only during a particular project phase. Some insurance that forms part of the package is required by lenders, while other insurance is required under the laws of the host country.

A number of practical difficulties may arise in acquiring insurance. In some developing countries, insurance may only be purchased through a government monopoly. Moreover, certain needed insurance (e.g. delay in start-up or business interruption insurance) may have the status of non-admitted insurance, i.e., it may not be available at all in the local market. If available, the coverage may be more limited than the international standard, in which case the concessionaire may remain exposed to a number of perils that may exceed its self-insurance capacity. Further difficulties may arise as a result of limitations on the ability of local insurers to reinsure the risks on the international insurance and reinsurance markets. If the amounts that must be maintained for own account are large relative to the financial solvency of the local insurer, the project vehicle and lenders will be assuming an undesirable payment risk. While the IA may exempt the project vehicle from the above legal requirements, concerns will be raised inevitably by the lenders and/or their advisors as to the legality of such an exemption. When these and other such problems arise, each case has to be handled separately on its merits.

The primary insurers in the Project Finance markets include private, multilateral and bilateral institutions. The private insurers provide commercial-risk insurance, which largely, if not wholly, covers Natural FM perils. It will be recalled from our previous discussion that these risks are largely for account of the project vehicle, allocable in turn to commercial insurers. Political-risk insurance is provided by private insurers as well as

multilateral and bilateral agencies. Political-risk cover, as described herein, overlaps partially with the commitments provided to a project vehicle by the host government under the IA, where the concept of Political FM is defined.

The discussion immediately below will address types of insurance required by lenders to cover risks falling under the definition of Natural FM. Subsequently, the discussion will extend to types of insurance available to cover political risks.

Commercial Risk Insurance for Natural FM Perils

The following basic policies (in addition to all statutorily required insurance) are typical of the requirements for projects:

Construction Phase

- Construction All Risks, based on full contract value and covering the risks of physical loss or damage to the contract works until project completion. An All Risks policy covers every natural peril except for those specifically excluded, such as war, defects in workmanship or normal wear and tear.
- Delay in start-up, covering the fixed expenses (including debt service) and loss of anticipated net profit for up to 24 months, as a result of damage from the occurrence of a peril covered by the Construction All Risk policy. (If the facility is damaged by an uncovered peril, delay in start-up would not apply).
- Marine All Risks, covering the transit of plant and equipment from suppliers' premises to the project site.
- Marine delay in start-up, covering the fixed expenses (including debt service) and loss of anticipated net profit for up to 24 months, as a result of delay in project completion, due to insured loss or damage during marine transit.
- Legal liability for loss or damage to third parties for loss of property, death or bodily injury and/or as specified in the off-take or concession agreement.

The insurance programme may also incorporate some special areas of cover. Key additional coverage might include (a) damage caused by defective design, workmanship and material applied particularly to the installation of the electrical and mechanical equipment; (b) vitiation of insurance cover as a result of "innocent or unintended non-disclosure, breach of policy condition or misrepresentation".

Operational Phase

- Operator's All Risk, for physical loss or damage to assets, based on full replacement value.
- Machinery breakdown caused by sudden and unforeseen mechanical and electrical breakdown, intended for complex facilities such as power plants and other such installations.
- Business interruption, covering continuing fixed expenses (including debt service) and loss of anticipated net profit for up to an agreed period following physical loss or damage to contract works from one, or more, of the perils covered by the All Risks insurance.
- Legal liability for loss or damage to third parties for loss of property, death or bodily injury and/or as specified in the off-take or concession agreement.

Lenders' Requirements

There is no blueprint of standard requirements. Each insurance programme is tailor-made to suit the requirements of the particular project. There are, however, basic elements that lenders incorporate into a desirable insurance programme:

- Owner- or principal-controlled insurance. During construction and operations, the project vehicle, and not the contractor(s), should arrange and control the insurance programme. The owner needs to ensure that the programme meets the requirements of the financing agreement, to which the contractor(s) is not usually a direct party. Within limits specified by lenders, an owner should have control over the choice of insurer as well as nature and extent of cover. Owner-controlled programmes are usually more cost effective and allow ease of administration and control. The involvement of a sole procurer eliminates potential conflicts that would arise if more than one party were involved in securing construction insurance.

  If the construction contractor arranges the construction phase insurance, an owner may find it difficult, if not impossible, to arrange the delay in start-up insurance separately. Even for a turnkey contract, the owner should make it a point to arrange the insurance.
- Broad form policy structure. Policies should be based on international – as opposed to domestic – standards. Manuscript policies are preferable to "off the shelf" versions. In many developing countries, insurance markets are still evolving and most local markets lack the breadth and sophistication of covers required by lenders.

- Small, or no, risk retention(s) by local insurers. Essentially, this means that the international reinsurance market should be underwriting the bulk of the insurance risk. Participation by domestic insurers is desirable. Selection of the insurer, however, should be based on size and capacity. In the international area, the identity and retention levels of reinsurers will require monitoring.
- "Full value" insurance. The preference is for full value as opposed to loss-limit insurance to the extent that such cover is available for those projects faced with high exposure to natural hazards, e.g. earthquake and volcanic eruption.
- Inclusion of "bankers clauses". This would include lenders as insured parties, waiver of subrogation, non-vitiation, assignment, loss payee provisions and non-cancellation. The intent of a non-vitiation clause is to ensure that the interests, rights and benefits of lenders are not prejudiced if the project vehicle breaches a policy warranty, condition or terms, or fails to do something that is required of it. In addition to being named as sole loss payees, lenders will require assignment of all insurance policies. This strengthens the lenders' position by giving them preferential creditor status in the event of insolvency of the insured.

Appendix 6.4 provides an example of a simple letter agreement between lenders and insurance brokers that illustrates how the former stay on top, and in control, of the status as well as all major decisions in respect of insurance. This type of agreement is sometimes referred to as a Direct Agreement, an instrument which we will examine much more closely in Chapter 12.

Political-Risk Insurance

The PRG instrument has been discussed earlier and, in particular, its similarity to political- risk insurance has been noted. Public sector institutions that provide insurance include MIGA, Japan Bank for International Collaboration (JBIC), US Overseas Private Investment Corporation (OPIC) and export credit agencies (ECAs), and private insurers such as AIG and Lloyd's of London. Political-risk insurance, in many instances, revolves around four basic perils:

- Confiscation, expropriation, nationalization and deprivation (often referred to as CEND risks).
- Currency risks.

- Political violence.
- Repudiation of contract.

It is important to note that not all providers of political-risk insurance have precisely the same focus, or for that matter, coverage in respect of the four categories of perils. Also, while insurance(s) can be purchased individually or in combination, the risk coverage is narrow and the claims procedure cumbersome and lengthy. Nevertheless, where overlaps exist between the coverage provided by the insurer and the commitments provided to a project vehicle by the host government under the IA, it is not unusual for loan parties to use available political-risk insurance to "credit enhance" at least a portion of host government undertakings under the IA.

CEND Risks

CEND insurance provides cover against expropriation and related perils. In addition to outright confiscation, expropriation and nationalization, creeping expropriation may be covered also. Depending on the insurer, coverage is provided on a limited basis for partial expropriation (e.g. confiscation of funds or tangible assets).

Generally, bona fide, non-discriminatory measures taken by the host government in the exercise of legitimate regulatory authority are not covered.

For total expropriation of equity investments, the insurer pays the net book value of the insured investment. For expropriation of funds, it may pay the insured portion of the blocked funds. For loans, the underwriter insures the outstanding principal and any accrued and unpaid interest. Compensation is paid usually upon assignment of the investor's interest in the expropriated investment.

Currency Risks

There are three broad (but interrelated) forms of currency risk: (a) inconvertibility; (b) transfer risks; and (c) devaluation:

- Inconvertibility risk arises in economies without open foreign exchange markets where an entity may be unable to convert local currency revenues into "hard" foreign currency.
- Transfer risk, on the other hand, arises when an entity is able to convert local proceeds into foreign currency but is restricted by local authorities from transferring such foreign currency abroad.

- Devaluation risk is the risk that local proceeds lose their value against a particular foreign currency, notwithstanding that such proceeds may still be convertible into foreign currency and transferable abroad.

Typically, the insurance provided by multilateral, bilateral and private insurers protects the investor against inconvertibility and transfer risks but not devaluation risk. Specifically, the insurance protects against losses arising from an investor's inability to convert local currency (capital, interest, principal, profits, royalties and other remittances) into foreign exchange for transfer outside the host country. The coverage may also insure against excessive delays in acquiring foreign exchange caused by action or failure to act by the host government, by adverse changes in exchange control laws or regulations and by deterioration in conditions governing the conversion and transfer of local currency.

Political Violence

Coverage in this case protects against loss from damage to, or the destruction or disappearance of, tangible assets caused by politically motivated acts of war or civil disturbance in the host country, including revolution, insurrection, coup d'état, sabotage and terrorism. For equity investments, the insurer will pay the investor's share equal to the lesser of book value of the assets, their replacement cost or the cost of repair.

For loans, the insurer will pay the insured portion of the principal and interest payments in default as a direct result of damage to the assets of the project caused by war and civil disturbance. This type of damage coverage also extends to events that, for a period of one year or more, result in an interruption of project operations essential to overall financial viability. This type of business interruption is effective when the investment is considered a total loss. At that point, the insurer will pay the book value of the total insured equity investment.

Repudiation of Contract

This risk category is designed to cover circumstances where the host country government, or one of its affiliate companies, repudiates or otherwise avoids its obligations under a project contract. In projects where the host government undertakes significant responsibilities under an IA, the failure of the government to fulfil its obligations can be catastrophic.

Providers of Political-Risk Insurance

MIGA[8]

MIGA provides long-term political-risk insurance cover to debt and equity investments. However, a project may access political-risk cover for its debt only if its sponsor(s) contracts for similar coverage on the equity.

To be eligible, investments must originate in any member country (e.g. US) and be destined for any developing country (e.g. India). MIGA insurance is not available for any investment originating in a developing country (e.g. India) and destined for the same developingcountry (i.e., India). However, MIGA insurance may cover any investment originating in a developing country (e.g. India) and destined for another developing country (e.g. Malaysia).

Debt and equity contributions associated with the expansion, modernization or financial restructuring of existing projects are also eligible, as are acquisitions that involve the privatization of state enterprises. Eligible forms of foreign investment include shareholder loans and loan guarantees issued by equity holders, provided the loans and loan guarantees have tenors of at least three years. Other eligible forms of investment are technical assistance and management contracts, as well as franchising and licensing agreements, provided they have tenors of at least three years and the remuneration of the investor is tied to the operating results of the project.

In 1995, MIGA started a co-insurance programme, the Cooperative Underwriting Programme (CUP),designed to encourage private insurers to offer political-risk insurance for projects in developing countries that are members of MIGA. The CUP aims to address instances when a private insurer may not wish to assume additional risk in a host country on its own, but would be willing to do so in conjunction with an international organization such as MIGA. The CUP is a fronting arrangement, whereby MIGA is the insurer of record and issues a contract of guarantee for the entire amount of insurance requested by an investor but retains only a portion of the exposure for its own account. The remainder is underwritten by one or more private insurers using MIGA's current wording. The premium rates, claims payments and recoveries are shared by the parties on a pro rata basis.

'Discussion is adapted from United Nations Commission on International Trade Law, "Privately Financed Infrastructure Projects: Draft Chapters of a Legislative Guide on Privately Financed Infrastructure l'rojects", thirty-third session, New York, 12 June–7 July 2000.

Bilateral Institutions

Bilateral institutions located in industrialized countries, such as ECAs and investment promotion agencies, also offer political-risk insurance. Most of these institutions are members of the International Union of Credit and Investment Insurers (Berne Union). The Berne Union has as its main objectives the promotion of international cooperation and a favourable investment climate, developing and maintaining sound principles of export credit insurance, and establishing and sustaining discipline in the extension of credit or insurance for international trade.

ECAs and investment promotion agencies variably offer insurance for (a)currency convertibility and transfer; (b)CEND; and (c)most, if not all, perils described under political violence above. Not all ECAs, however, offer cover for breach of contract. In this case, the political-risk cover would be narrower than that of the PRG, MIGA, OPIC or Export-Import Bank (Eximbank), all of which offer insurance against breach of contract.

As discussed in Chapter 4, transactions that are eligible for ECA involvement generally include the financing of export of goods or services originating from their country. Agencies such as US Eximbank finance exports from their home country through (a) direct loans; or (b) insurance covering export financing provided by commercial banks. Equity investments are not generally eligible for ECA insurance cover. In contrast, investment promotion agencies, of which the OPIC is a notable example, encourage equity investment by home country firms in businesses located in developing countries by providing similar cover to their equity and/or debt investments. In sharp contrast to MIGA's programme, OPIC does not require that the project sponsor(s) take out insurance on the equity investment in a given project before being eligible for cover on the debt owed to third-party lenders.

Private Insurers

The two most dominant private sector underwriters in political-risk insurance are Lloyd's of London and AIG. At Lloyd's, aggregate contingent liabilities for this insurance are estimated to be in excess of US$25 billion. Lloyd's has the advantage of being able to pool underwriting capacity to insure large exposures of US$1–2 billion per transaction. Other private insurers, such as AIG, are limited to a maximum coverage of US$150 million per transaction. While political-risk cover periods for private insurers have traditionally been limited to three to five years, some have recently

offered to extend coverage for up to **10–15** years. Nevertheless, most private sector political-risk insurance continues to be issued for relatively short term covering mostly equity-related transactions.

Generally, the advantages enjoyed by the multilateral or bilateral sources of political-risk guarantees, relative to their private competitors, include the following:

- Insurance can be contracted for a wider variety of host countries, including middle-income and lower-income developing countries.
- Tenor can be 15 years or longer, often more favourable than what is found in the private markets. If sponsor(s) can access longer term debt for a given project matching the tenor of the guarantee, this potentially will augment the borrowing capacity of the project and hike up its internal rate of return.
- MIGA, ECA or bilateral investment agency support is often the key as to whether a particular project is able to find finance at all, especially in lower income developing countries.

Review Questions

What is the difference between a monetary performance guarantee and a performance bond?

How does the nature of the guarantor's obligation differ when comparing monetary performance guarantees and performance bonds?

Identify the attributes of a monetary performance guarantee that are attractive to the beneficiary of such guarantee.

4. What is the difference between insurance and a guarantee?
5. Why do you think insurance, hedges or subordinated loans are considered to be credit enhancements?

What typical concessions to the project vehicle would you expect to find in an IA?

What are the risks covered by political-risk insurance? Identify the differences and overlaps between political-risk insurance and an IA.

List the credit enhancements that off-take and market-risk projects in a lower income developing country are likely to require. How are these likely to change as you go upwards through classifications such as a middle-income developing country, higher income developing country and finally an industrialized country?

9. What is FM and how does the IA protect against these types of events?
10. Who are the providers of political-risk insurance? Identify one specific multilateral institution. Give examples of bilateral providers of

political-risk insurance. What are the advantages these institutions have over private providers of such insurance?

APPENDIX 6.1

WHEN THE CLASSIC MODEL DOESN'T FIT!

Some professionals would define a classic Project Finance more narrowly than is done in Chapter 5. In their view, a classic limited recourse project is one that has predictable construction, revenue and operating costs unexposed to vagaries such as foreign exchange parity or availability. An example is a power generating plant or a pipeline project, located in the US and constructed prior to 1990. Such a project would have benefited from an off-take agreement generally entered into with a private, creditworthy party, specifying defined prices and units to be purchased. Project sponsor(s) would have financed its construction costs in the same currency as its revenue, therefore avoiding foreign exchange parity or availability risks.[9] In contrast, a project located in a developing country during the same or subsequent period might not warrant being referred to as a "classic" Project Finance because it would exhibit greater risks, discussed further below.

In Chapter 5, market risk was defined to encompass demand, price, cross-currency, foreign exchange availability and payment risks. As illustrated in Table **A6.1,** projects located in developing countries differ from those in industrialized countries, particularly in the level of market risk exhibited.

Of these market-risk components, perhaps the most difficult to evaluate is demand risk. Demand can be a function of macro-economic variables such as economic and political outlook and stability, population growth, business-cycletrends and many other exogenous factors. In examining these and other variables, lenders avoid projects that do not have a strong raison d'être, irrespective of whether the product is sold under an off-take agree-

[9] In the US, the financing of oil and gas pipelines and power plants under the Public Utilities Regulatory Policies Act (PURPA)would warrant this designation. In the UK, there is much greater variety of infrastructure, undertaken under the private finance initiative (PFI):

Social *infrastructure* (prisons, hospitals, specialized hospital laboratories, schools, immigration detenrion centres); or logistical services provided to (a)metropolitan police (building and operation of emergency call centres); (b) fire departments (leasing of fire trucks and other fire-fighting equipment); (c) government-operating systems (providing payroll and other support activity); (d) improved land registry (enhanced IT equipment and services to improve record keeping); (e) highway agencies (sophisticated traffic control functions); and (f) local government (leisure centres), etc.

- Defence-oriented *plant* and equipment, i.e., leasing of such vehicles as runway sweepers, de-icing equipment, fuel tankers, fire-fighting equipment, simulators to provide synthetic training services, etc.; or construction and operation of facilities such as training centres. officer and family housing, etc.

ment. To illustrate, lenders will not participate in an independent power producer (IPP) that generates electricity for sale to the national utility under the terms of a firm off-take agreement, if the national utility is not perceived to have a viable and long-term secondary market into which to sell this new capacity. Nevertheless, lenders may agree to finance a project that produces or processes a product, or service, for which there is actual or projected overcapacity. This is *true* particularly if the project is judged to be a low-cost operator (based on siting, technology, management or other advantage), and it is *judged* that the advantage will permit it to compete successfully for market share. Lenders sometimes refer to such a project as "ranking high in the merit order" and scrutinize all their borrowing clients during the due diligence stage at least partly from that perspective. What is referred to as demand, therefore, encompasses a variety of factors potentially impinging on demand over time. Aside from what has already been mentioned, this may also include the technology used by the project on hand as well as future technologies that may be featured in competitive projects. The evaluation may also extend to other operating advantages enjoyed by the project, including its location, cost of inputs, management skills and experience. Similarly, lenders do not tolerate readily any payment risk associated with the off-taker, the second of the five market-risk components in Table A6.1. The off-taker must meet a minimum standard

Table A6.1 Differences in the Level of Market Risk Assumed by **Projects** with Off-Take Agreements Located in Industrialized and Developing Countries

Components of market risk	Industrialized countries	Developing countries
Demand risk	Demand risk is the subject of intense due diligence in any Project Finance. Lenders are loathe to finance a project that manufactures, or processes, a **product** or service for which there is **insufficient, or** highly cyclical. demand.	Demand risk is scrutinized even more carefully in developing countries.
Payment risk	Lenders have very stringent standards **with** regard to the payment risk associated with the off-taker. In those occasional instances where payment risk is involved,	Lenders routinely face payment risks in off-take arrangements. particularly in low-income and middle-income developing **countries, and** routinely require credit enhancement.

Table A6.1 (continued)

Components of market risk	Industrialized countries	Developing countries
Payment risk	lenders will require credit enhancement.	
Price risk	To mitigate price variability, unit prices are often fixed in the off-take agreement. Lenders take comfort on the fact that the sanctity of contracts is generally recognized in industrialized countries, and, hence, contract terms or provisions will remain unchanged throughout the project's life.	Although unit prices may be fixed in the off-take agreement, there is risk in some developing countries that these may be renegotiated – at the option of government, e.g. Pakistan and Indonesia during the late 1990s, and India (Dabhol) in 2001.
Currency parity risk	There is no currency parity risk if the project's construction is financed in the same currency as its revenue.	In theory, the currency parity risk can be managed if the currency of the country is stable, or if the off-taker agrees to index the tariff so as to compensate the seller for any changes in parity between financing and revenue currencies. The effectiveness of the latter hedge, i.e. indexing the tariff, however, has not been fully tested in countries with high inflation and rapidly deteriorating currencies, e.g. Brazil.
Foreign exchange availability risk	There is no foreign exchange availability risk if the project's construction is financed in the same currency as its revenue	Foreign exchange availability is a risk in certain developing countries, sometimes arising quite unexpectedly, e.g. Russia and Asian countries during the Asian financial crisis.

of financial solvency or, otherwise, provide a credit enhancement to support its obligations under the off-take agreement. As discussed in Chapter 6, a common method for providing credit enhancement of a (government-owned) off-taker's obligations in a power purchase agreement (PPA), or similar off-take arrangement, is through an IA entered into between the

off-taker, its host government and the project vehicle. The government, in such case, provides support to the project vehicle by guaranteeing the off-taker's performance under its contract with the project vehicle. The strength of such a guarantee is, of course, dependent on the political and economic stability of the host country and its past record in meeting its international obligations.

Not all developing countries are perceived creditworthy, nor, for that matter, are the IAs that they enter into. When this is the case, a multinational institution or a bilateral entity, for policy or developmental reasons, may credit enhance the host government's obligations under the IA through PRG. When properly supported, this is considered by lenders (and their regulators) to be just as desirable as a project located in an industrialized country with a take-or-pay arrangement that does not require credit enhancement. By the same token, there are also occasions when an unsupported infrastructure facility located in a developing country is considered equally desirable. One example is an international pipeline that transports oil or gas from one country to another, if the receiving country is considered to be financially robust and the buyer is unquestionably creditworthy for its obligations under the throughput. Obviously, the throughput arrangement would have to be properly structured, for example, containing provisions requiring the buyer to transport (purchase) minimum throughput volumes periodically with the tolls denominated in foreign currency and appropriate LDs for failure to comply.

Project Finance lenders generally prefer to avoid price risk, the third of our market-risk components. Price risk arises in an off-take agreement when the requirement is imposed on the seller to deliver specific amounts of product periodically but at prices determined by market conditions prevailing at the time of sale. This type of off-take exposes the project to potential fluctuations in revenue generation since prices will vary from period to period.

Examples of off-take agreements that exhibit price risk include:

- Field developments (including purchase and sale) of oil or gas reserves.
- Mining of precious metals (such as gold and silver) and base metals (suchas primary aluminium, copper, zinc, nickel, lead, tin and aluminium alloy).
- Cultivation and/or processing of agro-industrial projects, such as cut flowers, fruits, vegetables and other food and wood products.

Occasionally, an unusual case may present itself where lenders are prepared to accept the risk associated with market-based pricing, based on one or more of the following factors, i.e., the lenders:

- Believe that the market price of the product will remain within narrow and predictable volatility.
- Are comfortable that the project will be an extremely low-cost, or a high-profit, producer of the relevant product, thus providing a large margin expected to insulate lenders from price fluctuations.
- Expect that the project's operating margin will be maintained because any significant change in market price that does occur will be proportionate to changes in the costs of production.

Where this is not the case, price risk is mitigated by the incorporation of one, or more, of operating margin stabilization strategies. Lenders will require the off-taker, usually the sponsor(s), to agree to one or more of the following:

- Amend the off-take agreement by agreeing to purchase the product from the project vehicle at an agreed long-term fixed price, rather than at spot.
- Develop an adequate hedging strategy in the forward markets in the form of a long-term price swap, or a cap and floor, contract protecting the project's revenue stream from falling prices. This particular strategy may pose certain problems. Ten-year or longer swaps or caps and floors are available in oil and gold but the forward markets are not liquid for silver beyond five years. In base metals, the forward markets do trade beyond the maximum term of futures contracts found in the exchanges although only in primary aluminium and perhaps, copper. Forward contracts in primary aluminium may go out as far as five years. Other base metals have liquid forward markets whose tenors match those found in the futures market, i.e., one to two years. Hence, a commercial bank may be willing to quote a ten-year forward swap, or cap and floor, on a particular base metal but its fee would surely reflect the inability to totally lay off the risk in the markets. Specifically, the risk premium for establishing the long-dated hedge would reflect the residual risk associated with having to cover a long-term price risk in a particular base metal through rolling one- to two-year hedges.
- Require the sponsor, or third-party off-taker, to provide margin stabilization support through a provision referred to as a floor pricing and tracking mechanism. Under such arrangements, the off-taker pays a floor price for the product when prices fall below the floor. Margins paid over the floor price during the period of low prices are recorded in the tracking mechanism as "credits". As the price of the commodity increases, the off-taker continues to pay the floor price when prices rise above the floor until credits earned in the tracking account are exhausted. Thereafter, the buyer pays the "fixed", or posted, market price.

Projects located in developing countries may be severely exposed to currency parity and foreign exchange availability risks, respectively the fourth and fifth market-risk components in Table **6A.1.** The former refers to the concern that the project's ability to service debt will be eroded by depreciation; the latter, to the possibility that foreign exchange may not be available in the country to convert local currency revenue to service foreign debt. Obviously, currency parity and foreign exchange availability and cross-currency risks are more typical in a project that is located in a developing country.

Incidentally, projects located in developing countries may be exposed to one, but not necessarily both, risks. For example, a power generation plant generating local currency, as mentioned previously, is protected through a provision in an off-take agreement that compensates for any changes in the parity between revenue and debt currencies by automatic increases in the tariff. The same is true in other classes of projects, such as a privately implemented and operated transmission line, hulk water treatment and supply facility, wastewater processing plant or a domestic pipeline for the transport of oil or gas. All have off-take agreements that generally provide for adjustments in the revenue base to compensate for depreciation of the revenue currency relative to the debt currency.

Projects with *foreign exchange availability* risk are finance-able if the host country has a strong balance of payment, no record of default on external debt, good political and economic management and a currency that is deemed to be strong (e.g. Singapore and Hong Kong). If this criterion is not met, the project is often finance-able if the central government guarantees availability of foreign exchange ***and,*** as discussed earlier, the government commitment is counter-guaranteed by a donor, or bilateral institution.

The foreign exchange availability and cross-currency risks are sometimes referred to as country **risk.** Although an off-take may be denominated in hard currency, as was the case with IPPs in the Philippines during the early 1990s, projects located in emerging countries are perceived to have country risk. Governments, for example, could pass subsequent legislation that (a)outlaws foreign exchange denominated contracts; or (b)requires private enterprises to deliver foreign exchange earnings to the monetary authority. In this case, even an exporting project would have to surrender its foreign exchange earnings at prevailing currency parity and buy back foreign exchange from the monetary authority at some future time when debt service was due. The timing of sales and purchases of foreign currency introduce the possibility of cross-currency and foreign exchange availability risks. To improve the project's ability to manage this risk, lend-

ers may require that the following stipulations be incorporated into the contractual documentation:

- Project vehicle and off-taker(s) enter into a purchase and sale agreement that is acceptable, clearly designating the minimum-maximum range of quantities to be sold and frequency of shipment, as well as acceptable market-based pricing.
- Sale of commodity, or other product, is made to specifically designated off-taker(s) approved by the lenders, deemed to be creditworthy and located in industrialized countries or mature developing countries not perceived to be vulnerable to a foreign exchange crisis.
- Off-taker(s), or buyer(s), pay amounts due from purchases into offshore trust accounts held by the project vehicle with commercial banks located in countries approved by the lenders. (Such an arrangement would require the consent of the host country authorities if it is deemed to contravene existing laws, regulations or practices.)
- Lenders take a floating lien on all deposits in the sales proceeds account under conditions that would permit them, if need be, to control all movements of cash into and out of the account.

The **offshore** escrow account structure described above, addresses the foreign exchange availability and cross-currency risks discussed earlier. As discussed in Appendix 4.2, there are a significant number of cases where international rating agencies have awarded such projects a rating that is higher than that of the host country. For example, Venezuela hosts a number of projects that export extra-heavy crude oil to top-credit US buyers under formal off-take agreements. Hard currency proceeds are received in offshore accounts under the effective supervision, if not control, of the lenders. Similarly, Trinidad hosts the project-styled Phoenix Park that receives natural gas from the National Gas Company (NGC) of Trinidad and Tobago and removes propane, butane and natural gasoline, known collectively as natural gas liquids (NGLs). It exports the NGLs and returns the processed lean "residue gas" to NGC, which in turn sells it to industrial users preferring to use dry gas, such as the power, methanol and fertilizer processors. Many examples could be cited of similar arrangements.

The offshore escrow account structure is used with many different kinds of exporters of commodities or industrial goods but particularly those that produce higher-value commodities, such as gold, silver and oil. These generally are held to be subject to greater expropriation risk than projects whose commodity can only be used by a limited number of buyers. Chapter 6 discusses the credit enhancements that are put into place by the sponsor(s) of, and lenders to, such projects.

Obviously, projects that have no off-take agreements are more fully exposed to market risk. These projects include those that generate foreign exchange revenues, e.g. container port terminals and, in some cases, airport terminals, and those that generate local currency revenues, e.g. toll roads. Without an off-take agreement, such projects are exposed to considerable market risk. A comprehensive market study is prepared by an acceptable party that is independent of the sponsoring group to determine the degree of interest the lenders have in its financing. If the project is located in an industrialized country, it will be exposed to all components of market risk, except country risk; if it is located in an emerging market country, it is exposed to full market risk. Within the developing country context, there are two project subsets to consider.

For example, a container port (belonging to one subset) generates at least some of its foreign exchange from relatively few shipping lines, which makes it somewhat easier to evaluate; a toll road (belonging to the other subset) generates only local currency from many users. Both projects are exposed to considerable market risk, but the toll road is obviously more vulnerable to full market risk. Where lenders choose to address such projects, credit enhancements are put into place for completion, term and devaluation risks.

Completion Risk

Lenders frequently require sponsor(s) of projects without off-take agreements to provide a more stringent completion guarantee, relative to that which would be provided for a project with off-take agreement. The guarantee may be structured around two elements, physical and financial completion. Tests related to physical completion will involve a judgement by the independent engineer (IE) that the project has been completed satisfactorily along with confirmation that the takeover certificate has been issued, or may be issued. This test is exactly the same, or at least similar, for projects with or without off-take agreements. However, an additional test related to financial completion may be applied to projects without off-take agreements. This test requires the project to arrive at its financial breakeven by a negotiated date before the project may be regarded as "completed". In effect, such a completion guarantee, with its added financial tests, will be outstanding throughout the construction period and, at least, a portion of the operating period. Up to that point where the completion tests are satisfied, the sponsor(s) will be guaranteeing all lenders' debt.

In lieu of a completion guarantee or contingent equity, lenders may be willing to accept a cash deficiency guarantee. This is an undertaking to inject capital into the project vehicle in certain circumstances, in this case

to cover the financial impact of a cost overrun or an inability to meet early sales targets. The money may be made available through share capital or subordinated loans. Subordinated loans by the shareholder related to a cash deficiency undertaking may be structured in a number of ways, and it is important for the parties to agree on the level of subordination. Chapter 10 has a discussion on types of subordinated loans and their terms.

Term Risk

Lenders generally do not like to make excessively long loans. Toll roads, and in some cases container ports, are examples of facilities that require longer tenors in order to be viable. The same is true for other types of projects that do not benefit from off-take agreements, such as cellular phone service providers, heavy rail projects and airport terminals. In such cases, lenders may require that their loans be subject to two payment options: (a) a "base term" of, say, 12 years for a prudent repayment schedule aligned with reasonable cash flow forecasts; or (b) an "optimal" plan, requiring repayment in a shorter period through a mechanism referred to as a **cash** sweep.

A cash sweep is a stipulation in a loan agreement that requires accelerated repayments of the loan applied in inverse order to scheduled principal payments, if cash available for debt service (CADS) is higher than some pre-agreed standard, thereby effectively reducing loan tenor and lender risk. Rather than allow this excess to be paid out in dividends, lenders and sponsor(s) share in the excess cash flow in a pre-agreed percentage.

Devaluation Risk

As discussed above, a classic off-take agreement in a developing country indexes tariffs to permit an increase in local currency revenue every time there is a devaluation of the currency. The provision protects the project's operating margin by providing enough ***incremental revenue*** through the indexation formulae to offset the ***incremental local currency*** needed to service foreign currency debt and dividends. The system works well for small changes in parity. There is the risk, however, that indexation of unit tariffs to inflation might not work well for runaway inflation and devaluation. Projects such as toll roads sited in developing countries are exposed to this risk. As a mitigating device, such projects are required by lenders to create a currency reserve account that is sized by taking into account the historical volatility and depreciation of the currency. To the extent needed, the reserve account is then drawn upon to cover operating and other expenses every time there is a significant devaluation.

APPENDIX 6.2

RISK SHARING FOR FM EVENTS IN A DEVELOPING COUNTRY

FM events may affect a facility in the following three ways:

- Impeding project's operation.
- Creating a need for restoration of the project.
- Leading to an early termination of the project.

For FM events impeding project's operation, the operative principle is that the project vehicle should be entitled to receive its capacity payment from the off-taker if its inability to operate is caused by a Political FM or Change-in-Law. The amount of capacity payment to be received, as shown in Table **A6.2.1,** will depend generally on (a) who declared the event; and (b) the level of dependable capacity that existed before the FM event.

This raises the issue of what happens if an FM event continues for more than an agreed time period. Continuation of an FM event for a period of six months or more will generally entitle either the off-taker or the project vehicle to terminate the contract, as shown in Table **A6.2.2.**

Table **A6.2.3** demonstrates one approach to risk sharing as a result of an FM event creating the need for a restoration or a reconfiguration.

TableA6.2. I FM Events and Mitigation through Capacity Payment

FM type	Declared by	State of project before FM event	Mitigation	Lender's risk
• Political FM • Change-in-Law	▪ Off-taker	• Fully operational	Off-taker pays: • Full capacity tariff	No risk
		Partially operational	• Full capacity tariff	
		Not operational	• Full capacity tariff	
	• Project vehicle	• Fully operational	Off-taker pays: ▪ Full capacity tariff	Financial modelling is required to evaluate the impact.
		• Partially operational	▪ Partial capacity tariff	
		• Not operational	• No capacity tariff	
Other FM – Other FM-A – Other FM-B	▪ Project vehicle		For Other FM-A. project vehicle is **not** entitled to capacity tariff. Insurance is presumed to cover it.	• Lender enters into direct agreements with insurance brokers to mitigate Other FM-A risks.
			▪ For Other FM-B, there is usually no insurance cover available.	▪ Other FM-B represents considerable risk to lenders.

Table A6.2.2 Termination of Contract As a Result of FM Events and Mitigation

FM Type	Contract terminated by	Mitigation	Lender's risk
• Political FM • Change-in-Law	• Off-taker or project vehicle	• Off-taker pays compensation*.	• No risk, if payment is made since lenders have proceeds assigned to them.
• Other FM – Other FM-A – Other FM-B		• If terminated pursuant to an Other FM-A event:, insurance programme will provide adequate compensation.	• Lenders are "co-loss payee". Financial modelling is required to evaluate the impact.
		• If terminated pursuant to an Other FM-B event:, there will be no compensation payment.	• Lenders are taking the risk of Other FM-B event.

* See Appendix 6.3 for the level of compensation due.

TableA6.2.3 Restoration Caused by F M Events and Mitigation

Restoration caused by/FM Type	Restoration amount	Mitigation	Lender's risk
• Political FM • Change-in-Law	• Below some defined threshold amount	▪ N o mitigation. Sponsor(s) will be required t o deliver "performance guarantee" t o address this concern.	• Risk is allocated t o the sponsor(s). There is no risk for the project vehicle provided that the facility is restored t o its original level.
	• Above threshold amount	• Supplemental tariff	▪ N o risk
• Other FM – Other FM-A – Other FM-B	• Below o r above threshold amount	▪ If caused by an Other FM-A event, insurance programme should provide adequate compensation. If caused by an Other FM-B event, no mitigation.	▪ Under Other FM-A, lenders are "co-loss payee". Financial modelling is required t o evaluate the impact. • Lenders are taking the risk of Other FM-B event.

APPENDIX 6 3

PRINCIPLES OF COMPENSATION

Compensation Payment upon Termination

Government's termination payment consists of the following components:

- Outstanding debt, including default interests.
- Outstanding shareholders' equity, e.g. base equity.
- Some estimate of return on equity.
- Additional shareholders' equity, e.g. contingent equity.
- Any other contribution of the sponsor(s), e.g. restoration supports.

IA formalizes termination payment. There are several reasons why termination may occur; among them are:

- Proiect vehicle event of default.
- Ceding authority event of default.
- Political FM.
- Change-in-Law.
- Other FM.
- FM under off-take agreement, gas supply agreement.
- Project vehicle's inability to obtain permits.

The operative principle is that the project vehicle would be entitled to receive *minimal* compensation if early termination occurs as a result of (a) a project vehicle default; or (b)an Other FM-B event outside the control of the host country. Note that "minimal compensation" usually amounts to outstanding debt, including default interests. The project vehicle would be entitled to just this level of compensation if it caused a default, or an Other FM-B event occurred, that led to the termination of the project.

The project vehicle is not entitled to compensation if the termination is attributable to an Other FM-A event. In this case, it is assumed that insurance will cover the damage to the facility.

With *any* other event leading to early termination – where the cause of early termination is not specifically attributable to a project vehicle default or an Other FM-B event – the project vehicle would be entitled to a higher level of compensation. For example, compensation as a result of a Political FM and/or Change-in Law may include a return to the sponsor(s) of project vehicle equity and some deemed future profit thereon.

Compensation is only paid upon the purchase of the plant and the transfer of title. Government is required under the terms of the IA to buy the plant for any event other than project vehicle default or Other FM-B.

Since it is not at fault in the latter cases, it is usually not required to do so. Hence, lenders are generally exposed to the risk of project vehicle default and/or an Other FM-B event.

APPENDIX 64

LENDERS LETTER AGREEMENT WITH BROKER

The following letter illustrates a typical agreement that is entered into between the lenders and the insurance broker in respect of the project insurance programme.

To: The Lenders

Dear Sirs,

ABC Project Development Company

In this letter:

Common Terms Agreement means the common terms agreement dated [ ] between the Company and the Finance Parties.

Company means ABC Project Development Company.

Construction Phase has the meaning given it in the Common Terms Agreement.

Construction Phase Insurance(s) means:

(a) the Key Construction Phase Insurance(s);

(b) employers' liability and motor vehicle insurance required by the laws of the People's Republic of Moravia to be maintained by the Company at any time during the Construction Phase; and

(c) any other insurance(s) required to be maintained by the Company at any time during the Construction Phase pursuant to the laws of the People's Republic of Moravia or under the Common Terms Agreement.

Finance Document means a document designated as such in the Common Terms Agreement.

Finance Parties are the banks and other institutions who are co-insured(s) under the Insurance(s) and are involved in providing funding, financing, financial accommodation and hedging facilities to the Company in relation to the Project. The phrase includes any agent and/or trustee, assignee, transferee, successor or novated, replacement or additional creditor of and in relation to any of the foregoing.

Insurance(s) means each of those insurance(s) and reinsurance(s) which the Company has agreed with the Finance Parties to procure and maintain in relation to the Project which are from time to time arranged by ourselves or by other companies within our group of companies.

Insurance Proceeds means all moneys payable by insurers or reinsurers in respect of the Key Insurance whether by way of claims, returned premiums, ex-gratia payments or otherwise.

Key Construction Phase Insurance(s) means:
(a) marine cargo/transit insurance;
(b) construction all-risks (CAR) insurance; and
(c) delay in start-up insurance (following marine cargo and CAR),
each as described in the Common Terms Agreement.

Key Insurance(s) means:
(a) Key Construction Phase Insurance(s);
(b) Key Operating Phase Insurance(s); and
(c) Public Liability Insurance(s).

Key Operating Phase Insurance(s) means:
(a) all risks (including machinery breakdown) insurance – fixed assets; and
(b) business interruption insurance following all risks,
each as described in the Common Terms Agreement.

Operating Phase Insurance(s) means:
(a) the Key Operating Phase Insurance(s);
(b) employers' liability and motor vehicle insurance required by the laws of the People's Republic of Moravia to be maintained by the Company at any time after the Construction Phase; and
(c) any other insurance(s) required to be maintained by the Company at any time after the Construction Phase pursuant to the laws of the People's Republic of Moravia or under the Common Terms Agreement.

Public Liability Insurance means the insurance described in the Common Terms Agreement.

Project means the development, construction, ownership, operation and maintenance by the Company of the [facility in question] in the People's Republic of Moravia.

Pursuant to instructions received from the Company, and in consideration of your approving our appointment or continuing appointment as brokers in connection with the insurance(s) to arrange, maintain and monitor the Insurance(s) covered by this letter, we confirm that:
(a) to the best of our knowledge and belief, the Insurance(s) are in full force and effect as evidenced by the attached policies or, failing those, cover notes, and comply with the Company's obligations with respect to Insurance(s) under the Finance Documents;
(b) to the extent that the same has been disclosed by us we have disclosed to each insurer and reinsurer every circumstance which we believe to

be material and of which we have actual knowledge in relation to the Insurance(s) or which we, as agents of the Company, are required by law to disclose to each such insurer and reinsurer and no such information disclosed by us was known by us to be inaccurate, incomplete or misleading;

(c) we are not aware (after making reasonable inquiry) of any reason why the Company or any insurer may be unwilling or unable to honour its obligations in relation to the Insurance(s), or to avoid the Insurance(s) or any claim, in whole or in part.

We hereby undertake in respect of the interests of the Company and the Finance Parties in the Key Insurance(s):

1. To notify promptly to all insurers from time to time of the Insurance(s) of the assignment to the Finance Parties of the Company's rights under the Key Insurance(s) and to the Insurance Proceeds and (where the Finance Parties have so required) of the assignment of the insurers' rights and interest in the reinsurance(s) to the Company in such form as you may reasonably require and to use our reasonable endeavours to procure their acknowledgement of receipt of such notices of assignment and to use reasonable endeavours to have the notices endorsed on the policies of Key Insurance, and to provide you with true copies of such notices and endorsements.
2. Before any contract of Key Insurance is entered into, renewed or renegotiated, to advise you promptly in writing if, in our professional opinion, that contract would not, if so entered into, renewed or renegotiated, comply in any material respect with the provisions of the Common Terms Agreement or any other relevant Finance Document.
3. To notify you:
   (i) promptly when we are informed of any proposed changes in the terms of the Key Insurance(s) which we reasonably believe would, if effected, result in any material reduction in limits or alteration in coverage (including those resulting from extensions) or increase in deductibles, exclusions or exceptions;
   (ii) promptly if any premium due has not been paid when due, or if any insurer or reinsurer gives notice of cancellation, non-renewal or avoidance of any Key Insurance or threatens to us to do so;
   (iii) promptly of any act or omission or of any event of which we have actual knowledge and which might reasonably be foreseen as invalidating any Key Insurance or claim, or rendering it void, avoidable or unenforceable in whole or in part; and
   (iv) immediately in the event of our becoming actually aware of any purported assignment of, or the creation of any security interest over, the Company's interest or rights in any of the Key Insurance(s).

4. To provide to you, at least 30 days prior to the expiry of the Key Insurance(s), all reasonable information regarding their renewal arrangements, including premiums and insurers and re-insurers and terms and conditions of renewal cover.
5. To disclose to you, promptly when we become aware of the same, any fact, change of circumstance or occurrence which we know to be material to the risks insured against under the Insurance arranged by us, and, if so requested by you to disclose the same to affected insurers and reinsurers.
6. To hold all Key Insurance policies received by us to your order.
7. To procure payment of any claim collected by us on behalf of the Company or the Finance Parties in accordance with the Loss Payment clause (if any) within any Key Insurance.
8. To pay promptly to insurers and, on behalf of insurers, to reinsurers all premium received from the Company in order to ensure that each Insurance is valid and enforceable in accordance with its terms.
9. Provided that the Company consents, to make available to you on reasonable request copies of any documents from our placing and claims files but excluding any information which is confidential to third parties.
10. To inform you in writing immediately if we receive or give notice that we are to cease to act as insurance brokers to the Company or insurers for the purpose of arranging, maintaining and/or monitoring any Key Insurance(s) previously arranged by us. Paragraphs 1 through 8 above are subject to our continuing appointment as insurance brokers in relation to the Key Insurance(s) concerned and the handling of claims in relation to them and shall automatically cease upon termination of our appointment for any reason (but without prejudice to matters arising prior to such termination).

We acknowledge that the Finance Parties have a direct interest in the Key Insurance(s) as coinsured(s) and an indirect interest in them arising from their security interest in them and in the claims proceeds deriving from them.

Save as provided in the preceding paragraph of this letter, and save insofar as we have given undertakings or assurances in this letter, it is to be understood by the Finance Parties that we have not acted as their agent and that accordingly they may not rely on any advice which we have given to the Company, and we do not represent that the Insurance(s) are suitable or sufficient to meet the needs of the Finance Parties, who must take such steps and advice of their own as they consider necessary in order to protect their own position.

This letter shall be governed by and construed in all respects in accordance with New York law.

Yours faithfully,
ABC Broker

Attachments: [policies of insurance and reinsurance]

PART III

Project Evaluation Tools

chapter

7 FINANCIAL MODEL

INTRODUCTION

This chapter focuses on the financial model's growth and change throughout the project development period, including its subsequent use by lenders as a tool to conduct negotiations with the sponsor(s) and prepare a project appraisal report. The financial model, however, is not the only aid used by lenders for this purpose.

Tools employed by lenders to conduct negotiations and prepare a project appraisal report consist of the offering memorandum (OM), the financial model prepared by sponsor(s) for the benefit of potential lenders, and the recourse to experts, recruited to assist in conducting due diligence. The terms OM, financial model, recourse to experts and project appraisal report as used throughout this chapter are meant to convey the following meanings:

- The borrowing company's OM describes the background, site and technical attributes of the project and assesses the sponsor's track record, roles and experience of other major participants, and the risk-sharing structure within the project documents. It also provides financial information including the estimated costs of building the project (project costs), the capital structure, sources and uses of funds, and proposed terms of equity and debt, as well as management plans related to mitigation of cost overrun and other open risks. In addition, an OM contains a detailed projection of the project's cash flow with a focus on its revenue, expenses, interest rate and fees, taxes and other items.
- A financial model may be defined as a computer-driven spreadsheet that processes a comprehensive list of input assumptions and provides outputs that reflect the anticipated real-life interaction between data and calculated values for a particular project. A financial model that is constructed on a computer-driven spreadsheet will incorporate discounted cash flow (DCF) analysis. Properly designed, such a tool is

capable of sensitivity analysis, i.e., calculating new outputs based on one, a few, or a range of data variations.

- Recourse to experts enables the lenders, under the terms of their understandings with the project sponsor(s), to access outside specialists to facilitate the review of the OM and financial model submitted by the sponsor(s). The identity and roles of these experts are outlined below:

  (a) An independent engineer (IE), a reputable engineering consulting firm assisting the lenders in evaluating the "technical" aspect of the project [see Outline of Common Terms Sheet, Section E. 1(i), on page 541]. Depending on the complexity of the undertaking, this will include a thorough examination of project costs, operating efficiency of the facility, and the risk-sharing structure of more technical project documents. Targeted project documents are the engineering, procurement and construction (EPC) contract, off-take agreement and resource supply agreement, as well as the proposed equipment maintenance requirements, spare parts inventory and the replacement/refurbishment schedule.

  (h) Lenders common counsel (LC), an experienced law firm responsible for assessing the broad risk-sharing structure of all of the project documents to determine whether the allocation of risks being borne by the project vehicle, including residual risks, is fair and equitable. The LC, working closely with a designated common host country counsel, reviews any conflicts that may exist between the law that governs the loan and finance documents (governing law) and that which applies to the environment in which the project will operate (host country law). It also examines host country law to determine whether there exist conflicts between host country law and selected provisions or agreements in the project documents. We discuss the issues arising from these potential conflicts in much greater detail in Chapter 12.

  (c) The market expert, a specialist firm assisting the lenders in evaluating the industry that the project will operate in, responsible for assessing the competitiveness of the facility relative to local, regional or international competing facilities. The market expert, if necessary, examines the proposed current and future price structure of the facility and the corresponding price sensitivities of its consumers, including a fairly detailed study of demand and price elasticity. A market expert is needed for those projects whose products, or services, do not benefit from revenue contracts or when the project agreements contain residual price and/or demand risks.

(d) Other experts recruited by the lenders on a case-by-case basis, e.g. an insurance advisor, environmental consultant and/or a model auditor. The role of the insurance advisor is to determine, in the context of the project documents, what insurance(s) the project should procure. It assists the lenders and sponsor(s) to determine the precise cost of insurance coverage, where and how to place the insurance to maximize coverage at least expense, what methods to use in monitoring and tracking the reinsurance programme to minimize payment risk [Section E. 1(h), page 540]. As discussed in Appendix **3.3,** the environmental consultant is recruited to complete an environmental and social audit and, on this basis, to propose an environmental and social mitigation plan. The report may be critical to securing the environmental permits necessary to construct or operate the facility. Finally, the model auditor's role is to review the accuracy and integrity of the model once it has been transformed into a lenders base case model, that is, after the negotiations between sponsor(s) and lenders are completed. The model auditor ensures that the architecture of the model is sound, all inputs are correct, and the formulae and linkages are reflective of what is contained in the project documents or what has otherwise been agreed among lenders, sponsor(s) and advisors [Section E. 1(j), page 541]. Once the model auditor completes his review, usually at or before financial closing, the model's function changes from a lenders' aid in project evaluation to a tool that will be employed by the inter-creditor agent. The inter-creditor agent uses the model to monitor and report the progress of the project during construction and track its compliance with the loan covenants during operations.

(e) **A** project appraisal report is a formal assessment of the viability of the proposed undertaking and, in particular, the robustness and predictability of revenue generation relative to its cash needs, particularly operating expenses and debt service. **A** project appraisal report is prepared by each lender for the purpose of securing institutional credit approvals to proceed with the loan. The report is prepared over a period of several months with the assistance of the tools discussed above.

With the background and definitions in mind, the specific objectives of this chapter are to convey understanding with regard to the following:

- The architecture of a typical financial model. The model most commonly used in project appraisal is a DCF-based model. To aid in un-

derstanding its architecture, a financial model for a container port is included in the case study at the end of this chapter. However, in some cases, the worksheets have been truncated to fit in the pages. Please log on to www.pearsoned-asia.com/khan to download the complete worksheets of the financial model. In Appendix 7.1, we describe certain other specialized Project Finance applications involving the use of alternative models based on probability analysis, possibility analysis and real options analysis.

- Changing role of the financial model during project development and operations. The sponsor(s) is the original author of the model. It develops the financial model during the pre-bid and contract negotiation stages, respectively, the first and second stages of project development. The applications to which the sponsor(s) puts the model in these first two stages are different from those employed by the lenders at the third, or finance-raising, stage of project development. Working with the experts, the lenders transform the model into a lenders base case model. The purposes and objectives of the lenders in undertaking this transformation is to complete due diligence, facilitate negotiation of commercial issues, arrive at a more precise forecast of the financial performance of the project and complete the project appraisal report. Subsequently, the lenders base case model is used to monitor and track the performance of the project during construction and operations.
- Types of commercial issues resolved with the assistance of the financial model. Typically, and as discussed further below, the financial model plays a role in the negotiation of a number of specific concerns that directly, or indirectly, affect the model's inputs and calculation worksheets. These include the project's capital structure, its loan profile, additional sponsor(s) support, resolution of quantitative covenants governing the disposition of free cash flow (FCF), and the rights of lenders to accelerate pursuant to a breach, or borrowers' obligations to pay dividends. A full resolution of these, and other similar, issues enables the lenders to complete the transformation of the sponsor's model into a lenders base case model.

  We duly note, however, that many aspects of loan negotiation do not affect the financial model at all. These are covered in Chapters 8–12.
- Use of the model for monitoring and tracking of the project. Subsequently, after the project loans are approved, the lenders base case model is used by the inter-creditor agent during construction to monitor cost overruns and other events that may have a material and adverse effect on the debt service cover ratios (DSCR) or the loan life cover ratio (LLCR). During operations, the inter-creditor agent uses the financial model to monitor the performance of the project and particularly the

ability of project management to meet conditions related to the payment of dividends.

ARCHITECTURE OF A TYPICAL FINANCIAL MODEL

A financial model contains all the informational elements and assumptions needed to project the financial statements, including the balance sheet, income statement and cash flow statement. It is usually expressed in local currency terms, i.e., the currency of the country in which the project is located. This is the case notwithstanding that some project revenues, or debt service, may be denominated in a hard currency. The projections are expressed in nominal, rather than constant, dollars fully reflective, for example, of the indexing of revenues to projected changes in inflation and foreign exchange parity. Typically, the financial model is organized in one spreadsheet comprising different worksheets.' A typical organization of a financial model is depicted in Figure 7.1, illustrating the standard parts (or worksheets) of a financial model. For illustrative purposes, a more detailed financial model is included in the case study.

As can be determined, a typical financial model contains three distinct categories of worksheets – input, calculation and output.

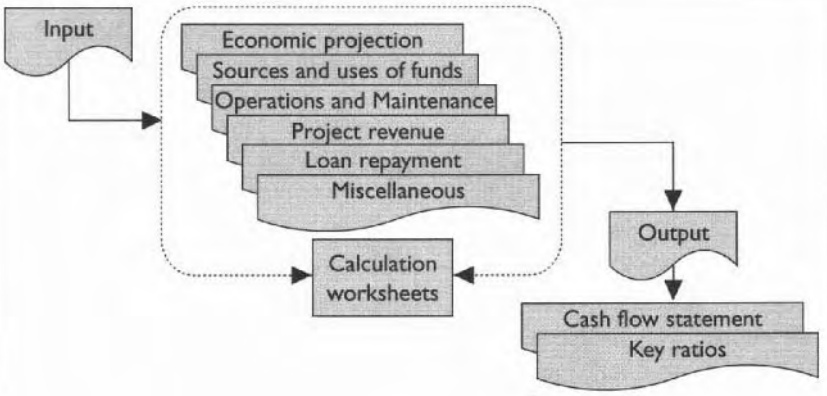
Input worksheets. These generally include basic information such as (a) project timelines; (b) economic assumptions; (c) technical data; and (d) capital cost. Also included are certain suppositions related to debt, e.g. amount, tenor, grace, interest rate, loan type, repayment structure and fees; as well as equity, e.g. amount, target and return on equity (ROE).

Other input data used in a financial model include tax information, working capital and reserves.

- Calculation worksheets. These contain various calculations, including:
  (a) Economic projection worksheet. Yearly inflation and currency exchange rate data are used to uplift revenues for projects with off-take agreements, or to convert financial statements from local currency into a foreign currency. In this regard, the model may include a forecast of:
    - ➢ Foreign inflation index (FII).
    - ➢ Local inflation index (LII).
      Exchange rate projections over project life (see Box 7.1).

'Worksheets are defined as arrays of rows and columns. The intersection of the rows and columns are called cells.

Figure 7.1 Architecture of a Financial Model



The contents of the standard worksheets are as follows:

- **Input Worksheet.** This worksheet contains most of the user inputs that feed into the rest of the model. Various assumptions, derived from the project documents or from other sources are input therein. Usually nothing is calculated in the input sheet; only hard inputs are used which flow into the balance of the model as appropriate.
- Calculation **Worksheet.** This is the most important part of a financial model. Calculations regarding projections such as inflation and exchange rate indices. calculation of interest during construction. computation of tariff, calculation of operation and maintenance expenses, etc. are done in the calculation worksheets.
- Output Worksheet. Readers may expect to get an overall summary from this worksheet Output includes pro forma financial statements, e.g. income statement, balance sheet and cash flow statement, and key ratios such as DSCR, LLCR, NPV, IRR and ROE.

(b) Sources and uses of funds worksheet, as illustrated in Table 7.1, using an example of a container port. These are broken down as follows:

- Uses of funds
  - Details of various project cost components and their timing.
- Sources of funds
  - Estimated drawdown profile of debt and equity.

Based on the above, the following are computed:

- Interest during construction (IDC).
- Commitment fees.
- Other fees, e.g. monitoring fees.

Box 7.1 Forecasting Inflation and Exchange Rate

Illustration of inflation index

(a) Foreign Inflation Index (FII) is forecasted using the following formula:

$$FII_t = \text{Base FII} \times (1 + \text{Foreign inflation rate})^t$$

where

FII_t	= FII forecasted for time period t
Base FII	= FII at bid date, i.e., 100
Foreign inflation rate	= Assumed inflation rate in foreign country

(b) Local Inflation Index (LII) is forecasted using the following formula:

$$LII_t = \text{Base LII} \times (1 + \text{Local inflation rate})^t$$

where

LII_t	= LII forecasted for time period t
Base LII	= LII at bid date, i.e., 100
Local inflation rate	= Assumed inflation rate in host country

Illustration of Exchange Rate Index

Exchange rate (XR) index is used to forecast the depreciation of the local currency relative to some benchmarked foreign currency, usually US dollar. One way of forecasting this is based on a concept known as purchasing power parity (PPP), which recognizes that exchange rate is dependent on relative inflation rate prevailing in two countries. Thus, XR for any time period is calculated using the following formula:

$$XR_t = \text{Base XR} \times [(1 + \text{Foreign inflation rate})/(1 + \text{Local inflation rate})]^t$$

where

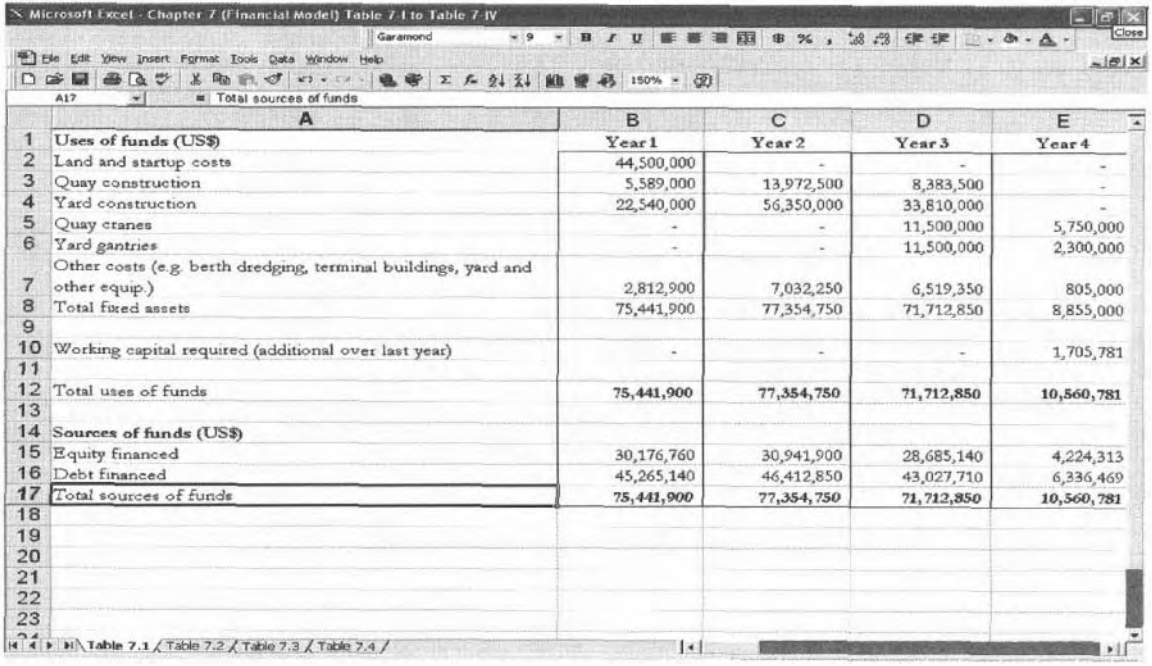
XR_t	= XR forecasted for time period t
Base XR	= XR at bid date, i.e., 100
Foreign inflation rate	= Assumed inflation rate in benchmark foreign country
Local inflation rate	= Assumed inflation rate in host country

(c) Operations and Maintenance (O&M) worksheet, as illustrated in Table 7.2.

These costs include:

- Fixed O&M costs:
  - Royalties.
  - Wages.
  - Lease rentals.
  - Fixed maintenance.
  - Spare parts.
  - Insurance.
  - General overheads.
- Variable O&M costs:
  - Employment costs.

Table 7.1 Sources and Uses of Funds Worksheet for Construction of a Container Port



Microsoft Excel - Chapter 7 (Financial Model) Table 7-I to Table 7-IV

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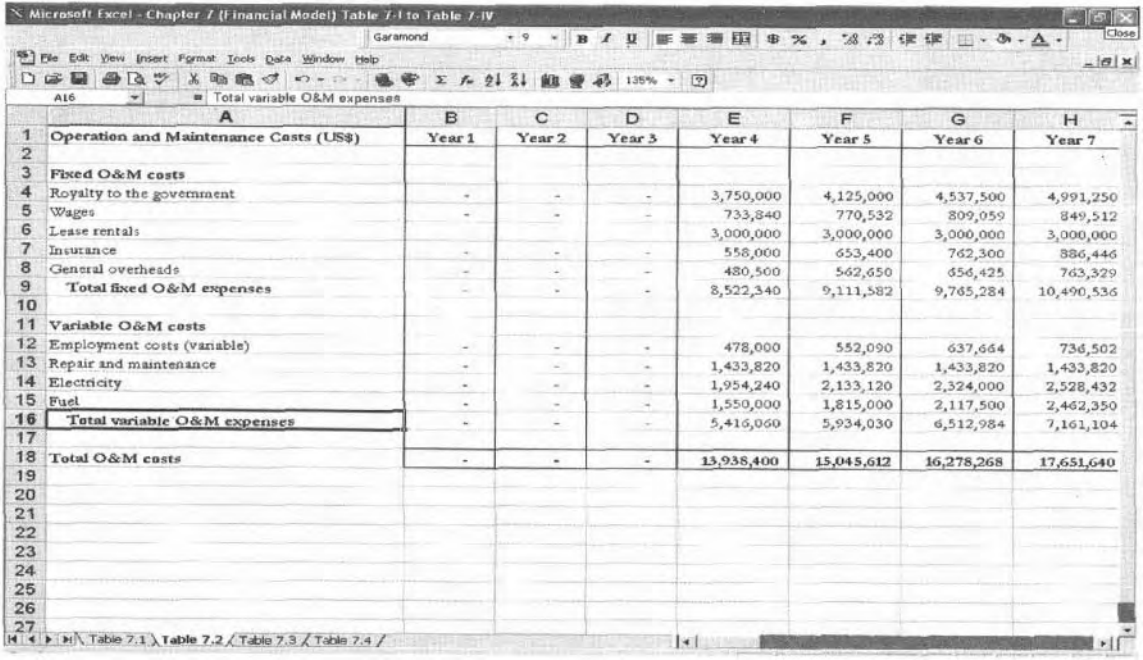
A17 = Total sources of funds

	A	B	C	D	E
1	**Uses of funds (US$)**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
2	Land and startup costs	44,500,000	-	-	-
3	Quay construction	5,589,000	13,972,500	8,383,500	-
4	Yard construction	22,540,000	56,350,000	33,810,000	-
5	Quay cranes	-	-	11,500,000	5,750,000
6	Yard gantries	-	-	11,500,000	2,300,000
7	Other costs (e.g. berth dredging, terminal buildings, yard and other equip.)	2,812,900	7,032,250	6,519,350	805,000
8	Total fixed assets	75,441,900	77,354,750	71,712,850	8,855,000
9					
10	Working capital required (additional over last year)	-	-	-	1,705,781
11					
12	Total uses of funds	**75,441,900**	**77,354,750**	**71,712,850**	**10,560,781**
13					
14	**Sources of funds (US$)**				
15	Equity financed	30,176,760	30,941,900	28,685,140	4,224,313
16	Debt financed	45,265,140	46,412,850	43,027,710	6,336,469
17	Total sources of funds	**75,441,900**	**77,354,750**	**71,712,850**	**10,560,781**
18					
19					
20					
21					
22					
23					

Table 7.1 / Table 7.2 / Table 7.3 / Table 7.4 /

Table 7.2 O&M Expense Worksheet for a Container Port



Microsoft Excel - Chapter 7 (Financial Model) Table 7-I to Table 7-IV

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A16 = Total variable O&M expenses

	A	B	C	D	E	F	G	H
1	**Operation and Maintenance Costs (US$)**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
2								
3	**Fixed O&M costs**							
4	Royalty to the government	-	-	-	3,750,000	4,125,000	4,537,500	4,991,250
5	Wages	-	-	-	733,840	770,532	809,059	849,512
6	Lease rentals				3,000,000	3,000,000	3,000,000	3,000,000
7	Insurance	-	-	-	558,000	653,400	762,300	886,446
8	General overheads	-	-	-	480,500	562,650	656,425	763,329
9	**Total fixed O&M expenses**	-	-	-	8,522,340	9,111,582	9,765,284	10,490,536
10								
11	**Variable O&M costs**							
12	Employment costs (variable)	-	-	-	478,000	552,090	637,664	736,502
13	Repair and maintenance	-	-	-	1,433,820	1,433,820	1,433,820	1,433,820
14	Electricity	-	-	-	1,954,240	2,133,120	2,324,000	2,528,432
15	Fuel	-	-	-	1,550,000	1,815,000	2,117,500	2,462,350
16	**Total variable O&M expenses**	-	-	-	5,416,060	5,934,030	6,512,984	7,161,104
17								
18	**Total O&M costs**	-	-	-	13,938,400	15,045,612	16,278,268	17,651,640
19								
20								
21								
22								
23								
24								
25								
26								
27								

Table 7.1 \ **Table 7.2** / Table 7.3 / Table 7.4 /

- Repair and maintenance.
- Electricity.
- Various resource inputs or utilities needed by project.

(d) Revenue for project with off-take agreement, as illustrated in Table 7.3 using an example of a power plant. The methodology with regard to the calculation of the capacity and energy tariff components is illustrated in Appendix **3.1.**

Projected items in the revenue worksheet include:

- Capacity payment.
- Usage payment.
- Elements permitted for recovery through tariff, including:
  - Capital costs.
  - O&M costs.
  - Pass-through(s), e.g. for resource inputs, fuel or utility costs.
  - Permitted adjustments for inflation, as described earlier.
  - Permitted adjustments for foreign exchange parity, etc.

(e) Revenue for project with market risk, as illustrated in Table 7.4. Market research data include:

- Demand growth assumptions.
- Per unit price adjustment assumptions.
- Forecast of revenue.

(f) Loan repayment. Debt repayment profile is based on annuity or equal principal repayment structure:

Annuity repayment structure consists of equal instalments of principal plus interest through loan life, similar to a mortgage structure. As such, the amount of principal that is recovered gradually increases over loan life, while interest declines.

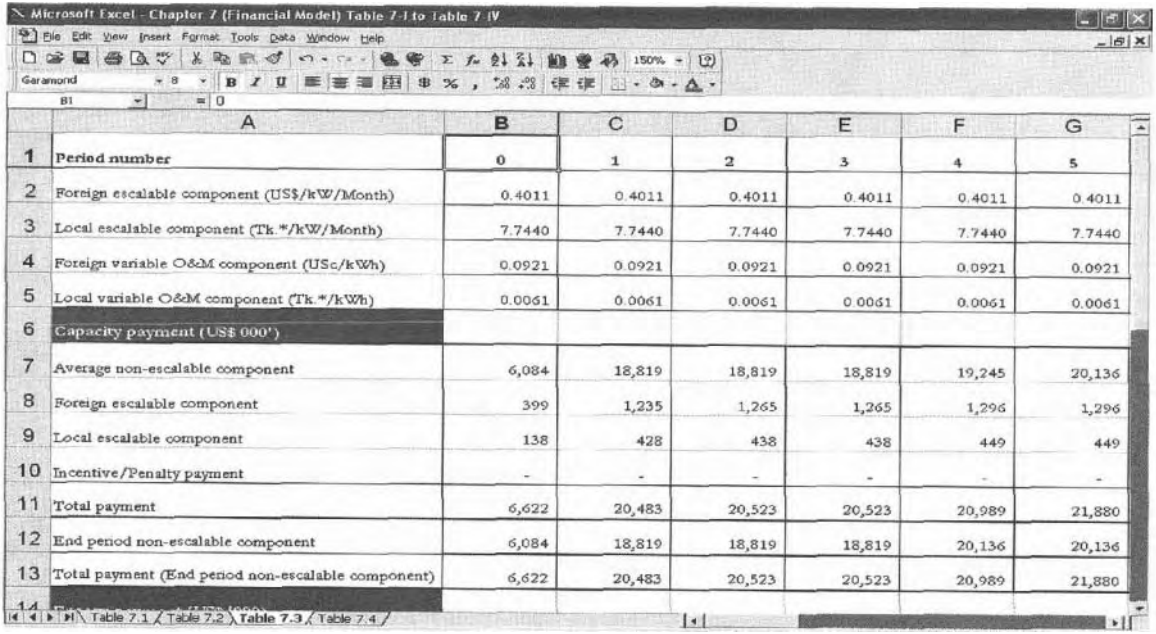
Equal principal repayment structure consists of a constant amount of principal to be paid over loan life with interest paid on the outstanding balances. In this structure, the amount of debt service decreases gradually over loan life.

(g) Miscellaneous calculations.

Depreciation. Depreciation calculation for the purpose of completing the income statement (see Appendix 7.2 for an illustration of how the depreciation worksheet may be organized.)

- Working capital. Calculation of working capital is straightforward. It is the excess of current assets over current liabilities. Typically, two to six months' working capital requirements are capitalized as part of the project cost.
- Debt service reserve account (DSRA).It is customary to capitalize one semi-annual instalment of debt service as part of the

Table 7.3 Revenue Worksheet for a Power Plant



Microsoft Excel - Chapter 7 (Financial Model) Table 7-I to Table 7-IV

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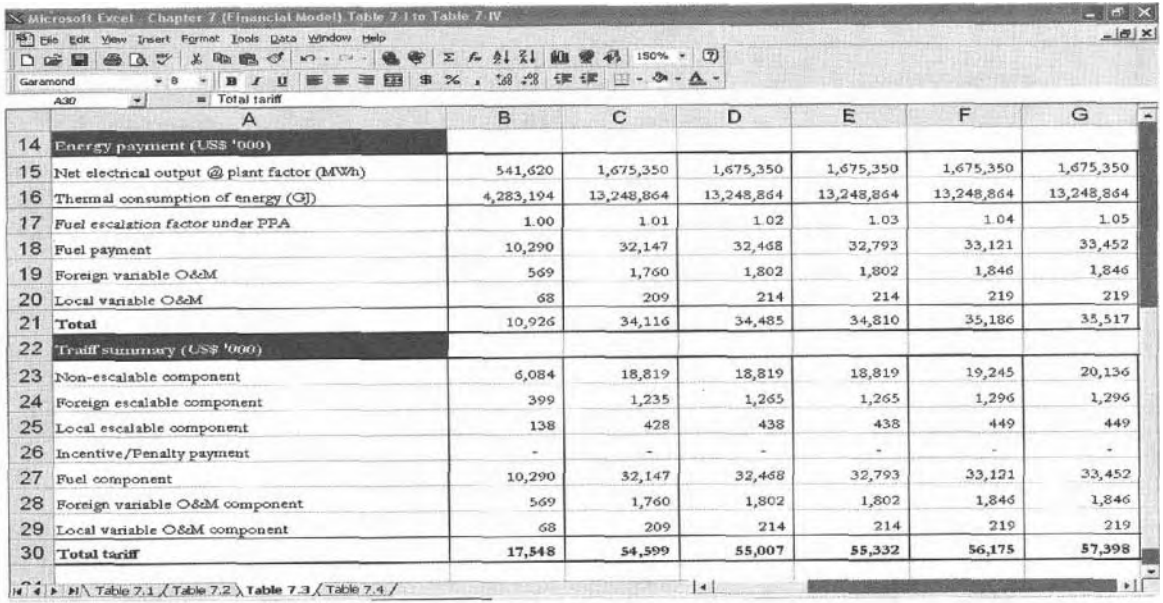
B1 = 0

	A	B	C	D	E	F	G
1	Period number	0	1	2	3	4	5
2	Foreign escalable component (US$/kW/Month)	0.4011	0.4011	0.4011	0.4011	0.4011	0.4011
3	Local escalable component (Tk.*/kW/Month)	7.7440	7.7440	7.7440	7.7440	7.7440	7.7440
4	Foreign variable O&M component (USc/kWh)	0.0921	0.0921	0.0921	0.0921	0.0921	0.0921
5	Local variable O&M component (Tk.*/kWh)	0.0061	0.0061	0.0061	0.0061	0.0061	0.0061
6	Capacity payment (US$ 000')						
7	Average non-escalable component	6,084	18,819	18,819	18,819	19,245	20,136
8	Foreign escalable component	399	1,235	1,265	1,265	1,296	1,296
9	Local escalable component	138	428	438	438	449	449
10	Incentive/Penalty payment	-	-	-	-	-	-
11	Total payment	6,622	20,483	20,523	20,523	20,989	21,880
12	End period non-escalable component	6,084	18,819	18,819	18,819	20,136	20,136
13	Total payment (End period non-escalable component)	6,622	20,483	20,523	20,523	20,989	21,880

Table 7.1 / Table 7.2 / Table 7.3 / Table 7.4 /

* Bangladesh Taka (local currency)

Table 7.3 (continued)



Microsoft Excel - Chapter 7 (Financial Model) Table 7.1 to Table 7.IV

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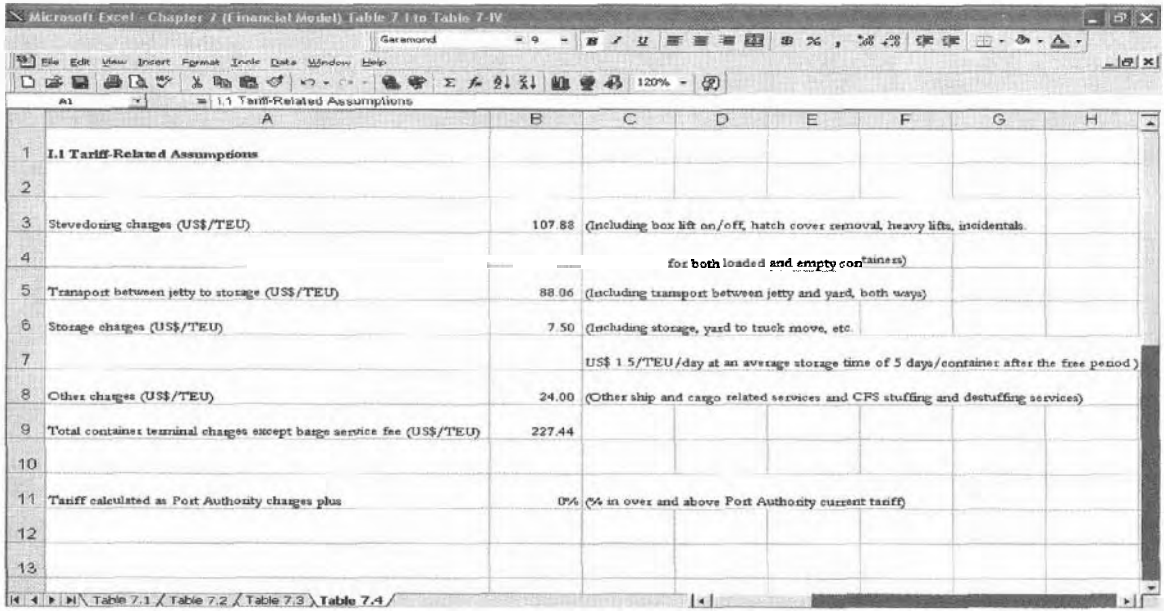
Garamond 8 B I U

A30 = Total tariff

	A	B	C	D	E	F	G
14	Energy payment (US$ '000)						
15	Net electrical output @ plant factor (MWh)	541,620	1,675,350	1,675,350	1,675,350	1,675,350	1,675,350
16	Thermal consumption of energy (GJ)	4,283,194	13,248,864	13,248,864	13,248,864	13,248,864	13,248,864
17	Fuel escalation factor under PPA	1.00	1.01	1.02	1.03	1.04	1.05
18	Fuel payment	10,290	32,147	32,468	32,793	33,121	33,452
19	Foreign variable O&M	569	1,760	1,802	1,802	1,846	1,846
20	Local variable O&M	68	209	214	214	219	219
21	**Total**	10,926	34,116	34,485	34,810	35,186	35,517
22	Tariff summary (US$ '000)						
23	Non-escalable component	6,084	18,819	18,819	18,819	19,245	20,136
24	Foreign escalable component	399	1,235	1,265	1,265	1,296	1,296
25	Local escalable component	138	428	438	438	449	449
26	Incentive/Penalty payment	-	-	-	-	-	-
27	Fuel component	10,290	32,147	32,468	32,793	33,121	33,452
28	Foreign variable O&M component	569	1,760	1,802	1,802	1,846	1,846
29	Local variable O&M component	68	209	214	214	219	219
30	**Total tariff**	**17,548**	**54,599**	**55,007**	**55,332**	**56,175**	**57,398**

Table 7.1 / Table 7.2 \ **Table 7.3** / Table 7.4 /

Table 7.4 Tariff Revenue Worksheet for a Container Port

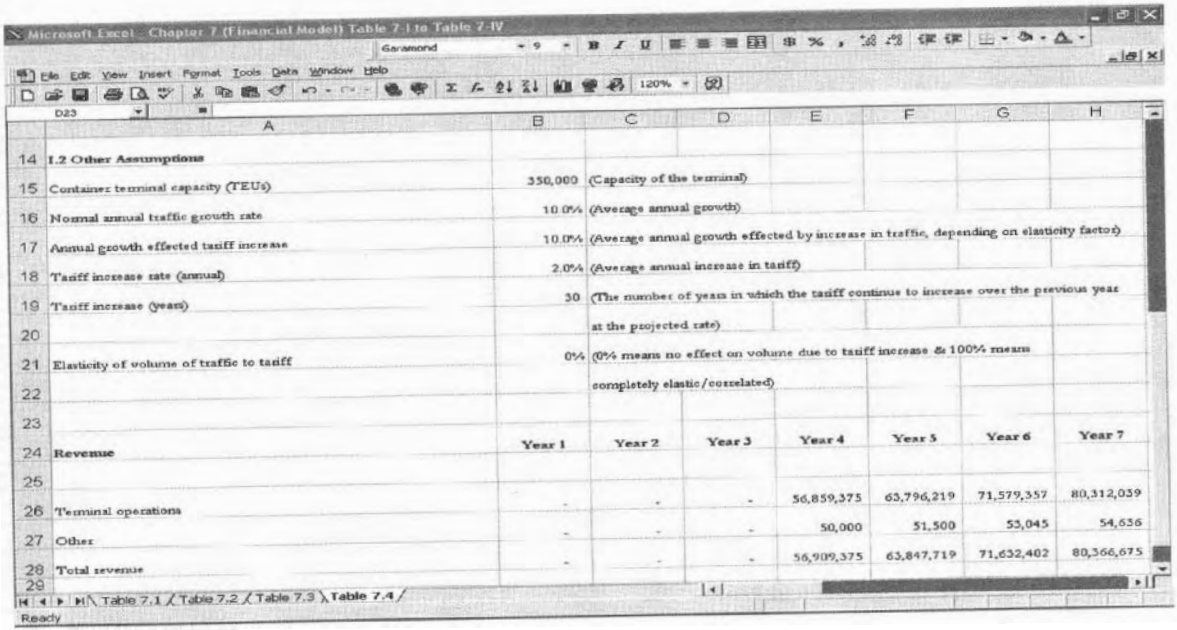


Microsoft Excel - Chapter 7 (Financial Model) Table 7.1 to Table 7.IV

	A	B	C
1	**1.1 Tariff-Related Assumptions**		
2			
3	Stevedoring charges (US$/TEU)	107.88	(Including box lift on/off, hatch cover removal, heavy lifts, incidentals
4			for both loaded and empty containers)
5	Transport between jetty to storage (US$/TEU)	88.06	(Including transport between jetty and yard, both ways)
6	Storage charges (US$/TEU)	7.50	(Including storage, yard to truck move, etc.
7			US$ 1.5/TEU/day at an average storage time of 5 days/container after the free period)
8	Other charges (US$/TEU)	24.00	(Other ship and cargo related services and CFS stuffing and destuffing services)
9	Total container terminal charges except barge service fee (US$/TEU)	227.44	
10			
11	Tariff calculated as Port Authority charges plus	0%	(% in over and above Port Authority current tariff)
12			
13			

Table 7.1 / Table 7.2 / Table 7.3 / Table 7.4 /

Table 7.4 (continued)



Microsoft Excel - Chapter 7 (Financial Model) Table 7-I to Table 7-IV

	A	B	C	D	E	F	G	H
14	**I.2 Other Assumptions**							
15	Container terminal capacity (TEUs)	350,000	(Capacity of the terminal)					
16	Normal annual traffic growth rate	10.0%	(Average annual growth)					
17	Annual growth effected tariff increase	10.0%	(Average annual growth effected by increase in traffic, depending on elasticity factor)					
18	Tariff increase rate (annual)	2.0%	(Average annual increase in tariff)					
19	Tariff increase (years)	30	(The number of years in which the tariff continue to increase over the previous year at the projected rate)					
20								
21	Elasticity of volume of traffic to tariff	0%	(0% means no effect on volume due to tariff increase & 100% means completely elastic/correlated)					
22								
23								
24	**Revenue**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
25								
26	Terminal operations	-	-	-	56,859,375	63,796,219	71,579,357	80,312,039
27	Other	-	-	-	50,000	51,500	53,045	54,636
28	Total revenue	-	-	-	56,909,375	63,847,719	71,632,402	80,366,675
29								

Table 7.1 / Table 7.2 / Table 7.3 \ Table 7.4 /

Ready

project cost. This is held in a special reserve account to be applied on a needed basis should the project suffer temporary disruptions in its ability to generate revenue. Although, debt service will be calculated in loan repayment worksheet, the reserve amount may be calculated in the miscellaneous worksheet.

Major maintenance reserve account (MMRA). An infrastructure project typically faces a major overhaul on a three-to-five-year cycle. Expensing such major maintenance when it occurs may impose a serious drag into that year's cash flow, and hence put debt: service at risk. Therefore, lenders generally prefer that a reserve be created over the years so that major maintenance of the facility may be addressed without risking debt service. Major maintenance reserve may be built using a similar principle to that inherent in (a) straight-line depreciation (SLD); or (b) sum-of-the-years'-digits (SYD) method. The issue is discussed in further detail in Chapter 9.

Others, e.g. technical service payment and management fees.

- Output worksheet. These include (a) pro forma financial statements, such as balance sheet, income statement and cash flow statement; and (b) various ratios, including debt cover ratios, and profitability ratios. Since Project Finance lending is cash-flow-based, the cash flow statement is of particular interest. Table 7.5 illustrates the typical structure of a cash flow statement created by a financial model. Debt cover ratios, depending on the project, may include the project life cover ratio (PLCR), DSCR, LLCR, drawdown cover ratio (DCR) and repayment cover ratio (RCR). The methodology for calculating these ratios is explained in Box 7.2. Profitability ratios include internal rate of return (IRR), return on asset (ROA) and return on equity (ROE).

Table 7.5 Typical Structure of a Cash Flow Statement

Line	Output
(1)	**Revenue**
(2)	**Operating cost**
(3)	**Interest**
(4) = (1) – [(2) + (3)]	**Net operating profit**
(5) = (4) + (3)	**Cash available for debt service (CADS)**
(6)	**Principal service**
(7)	**Tax**
(8) = (4) – [(6) + (7)]	**Free cash flow (FCF)**

Box 7.2 Use of Debt Cover Ratios in Project Finance

Project Life Cover Ratio

PLCR is defined as the net present value (NPV) of the project's CADS over its *contract life* to debt outstanding on any given day. In this case the numerator would consist of project CADS over all of the project's life, as defined by the project agreements, discounted by the average cost of debt in the project debt plan. In an infrastructure financing, *contract life* consists of the period from financial closing to the end of the concession, or off-take, period. In contrast, in oil and gas field developments, *contract life* is the date from financial closing to that date when 25% of the original reserves of the field in question remain in the ground given projected levels of extraction. In this case, the CADS are calculated up to, but not beyond, that date. A similar concept might be applied to the financing of any mineral extractive project, such as a gold mine. For both extraction and infrastructure projects, the denominator is simply the principal outstanding as of any given date.

Loan Life Cover Ratio

LLCR is defined as the NPV of project CADS over *loan life* to debt outstanding on any given day. In this case, the numerator consists of the project CADS over the remaining term of the debt discounted by the average cost of debt in the project debt plan divided by the amount of principal outstanding as of any given date.

Drawdown Cover Ratio

DCR is defined as a ratio, *the numerator of which is the PV of CADS over loan life*, with the denominator defined by the maximum amount to be borrowed from the lenders. During loan drawdown, there can be no breach of the DCR due to a circumstance affecting adversely *the projection of* CADS or that of the debt needed to complete the project, otherwise the event would entitle the lenders to a drawstop.

Historic Debt Service Cover Ratio

HDSCR is defined as a numerator consisting of CADS realized over the previous full year of project operations divided by project debt service over that same period, i.e. principal plus interest. By definition, the HDSCR for any project cannot be measured during the first full year of operations. Lenders, however, will frequently require an interim test at the six-month mark.

Projected Debt Service Cover Ratio

PDSCR is defined as a numerator consisting of projected CADS over the following full year of operations divided by project debt service over that same period, i.e., principal plus interest.

USE OF THE MODEL BY SPONSORCSI

Altogether, there are five distinct periods when the model is used by sponsor(s) or lenders to satisfy different purposes. We examine the first two financial model applications by the sponsor(s) under this section and the other three by the lenders over the next three sections in this chapter.

A financial model is prepared by the sponsor(s) usually pursuant to an intention to prepare a solicited or unsolicited proposal. During pre-proposal stage, the sponsor(s) develops a fairly simple and basic model. The primary purpose is to facilitate the submission of a convincing proposal in order to secure the rights to build and operate a particular project. The purposes served by the model during this early stage are as follows:

- Provide context within which go/no-go decisions, implementation strategy, or conflicts with internal corporate policies can be addressed and rationalized by the project development team and its corporate head office.
- At a global level, assist corporate decision-makers in deciding which projects to pursue among those competing for resources.
- Arrange and negotiate joint ventures with other potential sponsor(s) and/or investors.
- Facilitate negotiations with the ceding authority.

To serve the above purposes, the model may incorporate a few relatively "soft[m2] informational elements, such as:

- Determination of an acceptable hurdle rate for the project, including a reasonable margin to compensate for the "what could go wrong" scenario.
- "Rule-of-thumb" criteria for estimating construction and operating costs, perhaps amended to fit site and host country conditions.
- A capital structure consistent with the type of facility being built and fully reflective of the operating risks that are to be assumed.
- Assumptions regarding the identity of lenders, loan amounts, tenors, interest rate, grace period, upfront fees and payback structure.

For a project with a revenue contract, a few soft inputs, one or two calculation worksheets and several computer runs will collectively permit the sponsor(s) to "back into" the revenue it must have in order to meet the corporate hurdle rate. An illustration of this simple approach is provided in Appendix 3.1. Once annual revenue requirements are identified, it often is a straightforward matter to calculate unit prices, assuming that the yearly production/processing requirement is known. On the other hand, a project without a revenue contract may require a market study and a more "top-down" approach. More effort will go into determining the most suitable strategy for setting unit prices and adjusting them periodically – based, as

[m2] Soft inputs in this context refers to informational elements for which "informed" assumptions are made by the sponsors, rather than verified through due diligence.

appropriate, on the perceived elasticity of demand for the product or service. Revenues, net profit and IRR will subsequently fall out of this analysis. If the IRR is greater than the corporate hurdle rate, the sponsor(s) is more likely to bid, or submit a proposal, for the project.

In a second application, the sponsor(s) uses the financial model to assist in the negotiation of project agreements. During this phase, many amendments are made to the model. Rule-of-thumb project costs are replaced by inputs that reflect the agreed EPC contract as well as updated projections of non-EPC expenditure. The model's revenues are made consistent with a fully negotiated off-take agreement, or a more advanced market study. Project operating expenses reflect the agreements reached in the O&M agreement, and so on. During this stage, the sponsor(s) makes a number of preliminary approaches to a variety of lenders to test interest in participating in the project and seeks informal advice relative to market terms and conditions for debt. Following this intelligence-gathering exercise, inputs may have to be changed. Examples include the project's capital structure if lenders deem it aggressive, the cost of debt, upfront fees and other costs, as well as the attributes of the loan profile including loan life, grace period(s) and repayment schedule. Based on these refinements, the model's calculation worksheets are developed more fully with output provided for a larger number of discrete periods, e.g. six-monthly, rather than annual, periods.[3]

The OM will also be updated to reflect all changes. It, along with the financial model, is then circulated to those lenders that the sponsor(s) feels are most interested in participating in the project. Lenders approached might be advisory agencies such as investment banks or straight lenders such as commercial banks, export credit agencies (ECA),insurance companies, industrial finance companies, development institutions and specialized finance firms. Depending on the project's requirements, the sponsor(s) may seek the services of one, or more, of the following types of participants:

- An underwriter, an investment or commercial bank that assumes the mandate to become the financial advisor to the project and, pursuant to a successful negotiation of terms and conditions, is willing to guarantee that the debt being sought will be successfully placed. The underwriter takes the risk of a successful syndication by making up whatever shortfall there is between debt being sought and that successfully placed.
- A "best efforts" arranger, i.e., a bank or other lender willing to attempt a syndication of the project's debt but is not willing to guarantee the

[3]Lenders like to see the financial projections based on semi-annual, rather than annual, periods, since Project Finance loans are normally serviced semi-annually.

results by making up the balance between the debt sought and actually placed.

- Managing **bank(s),** a title assigned to one or more of the banks involved in the syndication. The title, generally, is more reflective of the bank's prominence in the marketing effort than it is to any direct responsibility the bank may have to the project.
- A club of lenders, where the combined capacity and interest in supporting the project is sufficient to accommodate the debt requirements of the project.
- A development lender, such as the International Finance Corporation (IFC) or Asian Development Bank (ADB) private window, capable of catalyzing some or all of the finance required by the project by virtue of its presence in the financing plan, through an "A" and/or "B" loan.

The finance-raising stage of project development is initiated when the sponsor(s) has been successful in receiving expressions of interest from an underwriter, or a club of lenders, sufficient to cover the debt needs of the project. For each lender, or an agent acting on behalf of several lenders, this "interest" is made formal through a mandate letter that is entered into with the project vehicle. Each individual lender in such a letter, as well as any underwriter or arranger chat may be part of the effort, acknowledges its interest in supporting the project vehicle with a specified level of debt provided that certain conditions are met. In support of this objective, the lenders agree to conduct a thorough evaluation of the project, its contract structure and its financial model for purposes of seeking approval from their internal credit committees to extend the proposed loan. The project vehicle, for its part, will agree to make available all the information it has in its possession relative to the undertaking. Additionally, it will agree to pay certain fees related to the loans and underwrite other expenses, such as:

- Upfront fees to be charged by the lenders for their loan facilities or for such special services as underwriting or syndication as well as commitment fees.
- Reimbursement of all relevant expenses related to the due diligence, including all expenses associated with the recruitment and participation of all the experts recruited by the banks to assist in the appraisal work (and of course, expenses associated with the project vehicle's own battery of experts to carry out such appraisal work).
  Certain expenses associated with the syndication activity, if necessary.

USE OF THE MODEL FOR PRELIMINARY DUE DILIGENCE

Once the mandate letters are in place, the sponsor(s) will turn the financial model, OM and project agreements to that lender, or lenders, with which it exchanged the mandate letters. Following their receipt, the lenders may have an initial meeting where functions and responsibilities relative to the project and its appraisal are apportioned.

The roles may be distributed as follows:

- Modelling bank, the institution that plays the key role in transforming the model into the lenders base case. The modelling bank works closely with the recruited experts to identify any discrepancies in information provided by the OM, sponsor's financial model and project agreements that require changes in model inputs or calculation worksheets. The recruited experts are responsible for expanding the project input, calculation and output worksheets, amending the model to reflect the results of the negotiation of commercial issues affecting the model's output, conducting sensitivity analysis for key commercial issues as needed, and verifying the accuracy of formulae used in the model in collaboration with the model auditor.

  The modelling bank, during implementation and operations, usually is the prime candidate to take over the role of inter-creditor agent.
- Recruiting bank is the institution that recruits the experts needed to assist the lenders during due diligence for the evaluation of key technical, legal, market, insurance, environmental, modelling and other similar issues. During the initial stages, the lenders will recruit those experts that can assist with due diligence on the project documents, i.e., the IE, LC, environmental expert, and, if appropriate, the market expert. Box 7.3 summarizes the scope of work to be undertaken by three of the experts recruited at this stage.

  The insurance advisor is incorporated into the team at a later stage once the lenders have completed the due diligence phase. The modelling advisor cannot be recruited until the transformation of the model to the lenders base case is complete – a milestone that occurs only when the negotiation of commercial issues related to the model is completed and related model inputs are reflected therein.
- Technical bank is a member of the lending group that will be responsible for coordinating the work and inputs of the IE. A technical bank, however, is *not* always required in a Project Finance.

  If a project is technically complex, the technical bank may, during implementation and operations, take on the role of monitoring adherence of the project vehicle to the technical covenants.

Box 7.3 Key Elements of Expert Due Diligence

Independent Engineer

- Compares project cost forecasts during construction period with those of other recently built facilities around the world that are similar in capacity and technology, and/or face the same challenges posed by site, environment, or country conditions.
- Assesses the competitiveness of the facility relative to other competing entities in the host country.
- Examines in particular the more technical contracts – the EPC, off-take, resource supply contract, etc. – to determine that the allocation of risks is fair and equitable. Due diligence will also check to determine that project outputs are consistent with model, make and manufacturer and/or to evaluate maintenance requirements, spare parts, replacement and refurbishing schedules.
- For each contract, identifies the residual risks of a technical nature being borne by the project vehicle to determine (a) whether the liquidated damages (LDs) structure is adequate; and (b) any "open" risks requiring sponsor's support.
- Examines in great detail, if a resource supply contract is involved, any and all issues at the global or national level that affect availability, price, transportation and quality of the input.

Lenders Common Counsel

- Reviews thoroughly all project agreements to assess from a legal perspective whether the allocation of risks is fair and equitable.
- Identifies the residual risks of a legal nature being borne by the project vehicle and determines what protections exist for the project vehicle, through LDs or otherwise.
- Reviews work product of the domestic legal counsel, particularly those elements that address the following key issues:
  (a) Creation, perfection and enforceability of the project agreements that have been executed.
  (b) Special circumstances of local law that are in conflict with the law that is to govern the finance documents, and therefore, must be taken into account in a final design of the security package.

Marketing Expert (Projects with (a) off-take but exposed to residual risks; or (b) full market risk)

- Analyses global and regional trends affecting the product or service that will be offered, including an assessment of issues that affect price, availability, quality, or transportation thereof.
- Studies market for the product or service, including a thorough assessment of its proposed price structure, including elasticity analysis.

Once roles are apportioned and due diligence is launched, the modelling bank will begin the initial work to convert the sponsor's model into a lenders base case model. Although the objectives are to change the perspective of the model from that of the sponsor(s) to that of the lenders, the modelling bank will agree to exercise joint control with the sponsor(s) over amended inputs and outputs during this transformation.

Activities involved in this effort may be characterized as follows:

- Familiarization. Initially, the modelling bank examines the architecture of the model, the accuracy of inputs, integrity of the formulae used in the calculation worksheets, loan profiling assumptions, and the range of outputs the model is capable of delivering. A key objective in this early work is to determine what changes are needed to the model's architecture and/or what additional outputs are needed to ready the model to assist in negotiations or completion of a formal project evaluation.

  Examples of loan profiling assumptions that will be reviewed by the modelling bank are as follows:

  (a) Loan commitment. The loan commitment should be calculated in the financial model as principal plus rolled-up interest during construction, the traditional manner in which Project Finance loan commitments are defined. This differs from a conventional loan where the loan commitment is defined by the amount of principal being sought.

  (b) Schedule of disbursement. Project Finance loans are multiple disbursement loans, with each draw tied to estimated needs as of a given date during construction. The modelling bank, of course, will review the assumptions inherent in the disbursement schedule. The approach of estimating disbursement requirements is appropriate since the data can be derived from the EPC contract.

  Loan documentation when drafted, however, generally enables the project vehicle to request loan draws in amounts and on dates that it specifies. Generally, notice to the lenders must be provided in accordance with the terms stated in the loan agreement, e.g. 20 days before disbursement, subject to review and approval by inter-creditor agent and provided that conditions precedent (CPs) to loan disbursement have been met. We will return to this subject in Chapter 8.

  (c) Loan repayment schedule. The modelling bank will want to ensure that the proposed repayment schedule is amortizing in structure, preferably level principal rather than annuity, with grace period(s), final maturity and average loan life falling within acceptable internal guidelines.

(d) Interest and fees. Interest should compound semi-annually and be payable for the first time six months after the commissioning of the project, or at some interval after that. The interest rate and fees will be checked to ensure that they are reasonably close to market for the type of project being considered. The financial model and OM should state the rate at which the interest is payable in terms of a rate per annum; however, the convention followed in the Project Finance market is that interest should be calculated as if each year had 360 days, rather than 365 days. See Chapter 11 for a discussion of day counting convention.

(e) Assumptions related to the interest rate hedge. The modelling bank will check to ensure that the interest is structured as a fixed-rate loan with some estimate provided for the cost of fixing the rate through an interest rate swap arrangement. Estimated swap costs will include three components: (a)the forward price, the methodology for its calculation described in Chapter 11; (b)transaction costs; and (c)credit risk, which is a reasonable credit premium, a margin intended to compensate the project vehicle's counter-party for its performance risk. Depending on the market conditions, creditworthiness of the sponsor(s) and the degree of support it provides to the project vehicle, the credit margin could be anywhere between 15 and 70 basis points, i.e., between 0.15% and 0.7%.

- Updating. During the due diligence process, some of the model's inputs will be modified as a result of (a) the recommendations of technical advisors; or (b)changing circumstances. Examples of assumptions that may change due to recommendations of expert opinion (subject, of course, to discussion, negotiation or agreement with the sponsor(s), are those related to (a) project costs; (b) capital structure of the project vehicle; (c)revenue forecasts, if too rosy or unrealistic; and (d)erroneous formulae in the calculation worksheets, etc.

  Examples of assumptions that may be amended due to changing circumstances are fees, interest or swap costs associated with the debt, if the yield curve is steeply rising, or, for that matter, falling; and/or economic assumptions related to global and domestic inflation or foreign exchange parity, if the pace of change in the economic variables is more or less than anticipated by the sponsor(s).

- Testing Sensitivity As part of due diligence, the modelling bank will conduct a series of sensitivity tests, the purpose of which is to measure the impact on some, or all, of the cover ratios defined in Box 7.2 of certain events that have adverse potential for the facility.

  Each project is different, and would have its own unique concerns.

The following, however, are examples of generic concerns common to all projects: (a) cost overruns, based on unanticipated change orders or delays in commissioning; (b) adequacy of delay and performance-based liquidated damages (LDs) in EPC; (c) rise in short-term interest rates as well as forward yield curve before financial close; (d) unanticipated rise in operating costs; and (e) interruption of construction or operations due to force majeure (FM).

- Incorporating agreements. Eventually, the modelling bank is also responsible for adjusting the model's inputs to reflect the outcome of negotiations. In this respect, lenders will engage in a series of negotiations with project vehicle management and sponsor(s) to resolve a number of quantitative issues related to the financial model. The broad objectives of these negotiations are to reach agreement on a number of specific concerns that directly, or indirectly, affect the model's output:
  (a) The project's capital structure.
  (b) Loan profile.
  (c) Cost overrun mitigation.
  (d) Resolution of quantitative covenants that are to govern the ability on the part of the lenders to declare an event of default (EOD) as well as on the part of the borrowers to pay dividends.

USE OF THE MODEL FOR NEGOTIATIONS

The financial model is the key tool used to negotiate with sponsor(s) the project's capital structure, loan profile, cost overrun mitigation and quantitatively driven covenants.

Capital Structure

Lenders' basic concerns are with the total capital required by the project and the amount to be contributed in the form of debt. They seek guidance from the IE, LC, market expert and others on this issue. Initially, the lenders request the IE to review the project's uses of funds, i.e., the project costs, to judge whether they are reasonable. In addition, the IE and LC will review and assess the relative strength of the off-take agreement, EPC and other project agreements. If no off-take is involved and the project is deemed to assume market risk, an independent market expert will be retained by the lenders to conduct a comprehensive market study. Box 7.4 identifies the sources of hard and soft information available to lenders and their advisors to facilitate the assessment of projected cash flows and arrive at a judgement in respect of a prudent capital structure.

Box 7.4 Sources of Information Available to the Experts and/or Lenders In Determining Borrowing Capacity

Line	Output	Input source: Projects with off-take agreement	Input source: Projects with market risks
1	Revenue	• Off-take agreement	• Market study • Concession agreement
2	Adjustments to revenue • Inflation • Exchange rate parity • Tariff reopeners	• Off-take agreement and expert opinion • Off-take agreement and expert opinion • Off-take agreement	• Macroeconomic data • Marcoeconomic data • Market study
3	Operating cost	• O&M agreement, if any • Land lease agreement (LLA) • Project vehicle projections of other costs	• O&M agreement, if any • LLA • Project vehicle projection of other costs
4	Interest	• Money market data • Swap market data	• Money market data • Swap market data
5	Net operating profit	• Derived number (Lines 1, 2, 3 and 4)	• Derived number (Lines 1, 2, 3 and 4)
6	CADS	• Derived number (Lines 4, 5 and 8)	• Derived number (Lines 4, 5 and 8)
7	Principal payback	• Due diligence on project costs • Due diligence on borrowing capacity • Sensitivity analysis	• Due diligence on market study • Due diligence on project costs • Due diligence on borrowing capacity • Sensitivity analysis
8	Tax	• Host country tax code • Implementation agreement (IA) in case host government is permitting any tax holiday	• Host country tax code • IA in case host government is permitting any waiver
9	Net cash flow	• Derived number (Lines 5, 7 and 8)	• Derived number (Lines 5, 7 and 8)

The four-step methodology illustrated below describes an approach used by some lenders to prepare for initial negotiations with sponsor(s) relative to the project vehicle's capital structure. This involves, as mentioned already, (a) a thorough review of project costs; (b) an assessment of project borrowing capacity; (c) agreement by the lenders on the amount of debt to be provided and its terms; and (d) negotiation with sponsor(s) relative to the amount of equity that must be committed. More specifically, these four steps involve the following activities:

- Step **1.** Lenders undertake a through review of the IE findings related to project costs; LC and IE conclusions regarding the assessment of the strengths and weaknesses of the EPC and off-take contracts; and, as appropriate, the market expert's report of the buoyancy of demand for product or service to be offered by the potential facility.

  Projects valued most highly by lenders are those with predictable project costs (in line with those recently implemented elsewhere that had similar technical attributes), as well as sound EPC arrangements and off-take contracts (entered into with financially responsible parties materially eliminating completion and market risks). In such cases, estimates of project cost, required funding, operating revenues and expenses will be considered relatively predictable and/or reliable for most operating scenarios.

  Projects that exhibit price risk, such as those involved in mining and agro-processing with off-take agreements that specify the quantities to be purchased at spot prices, are also finance-able if production costs are low relative to competing facilities and hedges are available to manage its revenue variability. Lenders, of course, will also consider projects without off-take agreements. Projects with full market-risk exposure are considered attractive in some cases but are more difficult to evaluate.
- Step **2:** The modelling bank, on behalf of the other lenders, calculates the maximum level of senior debt that can be carried by the project. This is defined by a numerator equal to the present value (PV) of cash available for debt service (CADS) over loan life, divided by the market LLCR for the type of project that is being attempted. The key issue in this calculation is reaching agreement on the forecast for CADS over project loan life. Once the modelling bank is comfortable with this projection, the PV of discrete periodic (annual or semi-annual) CADS is then discounted by a number equivalent to the average weighted interest rate embedded in all loans that will make up the debt plan. This numerator is then divided by that LLCR currently accepted by the market for projects of a similar nature. As shown in Table 7.6, if the project

Table 7.6 Notional LLCR for Different Projects with Differing Revenue Attributes

Key revenue attributes	Examples	Required LLCR	Special conditions
Full off-take, no cross-currency risk	• UK Private Finance Initiative projects • US projects • Cross-border oil or gas pipeline	1.20–1.30	All project participants are financially solvent
Full off-take with cross-currency risk	Many developing country projects, e.g. Independent power producer • Bulk water supply • Wastewater treatment facility • Waste disposal • Domestic pipeline	1.30–1.40	
Full off-take, with price risk. no cross-currency risk	• Mineral or resource extraction project • Agro-industry project	1.30–1.80	Required LLCR is at lower end of the range if revenue variability can be hedged with an over-the-counter or exchange instrument, and if project is low-cost producer
No off-take, no cross-currency risk	• Container port Merchant power plant	1.50–1.90	Required LLCR is at lower end of the range if port sponsor(s) is very experienced and enjoys a regional monopoly in port services
No off-take, cross-currency risk	Toll road	1.75–2.00	Difficult to finance; usually requires subordinated debt

has a creditworthy EPC and off-take, no market or cross-currency risk, the LLCR required by the market is relatively low, e.g. 1.20–1.30.

A project with an off-take agreement that protects against demand risk but contains price risk may require an LLCR of 1.30–1.80. Finally, if the project is totally exposed to market and cross-currency risk, LLCR

requirements may be higher, e.g. 1.75–2.00. Generally, riskier projects require the most robust revenue forecasts in order to be finance-able.

A simple illustration of a methodology that can be adapted for the above purpose is described in Appendix 10.1. The example there attempts to explain how lenders are able to determine if a project requires a subordinated lender. For example, in determining whether a project needs a subordinated lender, the analyst must be able to determine how much senior debt the project is able to carry.

- Step 3. The lenders collectively arrive at a judgement regarding the maximum debt that can be provided by senior lenders.

  This step generally is done at a "lenders only" meeting. The modelling bank will present its conclusions and recommendations based on its modelling efforts. The other lenders will have a chance to review the work, opine on results and participate in a collective judgement regarding the maximum senior debt that the project can carry. One can derive the level of equity required for the project by simply subtracting debt from project costs. Once done, these judgements are conveyed to the sponsor(s).

- Step 4. Negotiation between lenders and borrowers on this point is initiated when lenders, sponsor(s) and project vehicle management meet to discuss the issue.

  Obviously, the sponsor's interest lies in committing the lowest level of equity possible since this will have the effect of hiking the project IRR. In contrast, the lenders' interest is in arriving at a project capital structure that is prudent and self-sustaining, as it is more concerned with the safety and return of its money. The sponsor(s), in discussing the issue with the lenders, can be expected to question assumptions related to revenues, expenses, CADS, upfront fees, interest rates, price of an interest rate swap and discount rate used, as well as the LLCR selected to determine the project's borrowing power. Discussions and negotiations on these issues may be long and arduous; however, lenders' usually have the upper hand here, since they provide the bulk of the funding needed.

  The sponsor(s), however, may argue successfully that it should contribute less equity if the project is able to secure the interest of a subordinated lender. In principle, the argument may be sound if the subordinated lender is willing to provide quasi-debt on terms that are truly subordinate to senior lenders' claims in times of distress. Hence, lenders' acceptance of this issue will be predicated on the terms of participation of the subordinated lender that is recruited by the sponsor(s) to participate in the project. The commercial issues related to the participation of the subordinated lender are discussed in detail in Chapter 10.

Once negotiations are completed, the financial model will be updated to reflect the agreed capital structure, project costs, revenues and expenses. The updated model will also incorporate lenders' judgements concerning the costs of financing, including the cost of acquiring an interest rate swap or other hedge to neutralize the project's vulnerability to variable interest rates.

Loan Profile

A second group of commercial issues relates to loan profile. There are a number of elements to this negotiation, i.e., the loan availability period, first repayment date, grace period, final maturity, repayment schedule, percentage of equity to be infused by sponsor(s) before first loan draw, and pace of subsequent equity draws.

- The loan availability period is that period, under the terms of the common terms agreement (CTA), allowed to the project vehicle to fully draw the loan proceeds, subject to its meeting the related CPs. It starts at financial close and ends, generally, on or about that date when the facility is scheduled to be completed under the terms of the EPC contract.

  Loan availability period commences at financial closing and ends with the successful commissioning of the facility and its takeover by the project vehicle from the EPC contractor. From a contractual perspective, scheduled commissioning and takeover occur within a short period of each other. A failure on the part of the EPC contractor to meet these scheduled dates is a breach under the EPC contract. The ceding authority may also have the right to declare a breach if the facility is not successfully commissioned within six months of the scheduled commissioning date. This six-month period provides the contractor and sponsor(s) some breathing space to deal with unanticipated problems that may arise at the time the facility is being completed. Moreover, as discussed in Appendix 5.1, if the facility cannot pass the commissioning tests on the scheduled commissioning date, LDs under the EPC contract should normally be adequate to cover the financial consequences of delays for the six-month period from the date of breach under the EPC contract to the subsequent breach under the concession or off-take agreement.

  If satisfactory completion of the facility is not achieved, the sponsor(s) under a well-structured EPC contract will have the right to reject the installation. Its ability to do so will be tightly controlled by lenders through their reserved discretion(s) (RDs). The RDs, as discussed in Chapter 8, are special loan conditions limiting the exercise of rights

by the project vehicle under the terms of the project agreements, if, for example, management does not have prior approval from lenders. In view of the existence of RDs, it is possible for lenders to agree to a longer availability period extending up to, or immediately before, the time when the ceding authority is able to declare an EOD.

As shown in Figure 7.2, lenders prefer to limit the availability period from financial closing to the date following scheduled commissioning and takeover. A shorter availability period exercises tighter controls over the project generally and advances the first repayment date under the loan schedule. Sometimes, lenders will agree to define the availability period in a manner that incorporates both lenders' and sponsor's positions [Section H. 14(a) and (b), page 554].

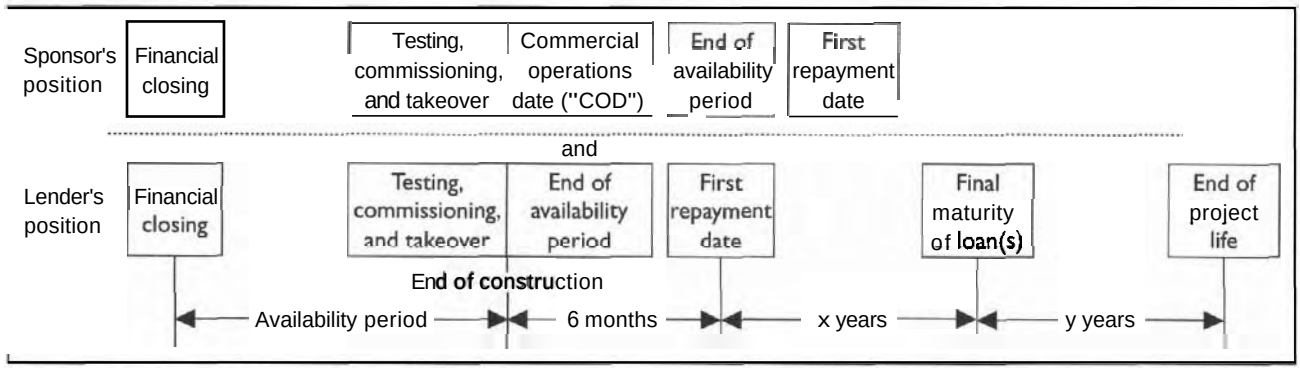
- First repayment date is the date for the first scheduled repayment of debt service. Depending on the terms of the loan, the debt service due on the first repayment date may consist of (a) principal and interest; or (b) interest only.

Lenders, generally, will opt for the first scheduled repayment date to occur six months after the scheduled commissioning/takeover. The project vehicle, on the other hand, may prefer for this date to occur later, depending on the length of its trade cycle. For example, under the terms of its off-take agreement, a project vehicle may be entitled to bill monthly for services provided. Provisions in the agreement may require that the invoice be submitted on the 15th day of the month following each service month. Other stipulations within the same agreement may provide the off-taker with a full 3045-day period before it must respond to the invoice with payment. Hence, between billing and collecting provisions, 45–60 days are lost. If the first scheduled repayment date is exactly six months after project commissioning, the facility will have provided a full six months of service but will only have collected for four, or five, of these. In that case, the revenues in its possession during this initial semi-annual period may be insufficient to meet debt service, and even if sufficient, the DSCR for that period may be low, possibly triggering a default.

There are at least two ways to handle this. The first alternative is to defer the first repayment date to the eighth month after project commissioning. This has the disadvantage of increasing the commitment from the lenders due to the extra two months' roll-up of interest. A second option is to reduce the debt service for the first repayment period by requiring an "interest only" payment. For this case, a moratorium would exist on the payment of principal for that one period.

The two options are simple and relatively straightforward but they

Figure 7.2 When Does Loan Availability Period End?



may trigger internal guidelines on the extension of loan grace periods, as the discussion below suggests.

- Determining the need for grace period, loan life and principal repayment schedule may involve separate considerations:
  (a) Tailoring debt draws during construction to meet EPC and other project cost outlays, including the requirement for initial working capital discussed above.

  If the stage payments under an EPC contract are payable monthly, the project vehicle will prefer drawing debt monthly under the loan agreement, i.e. 12 times a year, in an amount sufficient to meet scheduled EPC and other project costs. The lenders may disagree with this number as being too numerous, entailing excessive and unnecessary overhead costs, preferring no more than four disbursements each year. Since fewer disbursements may result in higher interest roll-up, the issue may be important to the sponsor(s). In such case, a compromise by the parties may have to be found.

  (b) Tailoring debt *service* to accommodate operating cash *flows*. Lenders have some flexibility in tailoring debt repayments to cash flow availability but face constraints, as well.

  First, lenders have severe constraints in extending the final maturity under a loan. Given the attributes of a project, most will have a maximum financing period, or tenor, that they will consider. Traditionally, the loan start date is defined to be financial closing, irrespective of whether there is any loan draw on that date. It extends through construction to the date on which the final instalment under the loan is due, i.e., that date when the loan is fully discharged. Limitations on loan tenor are applied more strictly to certain projects, e.g. those with no off-take, than others. In an overlapping way, the same constraint may apply to host countries, with some granted shorter tenors than others depending on their sovereign credit rating (SCR)or other indicator of creditworthiness.

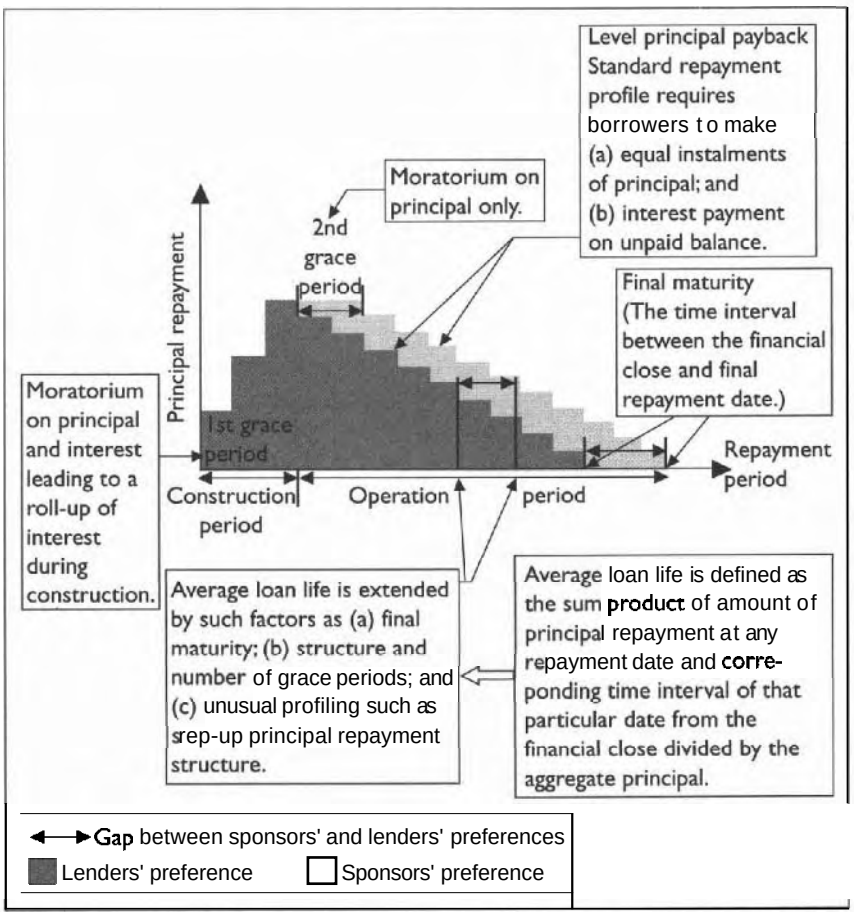
  Second, there may be policy constraints in respect of the maximum grace period that can be offered. There are two grace periods in Project Finance. In a typical loan agreement, the construction phase of a project is defined as a grace period under the loan agreement, during which neither principal nor interest is paid. For this period, interest is accrued and rolled-up into the overall project cost. In addition, lenders sometimes grant a second, more limited, post-commissioning grace

period that obviates for a short time the need for the borrower to make principal instalments. In contrast to the construction phase, where neither principal nor interest is payable, the second post-commissioning grace period may permit a moratorium on principal instalments only, with interest fully payable. Post-commissioning, for example, a lender may forego the payment of principal for one or two semi-annual instalments in order to ease the strain on early cash flow but at the same time will require payment of interest to avoid a further increase in its exposure. In practice, however, lenders limit the length of both grace periods. By internal guidelines, a lender may not be allowed to extend credit to a project that requires a construction period in excess of three years, and/or may not be permitted to extend any moratoria on principal repayments, post-commissioning. Frequently, the intention of these guidelines is to ensure that only the most robust projects or those with the most predictable revenue are considered. Where there is such flexibility to build in grace periods into a loan agreement, Figure 7.3 illustrates the areas of negotiations between the lenders and sponsor(s) with regard to their profiling.

- Third, some lenders apply an additional policy constraint, related to average loan life. Some lenders are particularly concerned with this concept, arrived at by calculating the average maturity of each and every principal instalment, measured from financial closing. For some lenders, a loan with an average loan life of less than x years is acceptable, while those with longer average loan life would not.
- Fourth, some lenders may not permit the use of certain tailoring devices such as ***skip-payments,*** for example, to accommodate a period of little or no forecast cash flow; *ascending principal* ***repayments*** to solve the problem of weak, early operating period cash flow; or ***descending principal repayment*** to finance an asset that has dwindling resource and revenue characteristics. Restrictions of this type limit the tailoring that can be done to precisely match cash flow with repayment schedules.

- Percentage of equity to be infused prior to first loan draw [Section A. 2(b), page 528]. This is the amount of equity that must be infused into the project vehicle by the sponsor(s) prior to the lenders permitting the first draw under their loan(s). Typically, this is set at between 30% and 40% of the total equity commitment. Its purpose is to require the

Figure 7.3 Areas of Negotiations between Lenders and **Sponsor(s)** with Regard to Loan Profiling

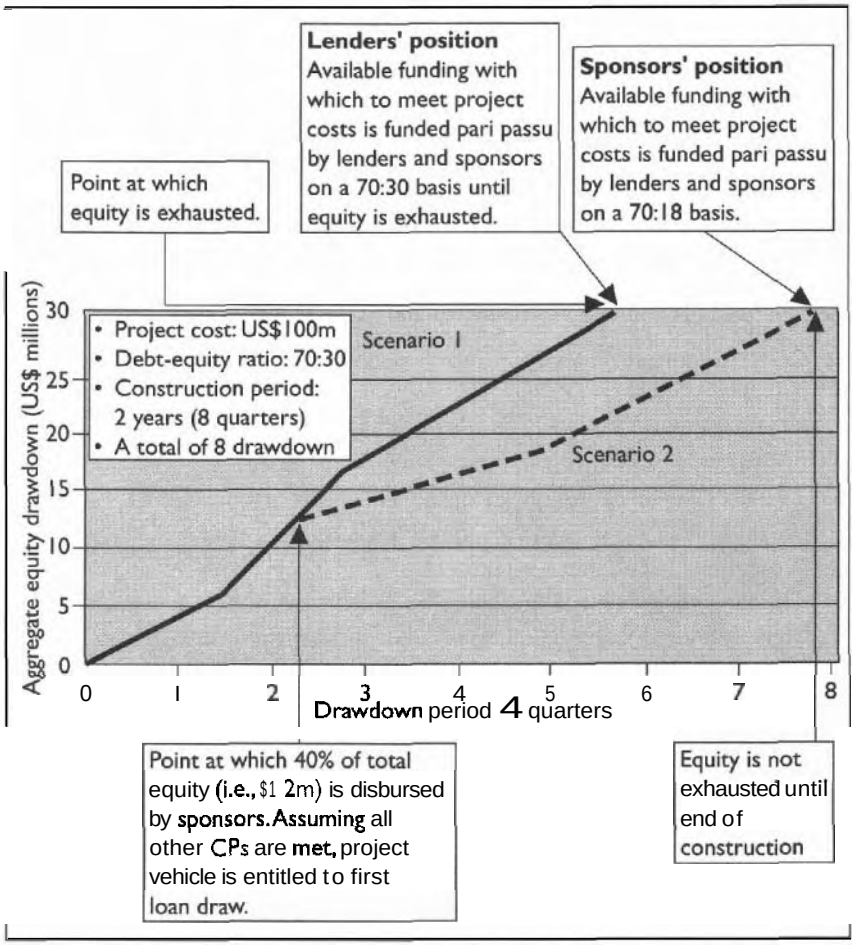


sponsor(s) to put at risk funding sufficient to give comfort to the lenders that the former will not abandon the project and will follow through with all its commitments to complete the project.

- Pace of subsequent equity draws [Section A. 2(b), page 528]. After the project vehicle meets all CPs, lenders require that every drawdown of debt be accompanied by a defined amount of equity. If the sponsor(s) has infused 40% of its committed base equity into the project vehicle as a CP to first loan draw, it will he required to deliver the remaining equity on some fixed schedule acceptable to both parties. The issue can be resolved in a number of ways. Figure 7.4 illustrates two scenarios.

  Suppose that the agreed capital structure for a project is 70:30 and its total cost is US$100 million. In such case, lenders are obligated to

Figure 7.4 Pace at Which Equity is Drawn



provide $70 million in debt, as soon as all loan CPs are met, while the sponsor(s) contributes $30 million in equity. Furthermore, the sponsor(s), prior to first loan draw, is required to provide $12 million, or 40% of its total equity obligation. The sponsor(s)' position is likely to be that remaining equity and debt draws should be done at a ratio of 18:70, i.e., at a debt-equity ratio of 70:18. This equity disbursement schedule is advantageous to the sponsor(s) as it slows down the equity contributions and, all other things being equal, hikes up the return. The lenders, in contrast, may take the view that the debt-equity ratio should be 70:30, conforming to the agreed capital structure until the sponsor(s) commitment is exhausted. This, of course, tends to accelerate the equity infusions and lowers the IRR but provides better protection for the lenders.

Cost Overrun Mitigation

Several variables are involved in addressing the cost overrun risk: magnitude and timing of sponsor(s) support during the construction period, as well as the level of contingent equity to be provided if a full completion guarantee is not required.

"Magnitude" in this context relates the question of whether the sponsor(s) provides full credit enhancement during construction in the form of a completion guarantee; or more limited support, in the form of a contingent equity. The sponsor(s) is more likely to have to provide a full completion guarantee if one of the following factors is present:

- Construction of the project poses serious environmental or technological challenges.
- The technology has never been used before and the manufacturer will not provide warranties in respect of performance.
- The EPC contractor is considered to be of marginal solvency, overextended, or exposed to material contingent risks.
- Project has no off-take agreement.
- The site has potential exposure to liabilities of an environmental or archaeological nature that may arise during the construction period, which the EPC contractor is not willing to assume.
- A high percentage of projects in the host country are completed with material delays.

If none of these factors is present, the lenders may agree to a more limited contingent equity requirement. Arriving at a mutual agreement regarding the appropriate level of contingent equity to be provided by the sponsor(s) is a very difficult and arduous negotiation. A basis for resolving this issue is developed, usually by the modelling bank or the IE, using DCF or Monte Carlo simulation, as discussed in Appendix 7.1.

"Timing" of the sponsor(s) support is determined by the date on which the obligation to complete the project or provide contingent equity falls off and is no longer valid. The fall-off in guarantee normally occurs at the project completion date, i.e., the date when all the required technical and financial events have occurred defining the completion of the facility. We discuss this issue further in Chapter 9.

Quantitatively Driven Covenants

After the capital structure and loan profiling have been agreed, the modelling bank will run the projections to ensure that all historic debt service cover ratio (HDSCR)and projected debt service cover ratio (PDSCR), as

well as the LLCR, are above acceptable standards. If the loan repayment period is over 15 years, or 30 semi-annual repayment periods, the HDSCR, PDSCR and LLCR at each repayment period over the life of the loan must be at the level considered acceptable by the internal credit committee of the lender.

An issue of considerable importance to the sponsor(s) is the benchmark to be used by the lenders to declare a dividend stoppage, or trigger a default. Typically, payment of dividends at any time during loan life is dependent on the following conditions having been met [Section G. 1(s), page 549]:

- A successful project completion is achieved.
- No default has occurred, or is likely to occur.
- First principal instalment is made.
- HDSCR for the last two repayment periods is greater than the agreed minimum (with the agreed minimum varying depending on the type of project being implemented but seldom set at less than 1.2);
  PDSCR for the next two repayment periods is greater than the agreed minimum (with the agreed minimum varying depending on the type of project being implemented but seldom set at less than 1.2).
- DSRA and MMRA are fully funded.

Since the above conditions for payment of dividends are fairly standard, the project vehicle or sponsor(s) may lack the bargaining position to modify them. They may choose instead to seek a more beneficial definition of HDSCR or PDSCR.

A key issue in this respect is how to define CADS. There are two definitions, depending on whose position is taken:

Lenders' Position
CADS = Revenues – Expenses for the period

Sponsor's Position
CADS = [Revenues – Expenses for the period] + [Current account cash balances available at the beginning of the period] + [Reserve account balances available at the beginning of the period].

As the above shows, CADS may be calculated net of, or inclusive of, cash balances. The sponsor(s) will often take the position that cash balances should be taken into account in calculating CADS. Since CADS is the numerator of the DSCR, a larger CADS has the effect of improving the ratio. Hence, inclusion of cash balances will be easier to meet the DSCR benchmark for paying dividends.

Predictably, the lenders' view on the matter will be quite different. Lenders will take the position that CADS is a measurement of the going concern strength of the project at any point. Hence, including the cash balances will overstate the ability of the project to generate revenues and, in fact, may mask serious problems. Their definition of CADS, if accepted, will make it harder to meet the required benchmark for paying dividends.

Resolution of this matter is very much a matter of the bargaining strength of the parties. In any case, the version that is agreed by the parties is the one that is programmed into the financial model for purposes of monitoring and tracking the project's performance and, in particular, its ability to pay dividends. The same issue affects the negotiation of a related default clause.

Moreover, a failure of the project to maintain an HDSCR or a PDSCR above a certain level would give the lenders the right to declare a breach. This default benchmark, in practice, is set at a level that is greater than 1.0, but its actual level will vary depending upon the project being financed.

USE OF THE MODEL FOR MONITORING PROJECT PERFORMANCE

Construction Period

The construction period is defined as the period from financial close to the date when the first repayment instalment is due. During the construction period, the inter-creditor agent maintains the financial model and records related to:

- Infusions of debt and equity by the parties, as they take place.
- All project costs as incurred, including development and other construction costs.
- All finance costs, including the upfront fees, hedging costs, funding of required reserves, and interest roll-up due to loan disbursement.

The inter-creditor agent will collaborate closely with the IE, and review the progress during the construction phase of the project for the purpose of detecting any sign of trouble. Both parties will be particularly watchful of any potential development that may result in a cost overrun, and will be quick to assess its impact on the HDSCR, PDSCR and LLCR [Section H. 21(a) and (b), page 556]. If a very large cost overrun is anticipated, with the potential to materially affect these ratios in an adverse manner, the lenders may be able to declare a breach of the loan agreement, based on a material adverse change or some other similar covenant.

Operations Period

The operating period is defined as the period from the facility's commissioning to the end of the off-take or concession period. It totally overlaps with the loan repayment period which begins at the time the first instalment of principal is made and continues until the final payment is made and the loan is fully discharged.

During the operating period, the inter-creditor agent and project vehicle management will collaborate on each repayment date to calculate the HDSCR, PDSCR and LLCR. The purpose of this exercise is to ensure that no defaults have taken place for failure to meet debt service cover and that the project vehicle is entitled to pay dividends to the sponsor, if other conditions for doing so are met.

The financial model may have other purposes during operations as well. It may be used to assess the impact of any annual operations budget submitted by the project vehicle to the lenders. Hence, it becomes a tool for the lenders to approve/disapprove the annual operations budget if its implementation otherwise might be expected to lead to a problem. The base case financial model is used by the project vehicle and utility during operations (and sometimes during construction) to negotiate a tariff reopener. A tariff reopener occurs when the off-taker has accepted responsibility for the financial consequences of an event that results in the need for a project to incur unanticipated project costs. For example, the national utility in a developing country, if owned by the government, will often take responsibility for a change-in-law that mitigates thermal emission in a power generation plant. In such case, the utility and project vehicle would use the model to negotiate an upward adjustment to the tariff that would permit the project to recover eventually the unanticipated investment.

Review Questions

1. What tools are available to lenders with which to evaluate a Project Finance?
2. Describe the architecture of a model. Why is there such an emphasis on ratios in the outputs to a typical Project Finance model? What other output is emphasized in a Project Finance?
3. What are some of the differences in terms of Euro-market conventions between a financial model that is Project Finance-oriented and one that involves a traditional loan?
4. What kind of experts are available to assist lenders with due diligence?
5. Describe the five uses to which a Project Finance model is put to.

6. What are the four steps in determining whether a project needs more equity? Or more subordinated debt, as the case may be?
7. In what ways do you think that ratios are used to reduce lenders' risks? In what ways does their use in loan agreements shift risks from lenders to borrowers?
8. What are some of the internal policy constraints faced by lenders when negotiating a loan profile?
9. Why do you think that lenders and borrowers would negotiate avidly the pace of equity draws?
10. What are some of the more important quantitatively driven covenants and in what way are they used to control the disposition of **FCF?**
11. What is the difference between **FCF** and **CADS?**

APPENDIX 7.1

INVESTMENT EVALUATION TOOLS IN PROJECT FINANCING

Chapter 7 discusses the architecture and the various uses of a financial model. These models are based on a DCF analysis.

DCF analysis originated with Irving Fisher who first introduced the concept of PV that is today widely used in the appraisal of projects.[4] To evaluate project feasibility, a DCF model utilizes net present value (NPV) and IRR. Since these techniques are based on the time-value-of-money concept, their reliability depends on the accuracy of forecast cash flow (both benefits and costs) and assumptions related to their timing.

PV, in simplest terms, is the discounting of future cash flows, CF_t, using an appropriate discount rate, r, for the purpose of evaluating an investment. The following expression defines it:

$$PV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t}$$

where

CF_t = forecasted cash flows at period t
n = project life
r = opportunity cost of capital or the equilibrium rate of return on securities issued by a project with characteristics and risks equivalent to the project being valued

DCF applications include the evaluation of greenfield projects and operating firms as well as financial securities – stocks, bond, etc.

Operating firms, acquisitions or divestitures, are appraised generally using the NPV technique. NPV is the present value of a project's future cash flows minus its cost. It is the technique of finding the PV of all cash flows (both inflows and outflows) associated with an investment. The equation is as follows:

$$NPV = -CF_0 + \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \ldots + \frac{CF_n}{(1+r)^n}$$

[4] **Paxson, Dean and Wood, Douglas,** ***Encyclopedic Dictionary of Finance,*** **Blackwell Publish-**

or

$$NPV = \sum_{t=0}^{n} \frac{CF_t}{(1 + r)^t}$$

where

CF_t = initial cash outlays, or the cost of the project
CF_t = expected net cash inflows at period t
r = the project's weighted average cost of capital (WACC)
n = project life

NPV serves to satisfy the following query: if an investor wants to put some investment into a project, i.e., CF_0, does the project add value to his or her investment when cash flows (dividends) derived from the investment, CF_t, over the project life, are discounted at the investor's required rate of return, r? As stated before, r is some minimally accepted rate of return on securities issued by a project with similar risk characteristics.

The decision rules for choosing an investment project following NPV technique are as follows – if *NPV is* positive, the investor should accept *the* project, while if *NPV* is negative, he or she should reject it. If two investments with positive NPVs are mutually exclusive, the one with higher NPV should be chosen.

In contrast, *IRR* is a primary tool used in the evaluation of greenfield projects. IRR is defined as that discount rate which equates the PV of a project's expected cash inflows to the PV of the project's costs or cash outflows, i.e.:

PV (Inflows) = PV (Outflows)

Practically speaking, it is the rate that makes NPV equal to zero, i.e.:

$$NPV = -CF_0 + \frac{CF_1}{(1 + IRR)^1} + \frac{CF_2}{(1 + IRR)^2} + \frac{CF_3}{(1 + IRR)^3} + \ldots + \frac{CF_n}{(1 + IRR)^n} = 0$$

or

$$NPV = \sum_{t=0}^{n} \frac{CF_t}{(1 + IRR)^t} = 0$$

There are two types of IRR that may be calculated in a greenfield Project Finance deal: project IRR and equity IRR. To calculate the project IRR, we

can take the total cash outlay required to finance the implementation of the project as the value of CF_0[5] while CF_t is the total net cash flow generated by the project after O&M expenses are met. The return to capital, in this case, is regarded as the project IRR. To calculate equity IRR, we can substitute CF, by the total amount of equity infused, and CF_t by the free cash flow available to equity after all operating, maintenance and debt service outflows are met. Equity IRR can be derived in this way.

The decision rule for accepting a project using IRR are as follows – if a project has an IRR higher than the WACC of the project, or the opportunity cost of capital, the *firm* should accept the project; otherwise, the project should he rejected.

Extending the same PV concept, we can also value a stock or a bond, or more generally, any asset that has expected future cash flows and a discount rate that can be estimated. Let's consider the example of a bond. A 5-year bond pays 8% annual coupon, has a face value of **$1,000** and is currently trading at **$950.** Yield on bonds of comparable risks is currently 9% per annum. When the required discount rate is applied to the bond, the investor finds the PV to be $961. Hence the bond is a good bargain and should be purchased. Similarly, we can discount the expected dividend streams and terminal price of a stock to arrive at its value.

From a Project Finance perspective, there are several drawbacks associated with DCF-based analysis.

First, the various investment parameters used in DCF analysis, i.e., CF_n, CF_1, CF_2 ... CF_n, and r, cannot be practically estimated with high degree of certainty.

Second, DCF cannot quantify non-monetary (qualitative) factors. DCF does not capture managerial flexibility in making mid-course corrections, nor does it take into account future investment opportunities in the analysis – both actions presumably capable of increasing, or decreasing the project's original WACC, and hence its profitability.

The third limitation relates to the use of a single discount rate over project life to find the PV of the expected future cash flows. This introduces a conceptual issue. Benjamin C. Esty and others point out that this approach is faulty because the capital structure of a project changes over time, for example, as debt is amortized.[6] Hence, both the returns required by equity and, by implication, WACC, should change as debt is retired.

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[5] In greenfield Project Finance, it should he noted that CF_0 may occur over very long construction period amounting to several years.

[6] Esty, Benjamin, C., "Improved Techniques for Valuing Large-Scale Projects", *Journal of Project Finance,* Spring 1999, pp. 9–22.

It has been pointed out that one way to solve the problem of changing leverage is to use multiple discount rates rather than a single one throughout the project's entire life. Additionally, the way to solve the problem of book value weights is to employ an alternative valuation technique referred to as quasi-market valuation.[7]

Failure to incorporate the effects of changing leverage can result in serious valuation errors in other ways. For example, a company may have a fixed-rate debt on its book reflecting market conditions at the time the loan was executed, but the valuation of that debt may change over time depending on the current (market)interest rate for a debt of similar characteristics. In this case, relying on a single discount rate would also be misleading.

Fourth, DCF is not suitable for conducting sensitivity analysis. More specifically, it is unable to model the impact of change of more than one key variable or risk factor at a time. This is generally known as sensitivity analysis. With DCF-based sensitivity analysis, an analyst may be interested and capable of performing the following exercise: "What happens to a oil exploration project if world oil price drops to **$8.00** per barrel from **$11.40** per barrel?" Because all other variables remain unchanged, sensitivity analysis performed this way is limited to a mere static analysis.

To overcome one or more of the above deficiencies, Project Finance practitioners rely on (a) probability analysis; (b) possibility analysis; and (c) real options analysis.

Probability/Possibility Analysis

Probability analysis overcomes the limitation associated with DCF-based sensitivity analysis. It utilizes "Monte Carlo simulation"[8] to model combined effect of numerous risk factors according to their relative frequencies.[9]

Monte Carlo simulation is frequently used in project appraisal. In Project Finance setting, a common problem to which Monte Carlo simulation may be applied would include determining the need for, and amount of, contingent equity. The problem is of unique importance since contingent equity

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[7] Ibid.

[8] The term Monte *Carlo* simulation originated from the city called Monte Carlo, Monaco, where the primary attractions are casinos containing games of chance.

[9] Mohamed, Sherif, McCowan, Alison K., "Modelling Project Investment Decisions under Uncertainty Using Possibility Theory", International *Journal of* Project Management, Issue 19,2001, pp. 231–241.

may be required to complete the construction of a project and/or prevent cost overruns from spilling over to deterministically affect DSCR during operations. Use of Monte Carlo simulation, therefore, permits a multivariate analysis, which incorporates simultaneously all the variables that impact on the amount required.

The steps are as follows:

- Define the key risk factors for a project cost overrun. For sake of simplicity, this may be dependent on two elements: delay and rise in interest rate.
- Randomly generate 10,000 scenarios for the value of the two elements. One has to do it in a manner that is consistent with an assumed joint probability distribution of two variables.
- Determine total project cost under each of the 10,000 scenarios.
- Form a histogram of those results. This represents a discrete approximation for the probability distribution of the project cost. The mean of the histogram is the expected project cost. Hence, the absolute difference between the expected project cost and the budgeted project cost is the amount of contingent equity required.

This solution would only yield an approximate amount. By using more scenarios – say, 20,000 instead of 10,000 – the precision of the result could be improved. Typically, the precision of a Monte Carlo simulation is proportional to the square root of the number of scenarios used.[10]

Probability analysis is also constrained by several limitations. First, estimating relative frequencies for many project parameters is difficult. Second, probability analysis may not work very well in project appraisal if project uncertainty is a result of inherent fuzziness of the parameter estimate rather than randomness. Finally and perhaps most importantly, it also fails to incorporate the impact of non-monetary or qualitative aspects of a project.

Possibility analysis, an outgrowth of probability analysis, is used to overcome the shortcomings associated with probability analysis. Possibility theory is based on the premise that all values of the project parameters with a certain range are possible, with the exact value being unknown. In using possibility analysis, the user only needs to determine a possible range, and perhaps the most likely value for each investment parameter, without the estimate of each risk factor's relative frequency.[11]

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[10] www.contingencyanalysis.com\montecarlosimulation.html

[11] **Mohamed, Sherif, McCowan, Alison K., "Modelling Project Investment Decisions Under Uncertainty Using Possibility** Theory", **International *Journal* of Project Management, Issue 19,2001, pp.** 231-241.

It is paramount in Project Finance that cash flows be predicted taking into account both qualitative and quantitative factors to handle the inherent uncertainty associated with selected investment parameters including construction, O&M costs, interest rate, inflation, depreciation, tax rate and operation life. In valuation of a project, the advantage of using possibility analysis is that it is capable of combining both monetary and nonmonetary aspects of a project.

Therefore, Sherif[12] and others propose applying possibility theory in project appraisals, which may be a better technique in that it allows the user to incorporate his or her perception of riskiness of qualitative aspects, which would otherwise be difficult to integrate using other techniques.

Real Options Analysis

Real options analysis is built upon Option Pricing Theory originally developed by Fischer Black and Myron Scholes (1973) and elaborated by Robert Merton (1973).[13] It is the application of option pricing theory to investment in real assets. Real options analysis is the analysis of the investment options embedded in ***real*** assets, e.g. mineral resources, investment in research and development (R&D).

Whereas DCF ignores the possibility of future management decisions that will be made in response to the market conditions encountered over the project life, real options analysis recognizes that business environment is dynamic and uncertain, and that the greatest value can be created by identifying and exercising managerial flexibility. Real options analysis enables the user to evaluate a capital investment option under uncertainty.

Real options recognize that in reality, sponsors have the option to defer the business decisions whose eventual outcome is contingent upon evolution of some other associated factor, e.g. whether to invest in the second phase of an oil refinery plant depends on the market price of oil observed in the first phase.

While investment decisions and management play a passive role in typical capital budgeting techniques, an options approach to capital budgeting enables the user to conceptualize and quantify the value of the investment/operating options from active management. For example, in natural resource extraction industries such as a gold mine, the owner of the mine has

[12] **Ibid.**

[13] **Brennan, Michael and Schwartz, Eduardo, "A New Approach to Evaluating Natural Resource Investments", in *The New Corporate Finance: Where Theory Meets Practice, ed.* Donald H. Chew, Jr., McGraw-Hill, 1993, pp. 98–107.**

the options to wait to invest, expand output, switch costs by changing technologies, or abandon the plant with resulting costs and so on. These operating options are extremely difficult to evaluate under DCF analysis.

Such operating options are analogous to financial options. For instance, management's option to invest in the second phase of an oil refinery plant only if oil price rises substantially is similar to a call option. Similarly, the option to abandon the plant resembles the features of a put option.

With the real option analysis and by extending option pricing theory, it is possible to evaluate and capture managerial flexibility, i.e., value options open to management in investment appraisal, as follows:[14]

(Adjusted) Strategic NPV = Base NPV (using DCF) + Value created through exercising different operating options

The value of real options and their impact on optimal investment decisions are substantial. It is a particularly useful technique when traditional DCF techniques may *miss the* boat, both in concept and magnitude.

Example of an Application of Real Options Analysis: Valuing an Oil Reserve

Natural resource projects are prime candidates for real options analysis. Let us consider the case of an oil reserve extraction facility. Using DCF valuation techniques, the value of this reserve, V, depends on the quantity of the resource, its current market and the timing of its extraction. However, natural resource projects usually have several "options" built into them.

For example, initiating such an undertaking requires incurring certain exploration costs. Upon incurring this initial outlay, and if oil prices are sufficiently favourable, management has the option to go ahead with construction and field development assuming an adequate level of reserves is found; if this is not the case, management has the option to delay or even forego subsequent work. This type of option is considered analogous to a call option. Recall that a call option gives its holder the right to buy the underlying asset at a defined strike price during a specified period of time. In return, the call buyer pays the writer a premium, i.e., the call price, for extending such a right. In our case, the exploration expense incurred is considered the equivalent of a call premium – providing management with

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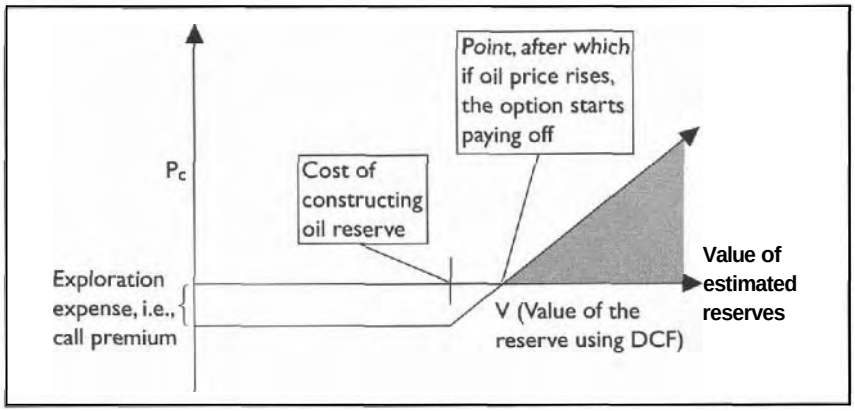
"For an elaborate discussion on Real Options, see Trigeorgis, Lenos, "Real Options: An Overview", *Real Options, Models, Strategies, and Applications", Praeger Publishers, 1995.*

the option to proceed, delay or even forego the construction or the development of the field as conditions warrant. The net payoff of such a call option, P_c, on an oil extracting reserve is depicted in Figure **A7.1.1.** It should be evident from the call payoff diagram that the upside benefit is unlimited and a function of rising oil price.

Figure A7.1.1 Payoff of a Call Option on an Oil Reserve Extraction Facility

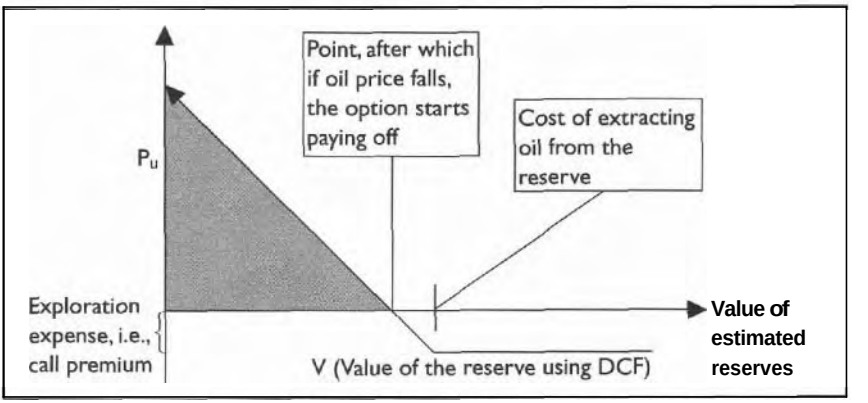


As mentioned previously, using DCF the facility is valued to only V. Applying real options technique, the value of the facility is enhanced to P_c, shown as the shaded area in Figure **A7.1.1.** This shaded area is gained by way of having the call option embedded into the oil extracting facility investment, a valuation component that DCF is unable to capture.

If over the life of the project, oil prices should suffer a decline or project operation is suboptimal, management also has an option to abandon the project for salvage value and avoid continuing to incur fixed costs. This type of option bears resemblance to a "put".

A put provides its holder with the right to sell the underlying asset at a strike price during a specified time period. The put buyer pays the writer a premium, P_u (i.e., the put price), to acquire this right. By undertaking the development of the field, management incurs a fixed cost whether it extracts oil from the reserve or not. It will only continue to develop the field if the oil price is sufficiently high to justify doing so. If oil prices should fall, management has the option to abandon the facility to realize salvage value and avoid incurring fixed costs. The payoff from the exercise of such a put option is depicted by the shaded area in Figure **A7.1.2,** a benefit that DCF cannot capture.

Figure A7.1.2 Payoff of a Put Option on an Oil Reserve Extraction Facility



Note that the payoff area has been shifted to the left because in a put, the maximum gain to be reaped is limited to that area where the price of oil is greater than the fixed costs related to field development.

Altogether, using real option analysis, the value of the oil reserve in question will be the sum of (a) its base value V, found using DCF; and (b) value created through P_c and P_u.

APPENDIX 7.2

CALCULATION OF DEPRECIATION FOR PURPOSES OF PROJECTING BALANCE SHEET AND INCOME STATEMENT

Depreciation expense may be calculated using numerous methods. The most commonly used methods, however, are (a)straight-line depreciation (SLD); (b)double-declining balance (DDB);and (c)sum-of-the-years'-digits (SYD) methods.

Straight-Line Depreciation and Double-Declining Balance Methods

Using the SLD method, the total depreciable base, i.e., total physical assets of the project, is depreciated by an equal percentage over the economic life of the project. Hence, fixed assets of a project with an economic life of 20 years will be depreciated by 5% each year. Important variables in depreciation calculation are (a)cost; (b)salvage value; and (c)economic life. Depreciation expense would be lower to the extent that there is salvage value.

Using the DDB method, fixed assets are depreciated at twice the rate of SLD as shown in Table A7.2.1. The table assumes fixed assets of US$250 million with an economic life of five years, and a 20% depreciation expense under the SLD method. Under the DDB method, the project's fixed assets will be depreciated by 40% (2x 20%) of the beginning balance each year, as is shown.

Usually, DDB does not adjust for salvage value upfront. Instead, the ending balance of the fixed assets at the end of their economic life is regarded as their salvage value.

Sum-of-the-Years'-Digits Method

Using the SYD method, depreciation is calculated by multiplying the depreciation base (cost minus estimated salvage value) by a fraction where the numerator of the first operating year is the total economic life of the assets, i.e., five years; and the numerator of each subsequent year is reduced by 1, while the denominator is the sum of the years' digits. Hence, using the same example as above, for a project with an economic life of five years, the depreciation fractions are calculated to be $^{5}/_{15}$, $^{4}/_{15}$, $^{3}/_{15}$, $^{2}/_{15}$ and $^{1}/_{15}$, respectively, for the 1st year, 2nd year, 3rd year, 4th year and 5th year. The denominator of 15 is reached by summing the digits of respective years, i.e., (1+ 2 + 3 + 4 + 5). Depreciation calculation using SYD is shown in Table A7.2.2.

Table A7.2. I Computing Depreciation by Double-Declining Balance

(All figures are in US$ millions.)

Beginning balance (1)	Depreciation (2) = (1) x 40%	Ending balance (3) = (1) – (2)
250	100	150
150	60	90
90	36	54
54	22	32
32	13	19

Salvage value

TableA7.2.2 Computing Depreciation by Sum-of-the-Years' Digits Method

(All figures are in US$ millions.)

Cost (1)	Estimated salvage value (2)	Depreciation base (3) = (1) – (2)	Depreciation fraction (4)	Depreciation (5) = (3) × (4)	Ending Balance
250	25	225	$^{5}/_{15}$	75	175 (= 250 – 75)
250	25	225	$^{4}/_{15}$	60	115 (= 175 – 60)
250	25	225	$^{3}/_{15}$	45	70 (= 115 – 45)
250	25	225	$^{2}/_{15}$	30	40 (= 70 – 30)
250	25	225	$^{1}/_{15}$	15	25 (= 40 – 15)

Salvage value

CASE STUDY

HAS FELIPE'S SHIP ARRIVED?

Felipe was the only executive assistant in a banking department referred to as the Ports and Shipping Division of Banca La Comercial in La Paz. Felipe had been recruited by Juan "Johnny" Sanchez, a grizzled old veteran from a New York commercial bank, and hired to infuse life into a rather moribund shipping division. Thus far, Felipe had not seen much action even though he had been promised plenty when recruited by Johnny out of Stanford University two years earlier.

Usually, Felipe was loaned out by Johnny to other divisions for temporary periods. Thus far, he had worked on a big real estate deal in town in which La Comercial was the underwriter. The deal had been a big success financially for the bank. Everyone, including Johnny, had been pleased with Felipe's support role in the deal. Before this experience, Felipe had been loaned out to the Heavy Industry Division to assist in making a term loan to the local General Motors subsidiary, Asembladora de Buick, S.A. Between these two assignments, he had also managed to do several annual reviews for old-term loans that were on the books but which required a yearly review of operating results. His work, after a lot of digging and probing, had led to the classification of one loan as substandard. Compared to the other executive trainees, Felipe was considered to be on a fast track. Some were predicting his promotion to Assistant Manager next June, when the bank issued its once-a-year promotion List.

Felipe was surprised to see such a bulky note on his desk from Johnny. In scanning the documents, he noted that there was a typed note from Johnny himself, a cover letter from Tom Stevens of Metropolitan Bank of New York to Johnny, with some attachments (a memorandum and some worksheets regarding the La Paz Container Terminal (LPCT) project). Among the documents was also a series of contracts related to the LPCT deal. Felipe sat down on his desk and proceeded to skim the correspondences. He noted from a quick first read that Johnny's note required him to prepare for meetings with lenders in New York and draft due diligence scopes for LPCT that covered its market and technical/engineering aspects.

Based on his first read, Felipe jotted down the following notes to himself:

- Likely loan policy issues for La Comercial.
- Identification of potentially major project flaws, if any, of a qualitative nature.
- Identification of structuring flaws related to the financial model.

- Important project issues needing discussions at meetings involving only lenders.
- Questions to ask sponsors at joint sponsor-lender meetings.
- Draft scope of work (SOW)for market due diligence.
- Draft SOW for technical due diligence.
- Draft SOW for legal due diligence (GCCardenas doing this!).

Satisfied with his organization, he proceeded to have a second, slower read of all of the material.

Before he sat down for this task, however, he asked his secretary to make three copies of all the material. While she was doing this, Felipe made two quick calls. The first was to the conference room scheduler, asking for a room for the entire day; the second, to Guillermo Gutierez, who was the head of the Real Estate Division. Felipe was on excellent terms with the latter, and it did not surprise him when Guillermo readily agreed to lend him two trainees for the entire day to assist in his new task. "Use them until you are finished," Guillermo said generously. "Sounds like an important deal that requires some legwork."

The final steps were getting a cup of coffee, asking his secretary to hold all calls, grabbing a sheaf of papers and heading for the assigned conference room.

8 January 2002

From the Office of Johnny Sanchez

Felipe

We may have a deal here that will require full attention from you (and perhaps others) over the next few days. Tom Stevens, President of Metropolitan Bank of New York, is inviting us to participate in the financing of La Paz Container Terminal (LPCT), a Greenfield sponsored by Container Movers, International, one of the giants in the global stevedoring business, which is joint venturing the undertaking with a local firm, Marinera del Occidente, a small deposit client of ours with no borrowing history. Marinera, I understand, is owned by the Bustamante Group, the driving force behind numerous successful commercial businesses in La Paz and elsewhere throughout the country. Nonetheless, these businesses have never been our clients.

I am interested in LPCT because it is a Project Finance deal, our very first one, and we get a chance to do it with the very best in the business, Metropolitan Bank. It is clear that they want us in the deal, as we represent a local presence, very valuable from a due diligence perspective. I'm enthused

also because our participation is bound to be a good learning opportunity for you and the others. We are one of four banks in the proposed debt package and the only local bank. You will also note from the financial model that we are invited to extend the equivalent in pesos of a US$20 million credit in the form of a fixed-rate, **limited** recourse, term loan over ten years to be repaid on a *level debt basis* – **not so**mething we usually do!

I am attaching to this note the letter from Tom plus a memorandum, prepared by Metropolitan's Specialized Industries Research Department, providing a very preliminary evaluation of the project and its fit into the stevedoring industry. Pursuant to this, Tom is asking us to take the lead in drafting a due diligence scope of work for experts capable of examining the (a) market; (b) technical/engineering; and (c) legal aspects of the deal. I have sent a note to General Counsel Raul Cardenas asking him to prepare the legal scope of work so you needn't worry about that one.

Please take a close look at all the documentation, coordinate with GC Cardenas on the legal side and give me something we can review together tomorrow – particularly on your two scopes of work. As you are aware, I will be out of the office today since it is my wife's 50th birthday and we have been planning a massive celebration for several months now.

Good luck,

Johnny S.

5 January 2002

Mr Johnny Sanchez

Senior Vice President

Banca La Comercial, S.A.

Ports and Shipping Division

Apartado Postal 6021

La Paz 1207, Monte Rico

Dear Johnny

It was really good to catch up with you over the phone and all your activities at La Comercial. I'm pleased to hear that you are comfortably ensconced in your new job. All of us at Metropolitan miss your presence on our deals, and that goes especially for me.

I was certain you would be interested in the La Paz Container Terminal deal since it is right in your backyard, and especially given your responsibility to expand the bank's activities in the port and carrier sector. With all the privatization activity that is going on in Monte Rico, I'm sure there will be lots of opportunities for us to work together on this and future deals.

The purpose of my note is to summarize the background to the deal more formally than I could have done over the phone.

As you are aware, Monte Rico has dollarized its economy and the Ministry of Shipping bid out the LPCT project about a year ago. Under the tender, a joint proposal submitted by Container Movers and a domestic firm (which I understand to be owned by Monte Rico's Bustamante Group) were declared First-Ranked Bidders. I have only passing familiarity with the local Group, but I assume they are pretty good folks. Container Movers, a private firm, is an old client of ours dating back 50 years or so. We have, on a Project Finance basis, funded five container ports with them in South America and Asia and have so far enjoyed good experiences on them all.

However, we are approaching our legal lending limit to Container Movers and its subsidiaries and affiliates, and they are aware of this. About a month ago, the subjects approached us to discuss the possibility of issuing a mandate on our behalf under which we would be their financial advisors on this deal, assisting them purely in mobilizing finance from third parties on a best efforts basis and negotiating loan contracts. We agreed to accept the mandate for two reasons: we (a) are not in a position to take significant additional exposure to this client; and (b) as you may recall, have a policy in the bank that we cannot serve as financial advisors and lenders in the same deal due to perceived conflicts of interest. In other words, we are either a pure financial advisor in a deal, or part of its underwriting group, but we cannot be a financial advisor and lender. I don't agree with the policy, and neither does a significant portion of the market, but the bar at Metropolitan exists in any case. For both reasons, we will be unable to participate as lenders. Instead, we will be assisting the project vehicle created by the joint venture, LPCT, to raise money from four banks, one of which is hopefully yours. I am in touch with all four banks that we have categorized as "most interested" in the deal; three are New York banks and the fourth is yours. As I mentioned to you, all of the banks including the potential subordinated lender, are well known to you.

Container Movers rarely prepare Debt Offering Memoranda of any kind.

Their modus operandi is to mobilize a small club of lenders with the assistance of a financial advisor and proceed directly into term sheet or loan negotiations. The fact is we don't really have a lot of time to achieve financial closing. The concession agreement provides the sponsors with six months to reach this milestone. The clock started ticking last week when the agreement's conditions precedent were met by LPCT. Given a need to move quickly, I am sending you a memorandum providing a very preliminary evaluation of the deal, along with a hard and soft copy of the sponsor's financial model. The evaluation, drafted by our Specialized Industries Research Department, has good technical information that may have instructional value for your people. Use the memorandum within your organization in whatever way you see tit hut bear in mind that I am passing this on to you as a friend. I cannot vouch for the accuracy of any of the information therein. Hence, I would suggest you treat the document for what it is – merely a preliminary evaluaton. Nonetheless, it should help you (as it does us) to identify issues you may want to probe into during the due diligence. When examining the material, bear in mind that the sponsor's financial model is at a rudimentary stage. It lacks precision since loan tenors, interest rates and debt repayment structures are all assumed. By the way, I am enclosing all copies of all of these contracts as attachments to this letter so you can start your own independent review.

I would ask that you and La Comercial take the lead in preparing a due diligence scope of work that the otner three lenders can review (contact names and addresses are enclosed with this letter). The club needs organization, independent of us, in determining its due diligence needs. After the club has agreed to preliminary drafts, I suggest that we have a lender, meeting, attended by our client and ourselves, to answer questions and hopefully trim the work scopes. In the interim, to qain time, we plan to assist our client in preparing a mandate letter to be entered into with each of the banks prior to, or at the meeting. Obviously, the expenses associated with recruiting the expert, to assist in due diligence, as well as those related to this upcominq and future trips, to and from lenders meetings, will be picked up by the sponsors under the terms of the mandate letter.

With best regardr to you and Sally,

Tom

MEMORANDUM

Prepared for the President and the Ports and Shipping Division of La Comercial

To: Thomas Stevens

President

From: Specialized Industries Research Department

Re: Preliminary Evaluation of La Paz Container Terminal

This memorandum has been prepared with the objective of performing a preliminary evaluation of the La Paz Container Terminal project (**LPCT** or **Project**). We assume that some of the people who will work on the Project may have had little exposure to container **ports** previously. The memorandum will cover the basics for their benefit.

The purpose of a container port (also **container terminal** or simply **terminal**) is to generate revenue from shipping companies and importers/exporters by providing the needed infrastructure to load, unload, store and provide customs clearance for ocean-going containers. The operators that run these container ports are referred to as stevedores, deriving the bulk of their revenue from the **lift on/lift off** of containers to/from vessels, as discussed further below.

Three types of terminals are in operation:

- A dedicated container terminal built (or leased) and managed by a carrier line with the intention of servicing its own ships rather than being a common-user facility.
- Common-user facility stevedored by either a port authority or a private terminal operator under a regulated tariff regime.
- Common-user facility stevedored by a port authority or a private terminal operator where charges are set by reference to market conditions, with the terminal operator and each shipping line entering into an explicit service contract.

The infrastructure at a container port consists of a quay[15] permitting vessels to dock temporarily; rail-mounted cranes for **lift on/lift off** services; cranes, straddle carriers, tractor/trailers, forklifts or other equipment for stacking containers in the yard; other equipment as well as manpower to stuff and de-stuff containers, etc. **Stuffing** and **destuffing** are terms used to denote the process of, respectively, loading and unloading cargo into a container.

The lift on/lift off tariff is a composite rate charged by the terminal for

[15] **A quay is a wharf constructed parallel to the shoreline permitting ships to dock temporarily for purposes of loading or unloading their containers.**

loading or unloading a box from a vessel, moving it to the container yard, and storing it there for some period, usually three to seven days. A **box** is another term for a shipping container, usually sized at 20 or 40 feet. The **container** itself is a metal box structure of standard design used for carrying general cargo that can physically, conveniently and economically fit inside. A 20-foot equivalent unit (TEU) is an internationally recognized standard against which port throughput is measured. One 20-foot box amounts to 1 TEU, whereas a 40-foot container is 2 TEUs.[16] A container, if fully loaded, is classified as a full container load (FCL); partially loaded, as a less than full container load (LCL); and when it has no load at all, as an **empty**. Depending on the port, different composite rates may apply to FCL, LCL and empty containers. Where the market determines the composite rate charged by a terminal operator to a shipper, the price will vary according to factors such as the amount of cargo per annum, its mix, ease of ship stevedoring and the need for a guaranteed berth time slot. Conversely, in most controlled ports, regulations are designed primarily for price control, which has the advantage of promoting price uniformity.

The sponsors of the LPCT, the subject of the attached financial model, propose to build a greenfield container port with a capacity of 350,000 TEUs. The Project appears to have the objective of catering to new and existing demand and will be located about ten miles from the only other terminal in the country, managed by the port authority. The Project has several advantages relative to the current port, the most important of these being its very strategic location at the mouth of the river, rather than ten miles upriver as is the case with the existing port. We understand that the government port is currently operating at its full capacity of 375,000 TEUs and, often, is unable to keep up with the pattern of ship arrivals. Nonetheless, container traffic to and from Monte Rico currently stands at 400,000 TEUs each year, growing at 15% per annum. Supporting market studies, commissioned by each of the World Bank Group and the port authority, have verified this growth.[17] We duly underscore for your benefit that the Project anticipates capturing a significant amount of traffic in its first year of operation and a sales growth thereafter of about 10% per annum until it reaches its full service capacity. Since its proposed tariff structure is similar to that of the existing port, its ability to capture business, presumably, will be dependent on superior service and its location.

[16] A less common international standard for throughput is a 40-foot equivalent unit (FEU).

[17] Lenders will commission a separate study on the market if they express interest in the project; however, it is advantageous to have a study already done since it enables the lenders to screen the project more quickly to determine interest. Obviously, more credence is put on studies done by independent consultants.

In many countries, an independent regulatory commission determines the maximum charges that may be levied for container port terminal services. Where this is the case, sponsor(s) do extensive due diligence on the permitted tariff structure and methods used to amend it, before they decide to bid. Where independent regulation is absent, the Request for Proposals (RFP) may require bidders to compete with each other on the basis of their proposed tariff schedules, including a proposal for amending the schedule of charges annually. The first-ranked bidder formalizes the bid, or agreed tariff schedule, in a long-term concession agreement entered into with the port authority.

In the case at hand, the Project does not benefit from the existence of an independent regulatory body responsible for tariff setting. Rather, the tariff schedule has been set by recourse to bidding and is formalized in a concession agreement entered into between the port authority and the project sponsors. Among other provisions, the agreement provides for a 30-year period of operation, renewable for a similar period; negotiated tariffs for lift on/lift off, stuffing/destuffing, and storage; along with automatic yearly tariff uplifts of 2%. Most of the incoming and outgoing container traffic originates in the capital, about 175 km from the Project. Air, road and rail connections between the port and capital are currently fair at best, although the Project is certain to stimulate the expansion and modernization of intermodal transport between the Project and capital city eventually.

Key issues to be considered in reviewing and analysing a port container project such as the Project are the following:

- Market.
- Sponsors/competition.
- Capital structure and financing plan.
- Construction.
- Operating and maintenance expenses.

Market

The starting point for the planning and design of a container terminal is the projected throughput of the containers expected to be handled over the life of the facility. The throughput profile must be highly detailed and include projected TEU volumes as well as estimates of the distinctions between varying types of box and trade. In addition, the profile in terms of vessels must also be assessed, and include factors such as size of vessels, arrival patterns and containers handled per call.

The most critical constraint on capacity is quay length rather than container yard capacity. There are nearly always off-dock solutions to yard capacity constraints. Alternatively, higher yard storage charges can be used to discourage long-term storage. Similarly, equipment such as quay cranes and

yard gantries can be varied with relative ease according to requirements. The quay seldom offers such flexible alternatives since its size is fixed.

Nonetheless, it is estimated by trade experts such as Drewry Shipping Consultants (Drewry)[18] that some 60–70% of the factors that determine the terminal's optimum operational capacity are outside of the terminal manager's direct control, the most important being:

- Timing of vessel arrivals.
- Volume of boxes unloaded or loaded onto each vessel relative to its capacity.
- Size of the vessels.
- Ability of exporters to meet vessel schedule.
- Efficiency with which the customs office releases containers from the yard.
- Weather – capable of seriously affecting container terminal performance.

Drewry concludes that **low market risk ports** often show a number of common attributes:

- Container trade expanding at a rate in excess of 10% per annum.
- A government-managed port authority without the financial resources, or political backing, to undertake the container port itself.
- A high proportion of the trade being origin and destination cargo, which originates in or is destined for a hinterland defined by a radius of 150–200 km from the port.
- Limited potential competition with no alternative site enabling the construction of an efficient terminal at a cost lower than that of the proposed site.

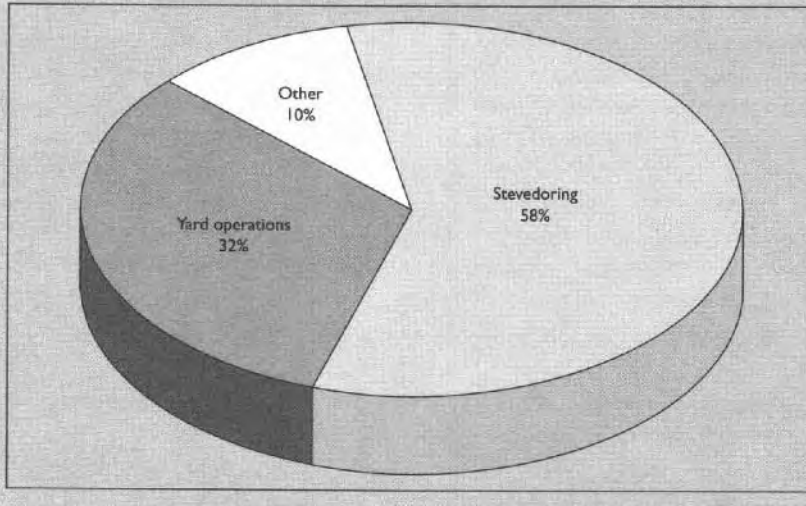
Another dimension to the market evaluation includes the impact of the container terminal facilities to other countries in the region, since the project adjoins a couple of landlocked countries. For example, the western regions of Sierra Nevada and Fortaleza, would benefit from the proposed container facility though no supporting studies are available that would provide any information on the expected demand from these regions. Although all of the three countries are on relatively good political terms currently, Fortaleza and Sierra Nevada have been at war with each other at various times over the last 100 years, occasionally to the detriment of neighbours. Both regions, by the way, have access to alternative ports on their eastern shores.

[18] Drewry Shipping Consultants, World Container Terminals, April 1998. Figures and tables used in this case study, as well as other technical information related to the container industry, have been developed with the assistance of this report. Drewry Shipping Consultants provides, among other things, technical advice to bankers an their loans to projects such as the one portrayed in this case study.

Trans-border demand is considered important if excess capacity is built into the proposed facility specifically to accommodate this aspect. On the basis of materials delivered to us, it is not clear whether the Project is intended to service the in-county demand, which is growing steeply as pointed out before, and/or has designs on trans-border demand.

As shown in Figure C7.1, a terminal operator can expect to collect around 60% of its total annual revenue from shipping lines and between 25% and 35% of its revenue from the importers/exporters. Balance revenue derived tends to be from services provided by the terminal directly to vessels, as is explained further below.

Figure C7.1 Distribution of Revenue in a Typical Container Port



Source: Drewry Shipping Consultants, *World Container Terminals*, April 1998.

In general, the lift on/lift off revenue is charged to the shipping line for lifting the container on/off the ship and moving it to/from the yard stack. Thus the price normally includes the carriage of the container from the quayside to the yard stack and placing the container within the stack or vice versa.

As it costs only a little more to handle a 40-foot container over the ship's side than it does to handle a 20-foot container, lift on/lift off revenue is most often invoiced on a per container basis rather than a per TEU basis. In fact, it may be hard for the terminal operator to justify any difference in charges for this very reason. The additional charge, when applicable, varies between 1.2 and 1.5 times of that applicable to the 20-foot container. Composite rates for LCLs and/or empty containers, depending on the port, are handled usually at a discounted rate that may be, respectively, 25% and 75% less than FCL tariff.

Moreover, the lift on/lift off rate charged for moving a container from ship to stack is different from other container moves. Between 5% and 10% of the lifts simply move a container within the ship's hold to allow the stevedore to select the right container to be removed or loaded. The typical rate charged for this service is 50% of the standard lift on/lift off rate. The task may involve either moving containers onboard the vessel, placing a container on the quay to allow the movement, and subsequently reloading it.

Lift on/lift-off activity can also take the form of transshipment, where containers are unloaded from one vessel, stored on the terminal (usually for a few days), and then reloaded to another vessel. Charges for transshipment are variable according to the extent of competition and operator's strategy to attract this kind of business.

Whereas the revenue for stevedoring and moving containers is collected on a per box basis, yard storage of containers is collected on a per TEU basis to take into account the volume of yard space occupied. The storage tariff is applied daily and varies (increases) with time. Clearly, **dwell time**, the total time a container is in the yard, is a key factor in the storage rent equation. This is influenced not only by the level and structure of storage charges but also by the nature of the cargo and trade route in question. For example, deep sea containers are likely to have a longer dwell time than short sea ones where journey length may just be measured in hours rather than days. Also, containers of perishable goods may move more quickly than other cargoes.

Generally, **import** containers remain on the terminal for a longer period than export containers, while customs formalities are dealt with and collecting haulage is arranged. These boxes may generate additional revenue from moves to truck, rail or other transport.

In some ports the stevedore collects revenue only in local currency, while in others, US dollars may be generated from international shipping lines but revenue from importers and exporters is denominated in the local currency. This adds to the risk in tariff-controlled ports where the stevedore cannot readily adjust his tariff to match the devaluation of a currency.

- Other revenue, as shown in Figure C7.1, can vary from 5% to 10% of the total generated by a container terminal. Often, the high ancillary revenue is found in ports with low official tariffs. Port authorities, or terminal operators in this case, attempt to make up some of the difference by offering value-added services, including:
- Provision of power, fresh water and telephone service.
- Garbage removal.
- Standby charges for labour and equipment.

In each case, the ability of the terminal operator to supply these ancillary services will be influenced by local practice and the nature of the concession agreement.

Sponsors/Competition

There is only a handful of truly global enterprises – companies possessing a combination of substantial resources, political acumen and influence, strong local partners for each development and an extensive base of experienced managers to call upon in order to succeed. Container Movers is one of five global firms with significant operations worldwide. The Project has a second sponsor, Marinera del Occidente of the Bustamante Group. Each sponsor, as we understand it, has committed to provide the Project with 50% of its required equity of US$104 million. We have no knowledge of the Bustamante Group, other than the fact it is an important commercial entity in Monte Rico. However, we do not believe that the Group has ever held any stake in the global maritime industry.

Recent competitors to the stevedoring companies in container port operations are those in the carrier sector. Generally speaking, carriers with the financial resources and volume of trade to justify terminal ownership invest in this activity for strategic reasons. Examples of such carriers include Colossal Shippers and Magna Shipping, among others. The globalization of container shipping over the last few years has not led to global involvement of the carrier industry in port management but some trend in this direction is evident.

Note further that about 25% of the total container trade in the Project's host country is controlled by one carrier, Colossal Shippers, which, reportedly, has been discussing for quite some time the possibility of taking over the management of the government-owned container port but thus far, no agreement has been executed. Colossal also operates a Central American port located 250 miles from the proposed Project and they may be prohibited from managing a competing common-user facility.

We have also closely examined the implementation agreement entered into with the government and conclude that LPCT is provided with a 15-year corporate tax holiday; assistance with the acquisition of permits and consents, and expedited processing of visas for the six expatriate staff to be brought in from the US. There is no provision which limits the government's ability to enter into a separate agreement with another private operator.

Capital Structure and Financing Plan

The project capital structure has a debt-equity ratio of 3:2 which, *prima facie*, may be regarded as acceptable for most projects that do not feature service contracts or take-or-pay agreements. According to the financing plan, there will also be a subordinated lender. Depending on terms of subordination, this could significantly improve the financial structure of the Project – from senior lenders' perspective.

Overall, a Project cost of US$253 million is assumed, with some breakout provided for civil works and equipment. The financing plan assumes borrowings from four lenders. Three of them are senior lenders collectively extending US$110 million in long-term debt to the Project; one is a subordinated lender providing US$40 million. Loan tenors, interest rates, margins, grace periods, facility fees, commitment fees, etc. are fully disclosed.

Construction

Table C7.1.1 summarizes rule-of-thumb civil works and equipment costs for the Project. As shown, a medium-sized terminal can handle 210,000 TEUs per annum, while a large terminal, 600,000 TEUs per annum. These costs are then compared with the costs assumed for the Project. The figures exclude land, which is normally leased, rather than purchased, at a yearly rate of about 10% of its cost.

Civil works costs for building quays and back-up yards are reasonably consistent between ports. Quay construction is the single largest item in the civil works budget accounting for about 60% of its total cost – if the land is *leased. A standard quay may be 35 metres wide and 200–300 metres long.* Rule-of-thumb construction cost is approximately $54,000 per metre of quay length for a quay with this width.

The equipment requirement for each container port is dependent on the size of the quay and the type of yard operation it features. Generally speaking, larger terminals allow more intensive use of the quay line, yard space and equipment, and this is reflected in the benchmark requirements. In addition to the yard equipment, container ports also require communication equipment, vehicles, computers and particularly specialized software to support the operation.

Generally, lenders are most apprehensive about completion risk in infrastructure facilities. This is the risk that the project will not be completed on time (or at all) due to cost overruns.

A key variable in this respect is that the financial model assumes a quay length of about 450 metres. Provided the subsoil foundation conditions are reasonable, this type of facility can be constructed within 20–24 months from the completion of design, which may take an additional two to three months. For a container terminal, the designs are well established internationally and do not involve sophisticated or unproven technology. Hence, the completion risk for a container terminal is far lower than for other projects.

Consistent with our own estimates, the Project assumes two years for its construction and commissioning. Both constructions – quay and yard – *follow the standard bell curve expenditure pattern that is generally accept*able. During the two-year period, both the quay and yard will be con-

Table C7.1.1 Rule-of-Thumb Civil Works and Equipment Costs for the LPCT

	Feature benchmarks			Rule-of-thumb costs* (US$)		
	Quay length	Terminal area	No. of quay cranes	Civil works (including quay, buildings, dredging and pre-operating costs)	Equipment cost (new)	Total initial capital outlay
Medium-sized terminal (210,000 TEUs p.a.)	250 m	8 ha	2	$21.0 m	$19.0 m	$40.0 m
Large Terminal (600,000 TEUs p.a.)	550 m	16 ha	5	$47.5 m	$60.8 m	$108.3 m
La Paz Container Terminal (350,000 TEUs p.a.)	450 m	98 ha	3	$122.0 m (excluding land)	$41.0 m	$164.0 m (excluding land)

* Costs before serious congestion.

structed simultaneously with equipment being purchased in the second year of construction. From Table C7.1.1, we would note that the Project's equipment costs are normal but Civil Works costs are abnormally high. The reason is that the size of the proposed yard is abnormally large. Not shown in the table are the purchase costs of land. About 48 hectares of land will be bought by the Project from third parties at about the equivalent of US$900,000 per hectare, while another 48 hectares are to be leased from the government.

Operating and Maintenance (O&M) Expenses

As shown in Table C7.1.2, initial capital costs for both model terminals (210,000 and 600,000 TEUs) are roughly proportional to the scale of the facility being created. However, data in Table C7.1.2 clearly indicate that economies of scale are present in the respective operating costs, with the annual direct operating cost per TEU for the large terminal around 20–25% less than that for the medium-sized terminal. As one would expect, costs are relatively higher in industrialized countries compared with emerging countries because the labour is more expensive.

Labour always poses a big problem, more so when the facility calls for sustained expatriate staff. The Project has six expatriate staff on a permanent basis that could be reduced over time by replacing the expatriates with local trained manpower. However, the assumed wages in the financial model appear surprisingly low for expatriates and local staff. In fact, the terminal's salary structure is closer to an Asian standard than a Latin American one!

As a general rule, we would have assumed a total port staff of between 350 and 500 with a total salary budget of about US$4-6 million. Average cost of labour per TEU should be about US$15.00 per year or thereabouts. Or from another perspective, TEU per head count should be between 900 and 1,200.

The above needs to be looked into.

Apart from direct operating costs shown above, the Project has another (approximately) $20 per TEU in general overhead costs, associated with electricity, fuel, equipment repair and maintenance and other such items. That estimate is large mainly because of the huge amount of land the Project has. In addition, it is difficult to pass judgements on these items since costs such as electricity and fuel are highly site-specific.

Table C7.1.2 Rule-of-Thumb Annual Direct Operating Cost per TEU for LPCT

	Operating benchmarks					Rule-of-thumb costs* (US$)	
	TEU handled per annum per head	TEU per crane per annum	Yard gantries per crane	TEU handled per annum per metre of quay line (at capacity)	TEU per annum *** per hectare	Annual direct operating cost per TEU ** (emerging country)	Annual direct operating cost per TEU** (industrialized country)
Medium-sized terminal (210,000 TEU per annum)	905	105,000	3.5	840	26,250	$40	$72
Large terminal (600,000 TEU per annum)	1,130	120,000	3.0	1,091	37,500	$30	$58
La Paz Container Terminal (350,000 TEU per annum)	1,074	115,000	2.0	780	3,571	$50 (including an annual labour expense of US$1.2 million)	

* Costs before serious congestion.

** Excluding interest and dividends.

*** Based on total terminal area rather than yard stacking area - i.e. includes non-operational land.

FINANCIAL MODEL WORKSHEETS

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Input
Presentation currency: **All** figures are in Million US Dollar, unless otherwise indicated.

Timeline Assumptions

Financial Closing (Peg date)	31-May-02
Construction start date	1-Jun-02
Construction period	24 Months
Commercial operations date (COD)	1-Jun-04

Demand

Container terminal capacity, TEU	350,000
Normal annual traffic growth, %	10%

Tariff

Validity period, years	30
Annual increase rate, %	2%
Stuffing/destuffing charges, US$/TEU	24.00
Storage charges, US$/TEU	7.50

Twenty feet equivalent unit (TEU)	Full container load (FCL)	Less than full container load (LCL)	Empty
Mix	37.5%	37.5%	25.0%
Stevedoring	140	65	33
Jetty to storage	130	43	22

Forty feet equivalent unit (FEU)	Full container load (FCL)	Less than full container load (LCL)	Empty
Mix	37.5%	37.5%	25.0%
Stevedoring	215	100	50
Jetty to storage	195	65	33

***Container** Mix*

- 20 A	50%
- 40 A	50%

Other Revenue

- Ancillary revenues from shippers (US$/p.a.)	5%	of terminal operations

Royalty to Government

Fixed annual fee (US$/year)	0
Variable fee (US$/TEU)	5.00

Operations & Maintenance

Management

- No.	6
- Avg. salary (US$/p.a.)	100,000
Administration, Marketing, and Finance	
- No.	40
- Avg. salary (US$/p.a.)	2000

Engineering/Maintenance

-No.	30
- **Avg.** salary (US$/p.a.)	2000
Operations	
- No.	250
- Avg. salary (US$/p.a.)	2000
(Average annual salary increments	5%

	3,000,000

Electricity

- Fixed charge (in US$)	12,000	per hectare per year
- Variable (in US$)	1.6	per TEU

Fuel

- Cost per liter	0.50	US$
- Requirement per TEU	7.00	liters
Insurance - as a percentage of fixed asset costs	1.00%	
General overheads	1.55	per TEU
Annual increase in operational costs	8%	

Repair and Maintenance - as a percentage of capital cost

- Civil works (quay, yard, terminal buildings, etc.	0.20%
- Quay cranes	1.50%
- Yard gantnes	1.50%
- Other yard equipment	4.00%

Project **costs**

Land purchase	44,500,000	US$
Development expense		US$
- yard area	98.00	hectares
- quay length	450	meters
- construction period	2	years
- quay construction	54,000	US$ per meter
- container yard construction	1,000,000	US$ per hectare
- quay crane	5,000,000	US$ per unit
- yard gantries	2,000,000	US$ per unit
- Other yard equipment	10.00%	of capital cost
- contingency	15.00%	

Construction Schedule	**01-Dec-02**	01-Jun-03	01-Dec-03
- quay construction (US$ million)	90	225	135
- yard construction (US$ million)	19.6	49	29.4
- quay cranes (no.)			2
-yard gantries (no.)			5
- Other yard equipment (no.)			1

Capital Structure

Ratio of equity in total project cost	40.68%
Ratio of debt in total project cost	59.32%
Total	100.00%

Base Interest

LIBOR	6.00%	p.a.
Base Interest Rate for La Comercial	9.00%	p.a.

Debt

Label/Name	Commercial Bank of New Vork	BankCorp of America	La Comercial
Loan amount, US$ million	50.00	40.00	20.00
Tenor, years	10	10	10
Grace from financial closing, years	3	3	3
Base Interest, %	6.00%	6.00%	9.00%
Swap rate, bp	250	250	0
Spread, bp	400	400	500
Grace from COD, years	1	1	1
Fees a - Facility fees, bp	100	100	0
Fees b - Commitment fees, bp	50	50	50
Fees c - Monitoring fees, bp	0	0	0
Payment profile - Annuity (1), Linear (2)	2	2	1
Type - Senior (1) and Subordinate (2)	1	1	1

Equity

	Container Movers	Marinera del Occidente
Label		
Share	50%	50%
Amount		
Type		

Initial Working Capital (Number of Days)

Accounts Receivables	30
Accounts Payables	30
Inventory	30

Income Tax Assumptions

Income tax rate	35.00%	
Income tax holiday	15	years

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Uses and Sources of Funds
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

Uses of funds (US$ Million)	Total	01-Dec-02	01-Jun-03	01-Dec-03	01-Jun-04
Construction costs					
Land and startup costs	44.50	44.50			
Quay construction	24.30	4.86	12.15	7.29	0.00
Yard construction	98.00	19.60	49.00	29.40	0.00
Quay cranes	15.00	0.00	0.00	10.00	5.00
Yard gantries	12.00	0.00	0.00	10.00	2.00
Other yard equipment	14.93			14.93	
Contingency	22.40	3.67	9.17	8.50	1.05
Financing costs					
Interest during Construction (IDC)	18.79	0.00	3.10	6.30	9.39
Upfront fees	1.70	1.70			
Commitment fees	1.25	0.76	0.41	0.08	0.00
Monitoring fees	0.00	0.00	0.00	0.00	0.00

Total uses of funds (US$ Million)	252.87	75.09	73.841	86.50	17.44
Sources of funds (US$ Million)	252.87	75.09	73.84	86.50	17.44
Equity	102.87	30.55	30.04	35.19	7.10
Debt	150.00	44.54	43.80	51.31	10.35

Total sources of funds (US$ Million)		Capital Structure		Individual Ratio
Total	252.87			
Equity	***102.87***		*40.68%*	
Container Movers		51.44		50.00%
Marinera del Occidente		51.44		50.00%
Debt	***150.00***		*59.32%*	
Commercial Bank of New York		50.00		33.33%
BankCorp of America		40.00		26.67%
La Comercial		20.00		13.33%
Sugarland Subordinated Lenders		40.00		26.67%

Drawdown by equity (US$ Million)

Container Movers	51.44	15.27	15.021	17.60	3.55
Marinera del Occidente	51.441	15.27	15.02	17.60	3.55
Total equity	102.87	30.55	30.04	35.19	7.10

Drawdown by all debt facilities (US$ Million)

All Debt						
- Upfront fees	So	1.70	1.70			
- Opening Balance			0.00	44.54	88.34	139.65
- Drawdown		150.00	44.54	43.80	51.31	10.35
- IDC	So	18.40	0.00	3.01	5.96	9.43
- Commitment Fees	So	1.30	0.77	0.45	0.08	0.00
- Closing Balance			44.54	88.34	139.65	150.00
Monitoring fees	So	0.00	0.00	0.00	0.00	0.00

Drawdown by individual debt facilities (US$ Milliou)

Commercial Bank of New York

- Upfront fees	0.50	0.50			
- Opening Balance		0.00	14.85	29.45	46.55
- Drawdown	50.00	14.85	14.60	17.10	3.45
- IDC	*5.68*	*0.00*	*0.93*	*1.84*	*2.91*
- Commitment Fees	0.59	0.35	0.21	0.03	0.00
- Closing Balance		14.85	29.45	46.55	50.00

BankCorp of America

- Upfront fees	0.40	0.40			
- Opening Balance		0.00	11.88	23.56	37.24
- Drawdown	40.00	11.88	11.68	13.68	2.76
- IDC	4.54	0.00	0.74	1.47	2.33
-Commitment Fees	0.24	0.14	0.08	0.01	0.00
-Closing Balance		11.88	23.56	37.24	40.00

La Comercial

- Upfront fees	0.00	0.00			
- Opening Balance		0.00	5.94	11.78	18.62
- Drawdown	20.00	5.94	5.84	6.84	1.38
- IDC	2.54	0.00	0.42	0.82	1.30
- Commitment Fees	0.12	0.07	0.04	0.01	0.00
- Closing Balance		5.94	11.78	18.62	20.00

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Operations and Maintenance
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

Labor cost (US$/p.a.)	No.	Average Salary	Total
Permanent staff			
Management	6	100,000	600,000
Administration, Marketing and Finance	40	2,000	80,000
Engineering/Maintenance	30	2,000	60,000
Total permanent staff	76		740,000
Temporary staff			
Operations	250	2,000	500,000
Total staff	326		1,240,000

		1-Jun-05	1-Jun-06	1-Jun-07	1-Jun-08	1-Jun-09
Repairs & Maintenance (US$/p.a.)						
Repair and Maintenance - as a percentage of capital cost						
- Civil works (quay, yard etc.)						
- Quay cranes						
-Yard gantries	1.50%		0.19		0.23	0.24
- Other yard equipment	4.00%			1.74	1.88	2.03
Total		2.14	2.31	2.50	2.70	2.91
Electricity						
-Fixed		1,176,000	1,270,080	1,371,686	1,481,421	1,599,935
-Variable		392,0001	423,3601	457,2291	493,8071	533,312
Total		1,568,000	1,693,440	1,828,915	11,975,228	12,133,247
Fuel		857,500	926,100	1,000,188	1,080,203	1,166,619

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Debt Service
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

Commercial Bank of New York			1-Jun-05	1-Jun-06	1-Jun-07
All-in-Rate	12.500%				
Tenor, years	10				
Grace from COD, years	1				
Opening Balance (US$ Million)	50.00		50.00	50.00	44.44
Interest Payment (US$ Million)		34.38	6.25	5.90	5.21
Principal Repayment (US$ Million)	2	50.00	0.00	5.56	5.56
Closing Balance (US$ Million)			50.00	44.44	38.89
Debt service payment (US$ Million)	1		6.25	11.46	10.76

BankCorp of America			1-Jun-05	1-Jun-06	1-Jun-07
All-in-Rate	12.500%				
Tenor, years	10				
Grace from COD, years	1				
Opening Balance (US$ Million)	40.00		40.00	40.00	35.56
Interest Payment (US$ Million)		27.50	5.00	4.72	4.17

Principal Repayment (US$ Million)	2	40.00	0.00	4.44	4.44
Closing Balance (US$ Million)			40.00	35.56	31.11
Debt service payment (US$ Million)	1		5.00	9.17	8.61

La Comercial			1-Jun-05	1-Jun-06	1-Jun-07
All-in-Rate	14.000%				
Tenor, years	10				
Grace from COD, years	1				
Opening Balance (US$ Million)	20.00		20.00	20.00	18.78
Interest Payment (US$ Million)		17.89	2.80	2.72	2.53
Principal Repayment (US$ Million)	1	20.00	0.00	1.22	1.39
Closing Balance (US$ Million)			20.00	18.78	17.39
Debt service payment (US$ Million)	1		2.80	3.93	3.93

Sugarland Snhordinated Lenders			1-Jun-05	1-Jun-06	1-Jun-07
All-in-Rate	15.500%				
Tenor, years	15				
Grace from COD, years	1				
Opening Balance (US$ Million)			40.00	40.00	39.09
Interest Payment (US$ Million)		63.70	6.20	6.13	5.98
Principal Repayment (US$ Million)	1	40.00	0.00	0.91	1.06
Closing Balance (US$ Million)			40.00	39.09	38.04
Monitoring fees		0.00	0.00	0.00	0.00
Debt service payment (US$ Million)	2		6.20	7.04	7.03

Debt Facility Combined (in million USD)		1-Jun-05	1-Jun-06	1-Jun-07
Opening Balance		150.00	150.00	137.87
Interest Payment		20.25	19.47	17.89
Principal Repayment	150.00	0.00	12.13	12.45
Closing Balance		150.00	137.87	125.42

Debt Service Payment Streams		1-Jun-05	1-Jun-06	1-Jun-07
Debt Service Payment - All	1	20.25	31.60	30.34
Debt Service Payment - Senior	1	14.05	24.56	23.30
Debt Service Payment - Subordinated	1	6.20	7.04	7.03

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Tariff
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

TEU	Tariff
Stevedoring	85.13
Jetty to storage	70.38
FEU	
Stevedoring	130.63
Jetty to storage	105.75
Weighted Average Tariff for a Mixed Container	
Stevedoring charges (US$/TEU)	107.88
Transport charges - jetty to storage (US$/TEU)	88.06
Stuffing/destuffing charges	24.00
Composite Tariff **(US$/TEU)**	219.94

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Income Statement
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

	1-Jun-05	1-Jun-06	1-Jun-07	1-Jun-08	1-Jun-09
Year	1	2	3	4	5
Demand	245,000	(280,000	1315,000	1350,000	1350,000
Tariff	219.94	224.34	228.82	233.40	238.07
Revenue					
- Terminal operations	53.88	62.81	72.08	81.69	83.32
- Other	2.69	3.14	3.60	4.08	4.17
Total revenues	**56.58**	**65.95**	**75.68**	**85.77**	**87.49**
Expenses					
Direct ***O&M expenses***					
- Royalty to government	1.23	1.40	1.58	1.75	1.75
- Labor	1.24	1.30	1.37	1.44	1.51
Total direct O&M expenses	**2.47**	**2.70**	**2.94**	**3.19**	**3.26**
Indirect O&M expenses					
- Repair and maintenance	2.14	2.31	2.50	2.70	2.91
- Lease rentals	3.00	3.00	3.00	3.00	3.00
- Electricity	1.57	1.69	1.83	1.98	2.13
- Fuel	0.86	0.93	1.00	1.08	1.17
- Insurance	2.53	2.42	2.33	2.24	2.15
- Other overheads	0.38	0.41	0.44	0.48	0.52
Total indirect O&M expenses	**10.48**	**10.77**	**11.10**	**11.47**	**11.88**
Total O&M expenses	12.94	13.47	14.04	**14.65**	15.14
Earnings before interest, taxes, depreciation and amortization **(EBITDA)**	43.64	52.49	61.64	71.12	72.35

Depreciation and amortization	10.63	9.74	8.94	8.23	7.58
Earnings before interest and taxes (EBIT)	33.01	42.75	52.70	62.89	64.76
Interest expense	20 25	19.47	17.89	16.25	14.56
Earnings before taxes (EBT)	12.76	23.27	34.81	46.64	50.21
Income tax	0.001	0.001	0.001	0.00	0.00
Net income	12.76	23.27	34.81	46.64	50.21
Free Cash Flow to Equity	12.76	36.03	70.84	117.49	167.69

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Balance Sheet
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

	1-Jun-04	**1-Jun-05**	1-Jun-06	**1-Jun-07**	**1-Jun-08**	**1-Jun-09**	**1-Jun-10**
ASSETS (US$ million)							
Current Assets							
Cash		19.63	39.77	70.31	111.55	155.98	202.90
Receivable		4.65	5.42	6.22	7.05	7.19	7.33
Inventory		0.07	0.08	0.08	0.09	0.10	0.10
Other							
Subtotal		24.35	45.27	76.61	118.69	163.27	210.34
Fixed Assets	252.87	252.87	242.24	232.50	223.56	215.33	207.75
Less Depreciation		10.63	9.74	8.94	8.23	7.58	7.00
Net Fixed Assets	252.87	242.24	232.50	223.56	215.33	207.75	200.74
Total Assets	252.87	266.59	277.77	300.17	334.02	371.02	411.08
LIABILITIES (US$ million)							
Current Liabilities							
Accounts Payable		0.96	0.99	1.02	1.06	1.10	1.14
Total LT Debt	150.00	150.00	137.87	125.42	112.60	99.35	85.61
EQUITY							
Equity Investments	102.87	102.87	102.87	102.87	102.87	102.87	102.87
Retained Earnings		12.76	36.03	70.84	117.49	167.69	221.45
Reserve							
Total Debt + Equity	252.87	266.59	277.77	300.17	334.02	371.02	411.08

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Cash Flow Statement
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

	1-Jun-05	1-Jun-06	1-Jun-07	1-Jun-08	1-Jun-09
Net Income	12.76	23.27	34.81	46.64	50.21
Adjustments					
Add Depreciation	10.63	9.74	8.94	8.23	7.58
Less Principal payments	0.00	12.13	12.45	12.82	13.25
Less Increase in working capital	–3.76	–0.75	–0.77	–0.80	–0.11
Net cashflow available to equity holders	19.63	20.14	30.53	41.25	44.43
Cash balance	19.63	39.77	70.31	111.55	155.98

Project name: **La Paz Container Terminal (LPCT) Project**
Sheet: Output
Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

Internal Rate of Return (IRR)	01-Jun-03	01-Jun-04	01-Jun-05	01-Jun-06	01-Jun-07	01-Jun-08	01-Jun-09
Project cost less IDC	145.83	88 25					
Operating income			46.10	55.19	64.59	74.31	75.60
Net flows	145.83	–88.25	46.10	55.19	64.59	74.31	75.60
IRR	25%						

Return on Equity (ROE)	1-Jun-03	1-Jun-04	1-Jun-05	1-Jun-06	1-Jun-07	1-Jun-08	01-Jun-09
Equity inflows	60.59	42.29					
Cashflow available to equity holders			19.63	39.77	70.31	111.55	155.98
Net flows	-60.59	4 2 29	19.63	39.77	70.31	111.55	155.98
ROE	57%						

Debt Service Coverage Ratio (DSCR)	Minimum	Average	Maximum	01-Jun-05	01-Jun-06	01-Juu-07	01-Jun-08	01-Jon-09
Cashflow available for debt service (CADS)	46.10	84.30	94.44	46.10	55.19	64.59	74.31	75.60
Debt service payment - all debt	6.83	19.56	31.60	20.25	31.60	30.34	29.07	27.81
Debt service payment - Senior debt	14.05	18.98	24.56	14.05	24.56	23.30	22.05	20.75
Debt service payment - subordinated debt	6.20	6.91	7.04	6.20	7.04	7.03	7.03	7.02
Cashflow available for sub debt	30.63	77.98	94.44	32.05	30.63	41.28	52.26	54.36
DSCR - All	1.75	6.00	12.81	2.28	1.75	2.13	2.56	2.72
DSCR - Senior	2.25	3.90	5.66	3.28	2.25	2.77	3.37	3.64
DSCR - Subordinated	4.35	9.15	12.81	5.17	4.35	5.87	7.44	7.81

Cover Ratios	15% Discount Rate	01-Jun-05	01-Jun-06	01-Jun-07	01-Jun-08	01-Jnn-09
CADS		46.10	55.19	64.59	74.31	75.60
Outstanding debt		150.00	137.87	125.42	112.60	99.35
PV of CADS over Loan Life		406.57	421.45	429.48	429.32	419.41

Project name: **La Paz Container Terminal (LPCT) Project**

Sheet: *Miscellaneous Calculations*

Presentation currency: All figures are in Million US Dollar, unless otherwise indicated.

Asset Base	Depreciation/ Amortization Rate	End of Construction	01-Jun-05	01-Jun-06	01-Jun-07	01-Jun-08	01-Jun-09	01-Jun-10	01-Jun-11	01-Jun-12	01-Jun-13	01-Jun-14
Land and startup costs	0%	44.50	44.50	44.50	44.50.	44.50	44.50	44.50	44.50	44.50	44.50	44.50
Quay construction	2%	24.30	24.30	23.81	23.34	22.87	22.41	21.97	21.53	21.10	20.67	20.26
Yard construction	2%	98.00	98.00	96.04	94.12	92.24	90.39	88.58	86.81	85.08	83.37	81.71
Quay cranes	5%	15.00	15.00	14.25	13.54	12.86	12.22	11.61	11.03	10.48	9.95	9.45
Yard gantries	7%	12.00	12.00	11.16	10.38	9.65	8.98	8.35	7.76	7.22	6.71	6.24
Other yard equipment	12%	14.93	14.93	13.14	11.56	10.17	8.95	7.88	6.93	6.10	5.37	4.73
Contingency	12%	22.40	22.40	19.71	17.34	15.26	13.43	11.82	10.40	9.15	8.05	7.09
IDC	10%	18.79	18.79	16.91	15.22	13.70	12.33	11.10	9.99	8.99	8.09	7.28
Upfront fees	8%	1.70	1.70	1.56	1.44	1.32	1.22	1.12	1.03	0.95	0.87	0.80
Commitment fees	8%	1.25	1.25	1.15	1.06	0.98	0.90	0.83	0.76	0.70	0.64	0.59
Monitoring fees	8%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Asset Base		252.87	252.87	242.24	232.50	223.56	215.33	207.75	200.74	194.26	188.24	182.65

Depreciation/Amortization Expense	01-Jun-05	01-Jun-06	01-Jun-07	01-Jun-08	01-Jun-09	01-Jun-10	01-Jun-11	01-Jun-12	01-Jun-13	01-Jun-14
Land and startup costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quay construction	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42	0.41	0.41
Yard construction	1.96	1.92	1.88	1.84	1.81	1.77	1.74	1.70	1.67	1.63
Quay cranes	0.75	0.71	0.68	0.64	0.61	0.58	0.55	0.52	0.50	0.47
Yard gantries	0.84	0.78	0.73	0.68	0.63	0.58	0.54	0.51	0.47	0.44
Other yard equipment	1.79	1.58	1.39	1.22	1.07	0.95	0.83	0.73	0.64	0.57
Contingency	2.69	2.36	2.08	1.83	1.61	1.42	1.25	1.10	0.97	0.85
IDC	1.88	1.69	1.52	1.37	1.23	1.11	1.00	0.90	0.81	0.73
Upfront fees	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.08	0.07	0.06
Commitment fees	0.10	0.09	0.08	0.08	0.07	0.07	0.06	0.06	0.05	0.05
Monitoring fees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PART IV

Finance Documents

chapter 8

LOAN AGREEMENTS

INTRODUCTION[1]

As described in Chapter 3, sponsor(s) approaches lenders for funding near the conclusion of the second phase of project development, i.e., at the time the negotiation of project agreements is nearing completion. It normally delivers to the lenders copies of these agreements along with an offering memorandum describing precisely the project and proposed financing terms. If, upon reviewing the documents delivered, lenders preliminarily assess the project to be creditworthy, they may decide to undertake extensive due diligence over its technical and economic viability before making a formal commitment to lend.[2]

During and subsequent to the exercise of due diligence, lenders negotiate with sponsor(s) a common terms sheet (CTS)which sets forth the basic terms and conditions of their loans.[3] This document evolves over many meetings separately among the lenders and jointly with the sponsor(s). When executed, the lenders' obligation to lend is still subject to the fulfilment of

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'The terminology used in Chapters 8–10 and 12 with respect to certain agreements, concepts and methods of documenting transactions is not always standard throughout the industry. Project Finance is very deal specific. There are many varieties of documents found in Project Finance and some vary, depending upon the nature of the transaction. In particular, document names and acronyms differ from project to project, and the ones used here are not representative of all transactions. The names given to the financial parties also differ. With regard to some of these differences, a CTS may be used in large projects on occasion; in other large projects that same document may be called a common agreement and, in smaller and other transactions, there may not be any such agreement. In some transactions, an appendix, or annex, sets forth definitions common to all of project documents, but there is no CTS. An account agreement, a term used in this chapter, may he referred to as an escrow account agreement in some other deal. An inter-creditor agent, a term that the authors prefer, is also known as an ***agent,*** or a trustee; and so on.

'Lenders' due diligence involves significant costs that the sponsor(s) have to bear.

certain conditions precedent (CPs) set forth in the same document. Despite its conditional nature, the CTS is sometimes referred to as a lenders' commitment letter.

The CTS provides for a certain period (normally three months) for preparation and simultaneous execution of finance documents, incorporating the contents of the CTS. If the project vehicle fails to reach financial closing within this period, the lenders commitment expires and they are no longer under any obligation to lend. However, the commitment to lend may be extended by the lenders unilaterally, upon serving notice to the sponsor(s). Among other numerous stipulations, the CTS also provides for an availability period during which loans can be drawn – normally the period from financial closing to the scheduled commissioning date.

Figure 8.1 depicts the distribution of CTS provisions to the finance documents contemplated under it. It ceases to be effective once these documents are executed and come into force. Among the finance documents, this chapter focuses on the common terms agreement (CTA), individual loan facility agreements (ILFAs)[4] and amendment and waiver agreement (AWA).[5] Specifically the objectives of this chapter are to provide readers with a basic framework from which to understand the following:

- CTA terms and conditions that are common to all lenders, particularly disbursement and repayment terms, CPs, representations and warranties, covenants, events of default (EOD)and remedies.
- ILFA terms and conditions that are unique to each lender, particularly pricing, seniority of the loan, schedule of payments, maturity, unique covenants and termination.
- AWA provisions common to all lenders especially amendment and waiver of CPs and lenders' reserved discretion(s) (RDs)[6] particularly in projects involving subordinated lender(s). Lenders' RDs are described in Appendix 8.1.

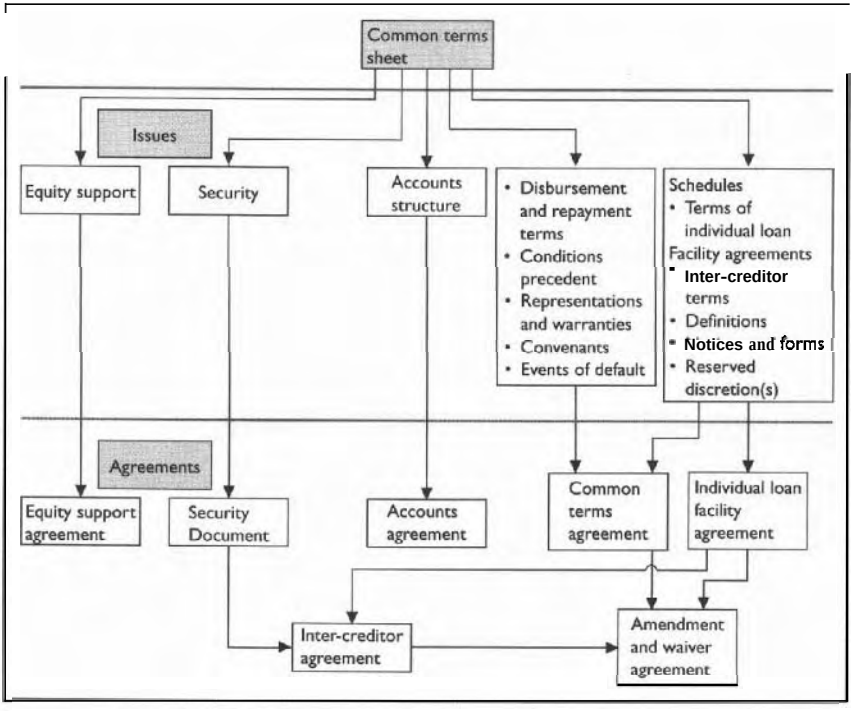
[3] Approaches often vary in this respect. Occasionally, each lender will negotiate its separate terms sheet with the sponsor(s). However, the CTS is a common approach for setting forth the terms and conditions of several lenders to a project. It has the benefit of avoiding conflicting terms and conditions, which arise when each lender negotiates separately.

[4] While individual loan facility agreements may be used in many Project Finance deals, they are not always referred to as facility agreements. In particular, if there is a take-out loan, the first agreement may he called a construction loan, rather than a loan facility agreement. The second loan may he referred to as the permanent loan.

[5] The AWA will amend the CTA under certain circumstances; hence, it is considered as an integral part of the loan agreements.

[6] Reserved discretion(s) is not generic to all Project Finance deals. It tends to he found in infrastructure transactions more often than other types of deals.

Figure 8.1 Contents of the Common Terms Sheet in the Finance Documents



Certain loan provisions under the CTA and ILFA, discussed in this chapter, will be cross-referenced to the respective sections in the Outline of Common Terms Sheet appearing at the end of the book. The equity support agreement (ESA)[7] and the accounts agreement (AA) will be discussed in the Chapter 9, while the inter-creditor arrangements and the security documents are discussed, respectively, in Chapters 10 and 12.

DISBURSEMENT AND REPAYMENT TERMS

Normally, all disbursements of loans and repayments under the finance documents are made in accordance with the provisions of the CTA, ILFAs and AA. As will be described immediately below, the CTA usually provides for terms and conditions related to drawdown, fees and expenses, increased

[7]The intention of the equity support agreement is to document the undertakings of the sponsor(s) relative to the project vehicle. Not all projects contain this document. For example, when there is an undertaking by the sponsor(s) to maintain an agreed ownership in the project vehicle, it may he referred to as an equity retention agreement.

costs, and voluntary and mandatory prepayment. The ILFAs contain provisions that are unique to each lender, e.g. repayment schedule, loan seniority, fee structure, and specific CPs and covenants imposed by that lender (and no other). This chapter will cover the collective terms found in the CTA and ILFA. It will not cover the ILFA, specifically, since its terms incorporate by reference those of the CTA.

Drawdown

Unlike a single-disbursement loan, project loans are disbursed in various amounts at various times during the construction period, in accordance with the needs and progress of the project, and any additional conditions imposed by the lenders. Normally, a Project Financing requires the lenders and the project vehicle to agree to a multiple disbursement, or drawdown, mechanism. As discussed subsequently, this drawdown mechanism requires fulfilment of a detailed CPs structure.

Amortized Repayment

Generally, interest accruing during the construction period is rolled up, or capitalized, instead of being repaid. Occasionally, the project vehicle may negotiate for an additional grace period, after the project is commissioned, during which repayment of principal is deferred and only interest over the outstanding amount of loans is payable. In most cases, however, the project vehicle starts repaying loans (principal plus interest) in semi-annual instalments, starting six months after the completion of the availability period. To this effect, the ILFAs provide for an amortization schedule defining the frequency of repayment and amounts payable at each repayment date. The two most common repayment schedules: the annuity payment and equal principal payment methods, defined in Appendix 3.1, are shown in Figure A3.1.2.

Fees and Expenses

In addition to repayment of loans, the project vehicle may be subject to paying the following three items under the CTA and ILFAs:

- Fees and expenses prior to first disbursement [Section E. 1(p), page 542]. These usually include fees and expenses due to the lenders and/or advisors as discussed further below.

- Fees payable throughout availability period or loan life, e.g.:
  (a) Commitment fee. A commitment fee, usually 1/4–3/4% per annum, calculated over the undisbursed balance which the lenders are committed to lend, is payable throughout the availability period. This fee is intended to hold funds for the borrower and cover the administrative and other costs associated with relevant loans.
  (b) Monitoring fee. Some lenders charge a monitoring fee, usually 1/4% per annum, calculated over the outstanding amount of loans intended to cover costs relevant to monitoring of the project, particularly during construction.

Increased Costs

The CTA will require the project vehicle to pay increased costs resulting from any law, regulation, treaty or interpretation in the host country that creates additional costs to the loans. For example, a new law may impose a withholding tax on interest payments made on foreign loans, or new foreign exchange regulations may directly, or indirectly, add to the cost of building the facility. Costs of loans may also be increased as a result of market disruption.

The following clauses in the CTA (or ILFA) are used to protect the lenders:

- **Tax** gross-up clause. This clause provides that all payments to the lenders under the finance documents shall be made without any deduction. If any tax is deducted from any amounts paid to the lenders, the project vehicle has to pay such additional amounts as may be necessary to ensure that the relevant lender receives the full amount it is owed. However, this clause does not apply to any tax assessed on a lender under the law of the jurisdiction in which it is incorporated.

  The CTA may also provide for the refunding of grossed-up taxes if the lender receives tax credit, for such withholding taxes in its place of incorporation. This provision, however, is often subject to a very complex negotiation.
- Market disruption clause. Under this clause, the project vehicle remains obligated to pay the additional costs that lenders may incur as a result of interbank market disruption. This normally happens if the lender is unable to match fund (i.e. obtain deposits in the money markets suffi-

cient to maintain the loans), for example, due to non-availability of relevant currency or is able to do so only with additional costs.

Break funding clause. Break funding refers to the penalty the project vehicle has to pay to the lenders if it prepays or cancels loans. As will be described immediately below, this clause protects lenders from impermissible prepayment or cancellation of loans or other similar actions by the project vehicle. The lenders, however, have to certify the relevant increased costs with a description in reasonable detail as to how such costs have been calculated.

Voluntary Prepayment [Section D. 1(a), page 537] and Cancellation [Section D. 2, page 538]

Voluntary prepayment of loans often includes the cancellation of all of the project vehicle's lines of credit. Lenders, generally, do not like voluntary prepayment and/or early cancellation of loans for the following reasons:

- They want a return from loans for a specified minimum period to compensate (a)the investment made in time; and (b)due diligence needed to get the loans approved internally, documented and booked.
- If the loans are match-funded, lenders may not have an alternate option immediately available to reinvest the prepaid loans. Therefore, they run the risk of not having sufficient interest income on loans to offset the corresponding costs of those deposits.

Lenders typically shift the risk of re-employing prepaid loans through insertion of a break funding clause, requiring the project vehicle to pay the costs involved therewith. Nonetheless, provisions are negotiated in the CTA as to when and how voluntary prepayment and cancellation may be permitted in the following cases:

- During the availability period. The project vehicle may be allowed to prepay/cancel its loan(s) under two circumstances:
  (a) At the completion stage of the project, when it is mutually determined that further drawings are not needed to implement the project, and the project vehicle successfully demonstrates to the satisfaction of the lenders that no forecast shortfall will exist as a result of such cancellation. In this case, it is usually required to give usually a prior prepayment/cancellation notice to each of the lenders and the inter-creditor agent. However, it may have to pay a moderate administrative fee for this right.
  (b) If any *lender* gives notice to the project vehicle of any increased costs. In this case, the project vehicle may elect to cancel loans of

that particular lender and prepay all outstanding obligations on any banking day by furnishing five business days' prior notice to the inter-creditor agent. Normally, the project vehicle indemnifies the increased costs up to the prepayment date.

- During the operation period. During this period, the project vehicle may be allowed to prepay/cancel loans by delivering prior notice to the inter-creditor agent (and, if required under an ILFA, directly to the relevant lender). It is permitted to settle only on an interest payment date because a scheduled principal payment and the matching deposit fall due thereon. Prepayment on this date ensures that the borrower cannot avoid paying interest on the principal it owes to the bank and/or the hank owes to the depositor. It may face rather stiff penalties, if it prepays or cancels loans on other than the specified date, or violates the required notice period. The project vehicle usually negotiates avidly to minimize the notice period and maximize the alternative options for payment dates.

  Additionally, the CTA provides for the minimum acceptable amount that may be prepaid in whole, or in part, and a mechanism through which to apply the prepaid amount on pro rata basis against the outstanding loans in inverse order of maturity.

Mandatory Prepayment [Section D. 1(b), page 537] and Cancellation

In contrast to the voluntary prepayment, the project vehicle may be required to make mandatory prepayment by the lenders under the following circumstances:

- When it receives:
  (a) Performance liquidated damages (PLDs) from the construction contractor.

  The construction contractor provides a performance guarantee in the form of LDs under the engineering, procurement and construction (EPC) contract. If it fails to perform under the contract, it has to pay relevant LDs sufficient in amount to ensure that the debt service cover ratio (DSCR) and loan life cover ratio (LLCR) on scheduled payment date are at least equal to the level of such ratios contained in the lenders base case. Surplus LDs constitute project revenues and are transferred to the proceeds accounts.

  (b) Termination payment under the Implementation Agreement (IA). If the project is located in a developing country, the host government under the IA and, if appropriate, the off-taker under the off-

take agreement remain responsible for paying compensation contemplated under the relevant agreement pursuant to the premature termination of the project due to any breach by the government and/or its agencies.

(c) Insurance proceeds for physical damage or loss of the project. The same notion also applies in cases of receipt of insurance proceeds by the project vehicle as a result of any physical damage of the facility. However, such proceeds may be applied for reinstatement of the damaged facility if:

The project vehicle provides for a reinstatement plan, to the satisfaction of the lenders, that the proposed reinstatement will achieve the level of performance that existed prior to the event leading to the insurance claims.

A forecast shows that no default would arise at anytime in the future if such reinstatement were to take place.

If the relevant insurance proceeds exceed the actual costs of the agreed reinstatement, the surplus is applied for prepayment of loans.

- If the lender terminates the loans pursuant to a change in law which makes lending unlawful.

  Mandatory prepayment of loans is also required to be made if it becomes unlawful in any jurisdiction for a lender to give effect to any of its obligations as contemplated under an ILFA, or to make, fund or maintain its participation in any disbursement. For example, an international financial embargo may have been imposed upon the host country, or a new foreign exchange regulation in the lender's country may be enabled, making it impossible to maintain a loan. In such a case, the lender has to deliver notice to the project vehicle in this regard, which forthwith terminates its commitment. This provision is often called the illegality clause of a credit agreement, excusing a lender from its obligation to maintain unlawful loans.

However, sometimes the ILFA may provide for the use of reasonable efforts by the lender to transfer its loan commitment to its affiliates, or other bank, if the illegality can be cured thereby without incurring material expense. If the transfer is not possible, the project vehicle has to prepay loans together with all other amounts payable to the relevant lender before the prepayment gives rise to unlawfulness.

The question that is often avidly negotiated is whether the project vehicle will be liable for the break funding costs of the lenders pursuant to the prepayment under the illegality clause. Normally, it may have to agree to pay the actual loss excluding the deemed profit.

CONDITIONS PRECEDENT

As the term implies, CPs are preconditions to be satisfied by the project vehicle in order to obligate lenders to disburse under their loans. As discussed earlier, project loans involve a multiple disbursement mechanism, which usually provides for a rather detailed CPs structure. For example, whereas under a single disbursement loan the project vehicle has to satisfy one set of CPs before disbursement, a multiple-disbursement involves satisfaction of two sets of CPs, namely, general CPs to first disbursement and additional CPs to each subsequent disbursement. [Section E. 1, page 538, and Section E. 2, page 542]. All these CPs are interwoven and have to be satisfied before a disbursement under the loans occurs.

If the project vehicle fails to satisfy the CPs, lenders can cancel their loan commitment. However, the project vehicle may initiate judicial proceedings against the lenders if it believes that it has been damaged by lenders' refusal to lend in the project. In this case, the court may examine whether lenders have exercised reasonable discretion and good faith to decide not to advance loans.[8] Further, the ILFA often provides that lenders' commitment to lend will cease if the project vehicle fails to request its first disbursement within a specified date. This provision limits, to some extent, project vehicle's scope to initiate judicial proceedings against lenders for their suspension of loans pursuant to the project vehicle's failure to draw its first disbursement within the prescribed date.

In a parallel vein, the question may also arise in respect of the project vehicle's obligation to borrow. The project vehicle, however, may cancel unused or undrawn amount of loans in given circumstances as discussed earlier.

General CPs to First Disbursement

General CPs to first disbursement may be classified into two groups for discussion: (a)documentary CPs; and (b)non-documentary CPs. Normally, the CTA provides for a schedule setting forth the documentary CPs that the project vehicle has to furnish before first disbursement. The inter-creditor agent, on behalf of the lenders, receives these documents and confirms whether the CPs have been satisfied. On occasion, some of the documentary CPs described below are required to be satisfied before financial closing.

[8] See Gooch, Anthony C. and Klein, Linda B., Documentation *for* Loans, *Assignments* and Participations, Euromoney Publications PLC, 1996, p. *45.*

The principal documentary CPs include the following:

- Delivery of project documents [Section E. 1(c), page 539] and finance documents [Section E. 1(b), page 539]. A project derives its value from the project documents. Effective project documents and contracts ensure the continuing value of the project. Therefore, lenders require the project vehicle to deliver properly executed and effective project documents and finance documents as CPs to first disbursement, including:
  (a) The IA or concession agreement.
  (b) The land lease agreement (LLA), if the project site is a leasehold.
  (c) The EPC contract.
  (d) The off-take agreement, if relevant.
  (e) The resource supply agreement.
  (f) Each facility agreement.
  (g) The common terms agreement.
  (h) The equity support agreement.
  (i) All related credit enhancements.

  In addition to delivering the project and finance documents mentioned above, the project vehicle has to certify that its board of directors has duly authorized the executors to execute all documents on its behalf.
- Security documents [Section E. 1(g), page 540]. Lenders will require the project vehicle to submit properly executed and perfected security documents before first disbursement. These normally include:
  (a) Simple assignment of the take-or-pay agreement, if applicable, in addition to all other project agreements.
  (b) Pledge of shares along with undated share transfer forms executed in blank.
  (c) Simple mortgage over the project site and all other immovable assets.
  (d) Simple hypothecation of all movable assets of the project, including fixed and floating charges.
  (e) Assignment of actionable claims, i.e., insurance(s) and LDs.

  Chapter 12 covers issues related to security in more detail.
- Legal opinion [Section E. 1(o), page 541]. The legal advisors provide opinions on the validity and enforceability of all project and finance documents, including security documents. They also opine on the satisfaction of the representations and warranties provided by the project vehicle as CPs to first and all drawdowns. As discussed in Chapter 12, legal opinions are usually required from:
  (a) Lenders' local counsel in the host country where the project is lo-

(b) Lenders' counsel for the money-centre jurisdiction under the law of which the loan agreement and other similar documents are governed.
(c) Offshore counsel in the jurisdiction in which the owner of the project vehicle is incorporated.

There may be other opinions as well, including:

(a) Government's legal advisor, e.g. the Attorney General (AG) or the ministry of law.
(b) External and internal counsels of the EPC contractor.

Non-documentary CPs to first disbursement usually include the following:

- **Equity** [Section E. 1(f), page 540]. Initially, lenders require the sponsor(s) to invest a minimum 35–40% and, depending on negotiation, a maximum of 100% of their total base equity commitment as a CP to first disbursement. The project vehicle auditor certifies the infusion of this threshold of equity.
- Fees and expenses [Section E. 1(p), page 542]. As discussed earlier, the project vehicle has to pay all fees, costs and expenses due to the lenders and their advisors under the finance documents on or before the first disbursement date. However, it may also agree that these fees and expenses shall be paid out of the proceeds of the disbursement due on the first disbursement date. In the latter situation, lenders will require the project vehicle to affirm that fees and expenses meted out from the loan proceeds will be duly invoiced and will not be subject to any genuine and good faith dispute.
- Confirmation from all lenders [Section E. 1(r), page 542]. In addition, each of the lenders has to confirm that all CPs specifically referred to in the relevant IFLA have been fulfilled or waived.

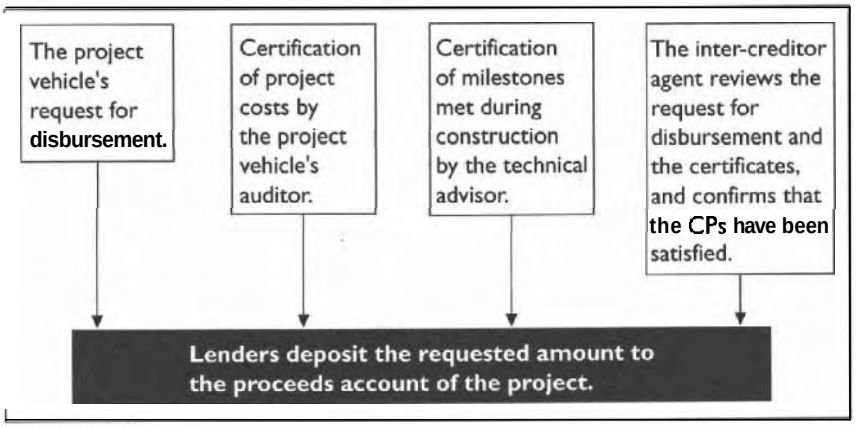
Additional CPs to Subsequent Disbursement [Section E. 2, page 542]

Normally, major additional CPs to subsequent disbursement include the following:

- Request for disbursement [Section E. 2(e), page 542]. In order to maintain uniformity in loan disbursement, lenders require the project vehicle to make request for loans in specified form under the ILFAs. The request for loan is often called notice of borrowing. A standard form of request for disbursement is set forth in the ILFA. This request is submitted usually five to seven business days prior to the proposed date of

disbursement. Figure 8.2 illustrates the steps that are taken before a disbursement.

Figure 8.2 Steps Involved in Loan Disbursements



The project vehicle's auditor has to confirm the project costs that have become due and payable, or will become due and payable, within a certain number of days, e.g. 45 days of the proposed drawdown date. The disbursement request has to he certified substantially in the form under the CTA by the technical advisor describing in reasonable detail the project costs which the relevant drawing will, or is likely to, fund.

- Representations and warranties. The sponsor(s) [Section A. 7, page 529] and the project vehicle [Section F, page 543] have to repeat the representations and warranties as being effective and continuing before each disbursement. They are also required to notify the lenders immediately should there be any change.
- No default [Section E. 2(b), page 542]. There should not he any default or EOD having occurred or continuing at the time of any disbursement.
- Equity [Section E. 2(f), page 543]. It has been mentioned earlier that sponsor's equity participation ensures its commitment in the project. Therefore, lenders require that the proportionate equity at each drawdown be infused into the proceeds account at least two days prior to the date when the loan draws are to be received. The ESA provides for the equity that the sponsor(s) is committed to invest in the project at each draw and is the subject of Chapter 9.
- No material adverse change (MAC)[Section H. 23, page 556; Section F (e), page 544]. In addition, the project vehicle has to confirm that no MAC in the financial condition of the sponsor(s), project vehicle or major project participants has occurred and is continuing. This is needed

because any MAC could have a negative impact on the project, in terms of reducing their ability to perform under the loan. Any MAC would also amount to default entitling lenders to accelerate or suspend or cancel loans.

It should be duly noted that lenders have the rights to waive CPs without limitation. Hence, they may choose to waive MAC, if such waiver does not materially harm their security interests in the project.

REPRESENTATIONS AND WARRANTIES

Legal terms such as *representations* and *warranties* are used interchangeably by many but actually have different meanings.[9]

Under the law, a representation under a loan agreement is a statement of historical, or current, fact that induces the lenders to enter into the contract. On the other hand, a warranty is a guarantee that a given fact will exist at some future date, as warranted.[10] Intentional misrepresentation by the project vehicle in connection with the facts stated to be true renders the contract voidable at the option of the lenders. In this case, lenders may initiate tortious claims against such misrepresentation. Under a warranty, however, the project vehicle either expressly, or impliedly, indemnifies the lenders for losses that they may incur if the facts warranted prove untrue.[11] Inaccuracy of the facts warranted would amount to a breach of contract on the part of the project vehicle that would enable lenders to take civil actions while the contract remains binding on the former.

The main objectives of such representations and warranties in a credit agreement are several, namely:

- It minimizes lenders' due diligence costs since they can rely on the facts represented and warranted as being true.
- Representations and warranties work, as a checklist, to elicit all relevant information needed before making disbursements.
- Non-compliance with, or untruth of, any facts represented and warranted gives rise to a default under the loans, entitling lenders to take relevant actions, e.g. a drawstop and/or acceleration of outstanding loans under the loan agreement.

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[9] **See Gooch, Anthony C. and** Klein, **Linda B., Documentation for Loans, Assignments and Participations, Euromoney Publications PLC, 1996, p. 68.**

[10] **See Hoffman, Scott L., *The Law* and Business of *International* Project Finance,** Kluwer Law **International, 1998, p. 193.**

[11] **See Black, Henry Campbell, Nolan, Joseph R. and Nolan-Haley, Jacqueline M., Black's Law Dictionary, sixth edition, West Publishing Company, 1991, p. 1586.**

However, the reason for requiring the project vehicle to both represent and warrant the same facts prevents the unanticipated blurring of these two concepts by some court that may have the consequence of defeating lenders' interests. For instance, the project vehicle may represent "to our knowledge there is no state legislation in the making that may adversely affect project operation". The question may arise as to whether the project vehicle incurs tortious liability for overlooking any such legislation that was, in fact, under the process of making before the representation was made. A legal battle may ensue whether the project vehicle exercised due diligence and reasonable prudence to become aware of the fact, and eventually the question may have to be resolved by a competent court. Lenders cannot be expected to wait so long for a court verdict. To avoid the problem, they would insist that the project vehicle both represents and warrants the same facts so that non-compliance with a warranty would amount to a breach of contract.

Generally, the principal provisions of project vehicle's representations and warranties pertain to the following:

- Ongoing corporate status [Section F. **(a), page** 543] and effective government authorizations [Section F. **(f),** page 544]. A corporation may jeopardize its corporate status as a consequence of its failure to comply with certain domestic laws, e.g. non-payment of statutory taxes, which may in turn affect the operation of the project. Therefore, lenders will require the project vehicle to represent and warrant that its corporate status under the jurisdiction it has been organized is in "good standing". If this is not the case, lenders can drawstop or take other appropriate actions. At the same time, lenders are always concerned with the continuity and effectiveness of the government authorizations. For instance, under certain legal systems, concessions, licences and permits require periodic renewals and are not issued to the project vehicle for the entire project life. In this case, lenders require assurances that all government authorizations – included in a schedule to the CTA – are always valid and in full effect.
- No default [Section F. (e),page 544]. Lenders will require the project vehicle to assert that no default under any project or finance documents has occurred, or is continuing. Normally, events that constitute defaults under the loans are pre-negotiated and inserted in the CTA and ILFAs. We will discuss default later in this chapter.

  While making representations and warranties in respect of existence of default or EOD under the project or finance documents, the project vehicle may insist that these include knowledge limitations that normally appear in the legal opinion of the counsels. Legal opinions are

usually qualified by certain knowledge constraints particularly with factual matters that might not be known to the counsel. For example, a legal counsel may not become aware of any threatened proceedings against the project vehicle, which if adversely determined, might have material adverse effects on the project. Such a legal opinion is subject to knowledge exception. Lenders are unlikely to he comforted with such an opinion if given by an outside counsel. They, therefore, require a legal opinion from the inside counsel of the project vehicle in this regard since he or she is more familiar with sponsor(s) and the project vehicle than an outside counsel.

- Unaffected project security [Section F. **(p),**page **545].** Further indebtedness of the project vehicle and dilution of lenders' security is an important concern of the lenders. Therefore, they will require a first priority lien over all project assets as security for the loans. The project vehicle has to represent and warrant before all drawdowns that it has not further encumbered its assets by way of creating security. This provision not only protects lenders security interests in the project but also discourages the prospective future lenders to commit loans to the project upon the assets that are already encumbered. However, certain statutory liens, e.g. government taxes, are excluded from the strictness of this provision since these are normally preferential.
- Fair financial statement **[Section** F. (k), page **545].** Project's financial statements are vital for the lenders to consider disbursement of loans. Consequently, they require that the project vehicle represent and warrant that its financial statements are fair and reliable. This provision enables lenders to declare an EOD if the financial statement of the project turns out to be materially misleading. In order to avoid the difficulties that may arise as a result of conflicting accounting principles, accounting standards to be used by the project vehicle are agreed during negotiation.
- No MAC [Section H. **23,** page *556,* and Section **F.** (e), page **544].** As discussed previously, MAC refers to the change in the financial condition of the project vehicle, sponsor(s) or the major project participants that may materially affect their, or the project vehicle's, ability to perform under the loan. For example, insolvency of the EPC contractor may affect its ability to complete the project on schedule, and incapability of the off-taker to purchase products or service under the off-take agreement will frustrate revenue generation. Situations like these materially impair and defeat lenders' interests. As a result, they prefer to be assured that the financial conditions of the project vehicle, sponsor(s) or the major project participants are sound each time there is a request

for loan draw. The project vehicle often tries to limit this as a CP for lenders' obligation to lend. The concern of the project vehicle in this regard is that lenders may call off loans at any time on the grounds of MAC. However, it has been mentioned earlier that lenders' refusal to make a committed loan may be challenged by the project vehicle in the courts.

- Environmental compliance [Section F. (w), page 546]. The project vehicle is required to represent and warrant that all environmental requirements have been complied with and there is no threatened environmental action against it. It also has to confirm that it is not subject to any pending environmental liability.
- No litigation [Section F. (l), page 545]. The project vehicle represents and warrants that no material litigation or other proceedings involving the project is current, or to its knowledge pending or threatened, which if adversely determined, would have material adverse effect on the project.

COVENANTS

In project loan transactions, covenants mean legally enforceable promises of the project vehicle in writing, which will be effective throughout the loan life. They are also statements as to facts in the future, which are true on the date they are stated. According to their nature covenants may be grouped into two broad categories:

- Positive covenants, or promises to undertake certain courses of actions.
- Negative covenants, or promises to abstain from undertaking certain other courses of actions.

As discussed above, representations and warranties are assurances by the project vehicle in relation to historical and current facts on the date they are stated, whereas covenants are promises to be complied with in the future. All representations, warranties and covenants are contractually interlinked in order to protect the integrity of lenders' interests. For example, the project vehicle represents and warrants that its assets are free from encumbrances except the permitted security. This is assumed to be true on, and as of, the date the representation and warranty is made. However, it does not constitute an absolute bar on the project vehicle from creating security over its assets in the future. As a result, a covenant is required to obligate it not to dilute lenders' security by further indebtedness.

Covenants are meant to serve the following functions:

- Protect the integrity of the project assets and business.

- Preserve repayment capacity of the project vehicle.
- Ensure steady flow of information.
- Protect lenders' security from deterioration.
- Provide lenders with rights to call off loans and enforce security if any covenants are not complied with.

To effectuate these functions, lenders generally require the project vehicle to covenant that it will:

- Perform in accordance with the project documents and finance documents.
- Continuously update lenders with project's financial, technical and operational information.
- Not change its business, or undertake any actions, that may adversely effect lenders' security interests.

Positive Covenants

Through covenants to perform, or positive covenants, the project vehicle binds itself to consistently undertake certain courses of actions in relation with the project during the loan life. The important positive covenants of the project vehicle may be categorized into three groups for discussion: (a) positive covenants restricting the use of free cash flow (FCF); (b) positive covenants related to information; and (c) other positive covenants.

Positive Covenants Restricting the Use of FCF

As discussed in more detail in Chapter 9, project cash flows provide the most significant security in a Project Financing. Hence, lenders devise mechanisms to restrict the use of project cash flows, including:

- Maintenance of project accounts [Section *C*. **1,** page 532]. An AA[12] is entered into between the lenders and the project vehicle as a CP to first disbursement. The project vehicle has to covenant that it will maintain the project accounts as agreed to under the agreement throughout the loan life. As discussed in Chapter 9, project accounts are structured for proper implementation of cash flows waterfall or cascade. Usually, lenders possess considerable controls over the project accounts by requiring the project vehicle to have checks countersigned by the inter-creditor agent before withdrawals. Sometimes, however, the project vehicle may

[12] **In some jurisdictions, an account agreement is sometimes referred to as an "escrow account agreement".**

successfully negotiate to operate project accounts without lenders' interference until there is a breach.

- Adherence to the priority of payments [Section C. 8, page **535].** The project vehicle is required to covenant to adhere to the priority of payments agreed to in the cash waterfall, to be covered in Chapter 9.
- Maintenance of project cover ratios [Section ***G.* 1 (s),** page **549** and Section **H.** 21, page **556].** As discussed in Chapter 7, project vehicle also covenants that it will maintain the LLCR and DSCR as agreed to under the CTA and ILFAs. Usually, it has to deliver a forecast certificate to the lenders every six months showing:
  (a) (Prior to the project completion) the forecasted maximum loan outstanding, project costs and interest costs.
  (b) Forecasted total discounted net revenue from the project during the loan life.
  (c) Projected LLCR.
  (d) Projected debt service cover ratio (PDSCR)and historic debt service cover ratio (HDSCR).
  (e) DSCR for every semi-annual payments period left in the loan.

  If the above covenants are not maintained, a default under the loan agreements may occur, or a negative covenant may be triggered, disallowing dividend payments.
- Furnishing **budget** information [Section **G. 1(l)(ii),** page **548].** The project vehicle is required to operate and maintain the project in a safe, efficient and business-like manner and in accordance with good industry practice and all material requirements of the project documents. It has to furnish to the inter-creditor agent, between 120 and 90 days before the start of each year, a draft annual operating budget for that year (or part thereof), showing likely expenditure to be incurred in each month during that year. If the inter-creditor agent does not, acting on the instructions of the lenders (who shall have sought the advice from the technical advisor), reject the draft annual operating budget within one month of its receipt, such draft budget becomes the operating budget of that year (or part thereof). However, if the draft annual operating budget is rejected, and the inter-creditor agent and the project vehicle cannot resolve the dispute by the beginning of the relevant financial year, the operating budget is usually compiled using items in the previous year's operating budget. This budget continues until such time any agreement between the project vehicle and the inter-creditor agent is reached on the disputed operating budget.

  In addition, the project vehicle has to provide lenders with periodic reports on the project's operations and maintenance which enable lend-

ers to review project's performance against budget and maintenance costs, unusual maintenance costs, essential repairing, existence of force majeure (FM),if any, etc.

Positive Cooenants Related to Information

Full awareness of what is going on in the project's financial, technical and operational life is essential for the lenders to make prudent loan decisions. They cannot afford simply to disburse loans and expect repayment on schedule. They insist on being informed of all material information of the project as regard the following:

- Access to information [Section G. 1(b), page 546]. Lenders require the project vehicle to covenant that they will have the rights to inspect the project assets and records at any reasonable time. Normally, lenders visit the site at their own costs and without unreasonably interfering with the operations of the project. The project vehicle often negotiates to keep the number of lenders' visits to the project and inspections of records to a certain limit in a given year.
- Financial information [Section *G*. 1(a), page 546]. The project vehicle covenants to periodically furnish lenders with its audited and unaudited financial statements related to its income and changes in its financial positions. The financial statements have to be prepared in accordance with certain pre-negotiated standard accounting practices satisfactory to the lenders and duly audited by an independent accounting firm. In each case, the project vehicle has to represent and warrant the fairness of the financial information delivered. Financial information enables lenders to review whether the financial robustness of the project is sound enough to maintain the LLCR and DSCR of the project. This information is essential for them to make, or suspend, further disbursements during construction and/or take action at other times under the loan governance provisions.

  In addition, the project vehicle has to give notice to the lenders of any default or EOD that has occurred, or is likely to occur, in relation to the project, e.g. a cross-default. Failure of the project vehicle to deliver notice of default to the lenders in time may forfeit its rights to a cure period under direct agreements.
- Technical information. The provisions of technical information are related to construction completion of the project. Lenders are concerned about the project completion on schedule. Some milestones with regard to the progress of construction are often stipulated in the EPC contract. The project vehicle is required to furnish periodic reports on the progress

of the construction to the lenders that has to be certified by the technical advisor. It also has to inform the lenders of any change in the project scope, existence or likelihood of a default under the EPC contract.

- Operational information [Section G. 1(l), page 548]. Lenders' requirement for delivering project's operational information is largely related to the operating budget information as discussed above.

Other Positive Covenants

In addition to the positive covenants mentioned above, the CTA provides for certain other important covenants as well, which usually include the following:

- Maintenance of corporate status and validity of government authorizations [Section G. 1(c), page 547]. The project vehicle undertakes through covenants to maintain its corporate status intact and unaffected throughout the loan life. It has been mentioned earlier that the project vehicle may jeopardize its corporate status by non-compliance with certain domestic laws, e.g. environmental non-compliance, which may render the project inoperative. Failure to comply with this covenant constitutes a default and entitles lenders to relevant remedies. At the same time, it also has to undertake that all relevant government authorizations – concessions, licences and permits – for the operation of the project will be kept valid and current at all the times, e.g. by renewals or procurement as the case may be. Normally, lenders rely on the legal opinion of their local counsels to validate project vehicle's corporate status and government authorizations.
- Payment of taxes and other statutory fees [Section G. 1(o), page 548]. The project vehicle undertakes to pay all statutory taxes and fees when due and before any penalty or interests accrue on them. However, it is not barred by this provision to diligently contest an alleged obligation to pay, provided it maintains appropriate reserves for the contested amount. If it enjoys tax holidays or exemption of fees, it has to obtain necessary authorization to this effect as CPs to first disbursement.
- Maintenance of insurance(s) [Section G. 1(t), page 549]. With a view to mitigate potential natural perils, lenders require the project vehicle to insure against insurable risks related to the construction and operation of the project. All insurance policies are assigned to the lenders as a condition of loan. Normally, lenders rely on the report of the insurance advisor in connection with the compliance by the project vehicle with insurance provisions in the CTA.
- Compliance with environmental requirements [Section G. 1(p), page

549]. It has been mentioned earlier that non-compliance with environmental requirements may not only render the project inoperative but also impose a huge fine as actual, or punitive, damages. As a result, lenders are highly unlikely to lend to a project that is, or may be, subject to potential environmental liabilities. Normally, as CPs to all disbursements, the project vehicle has to comply with standard environmental guidelines existing in the host country. An independent environmental expert has to certify project vehicle's compliance with environmental requirements to the satisfaction of lenders.

Negative Covenants

The project vehicle is required also to abstain from undertaking certain courses of actions, which if undertaken, may adversely affect project's contractual integrity as well as lenders' security interests. Broadly, the main objective of negative pledges is to keep the project vehicle in the position it was when the lenders judged it to be creditworthy and entered into the finance documents.

However, subject to the prior approval of the lenders, the project vehicle may undertake some courses of actions that were negatively pledged under the CTA or ILFAs provided they do not put lenders' interest at risk. For example, the project vehicle has to undertake that there will not be any material amendment to the project's technical configuration during construction. However, construction amendments and their consequences are sometimes inevitable. If the change is significant, the project vehicle has to take prior approval of the lenders. Generally, the CTA provides for a schedule containing the courses of actions that can be undertaken with or without lenders' concurrence or consultation. These are referred to as lenders' RDs, discussed in detail in Appendix 8.1.

The fundamental negative covenants may be grouped into two categories: (a)those restricting the use of FCF; and (b)other negative covenants.

Negative Covenants Restricting the Use of FCF

Covenants that are meant to regulate the project cash flows are as follows:

- No distributions [Section G. 1(s), page 549]. Distributions normally include dividends to the shareholders, or any payments or set-off in cash. Under the CTA and ILFA the project vehicle covenants that it will not make any distribution during the construction period. However, after completion of the project, distributions may be allowed subject to the following:

(a) No default has occurred or may occur as a result of such restricted payment.
(b) First instalment of senior loans is made in full.
(c) PDSCR, HDSCR and LLCR will continue to be met and will not be affected by such payment.
(d) Each of the major maintenance reserve account, the senior debt service reserve account and the subordinated debt service reserve account, if any, are fully funded in accordance with the AA.

- No disposal of assets [Section G. 1(h), page 547]. Lenders prohibit the project vehicle through negative pledges to sell, transfer, grant or lease, or otherwise dispose of all, or a substantial part of, its assets. This clause, however, does not prohibit making disposal in ordinary course of business, or disposal otherwise permitted under the finance documents. Moreover, it may not prohibit disposal of assets in exchange for other assets comparable or superior as to type, value and quality, or disposal of assets that are no longer required for the project as contemplated under the recent operating budget. Usually, provisions are made to enable the project vehicle to dispose of assets not exceeding a certain quantum per year.
- No investments and subsidiaries [Section G. 1(r), page 549]. The project vehicle is required to covenant that it shall not acquire any share or loan capital of any corporate body or other investments except the permitted investments using cash balances in accordance with the AA. It is also prohibited to open any account otherwise than those contemplated under the AA.

  Through these covenants, the project vehicle restricts itself from having any subsidiary, or entering into any joint venture or partnership with other business entities.
- No further indebtedness [Section G. 1(f), page 547]. Lenders require the project vehicle to covenant that it will not borrow any money except under the finance documents.

Other Negative Covenants

In addition to the above, the CTA provides for the following other negative covenants:

- No creation of additional security over project assets [Section G. 1(d), page 547]. One of the important concerns for lenders is that the project vehicle may create additional security over its assets to secure further indebtedness. Dilution of security for further indebtedness may jeopardize lenders' interest in that it may reduce project vehicle's ability to

repay loans. Therefore, they require the project vehicle to covenant that it will not create, or permit to remain outstanding, any security interest over its present and future assets other than the permitted security, including statutory liens imposed by law. Usually, under the positive covenants, the project vehicle undertakes to keep current on its tax payment, which, if not complied with, may give rise to a default.

- No change of business [Section *G.* 1(i), page 547]. The project vehicle has to undertake that it will not engage in any business other than the project and activities reasonably incidental thereto. It also undertakes not to merge, demerge, amalgamate or consolidate its business with other entity, or reconstruct the project. This clause is meant to ensure that the project remains the sole and same entity to implement the purposes it was organized for.
- No cancellation or transfer of shares[13] [Section G. 1(q), page 549]. The project vehicle pledges that it will not purchase, cancel or redeem any of its shares, or issue further voting capital. It also undertakes not to register any transfer of shares in the company in breach of the ESA.
- No improper payment [Section *G.* 1(v), page 549]. Improper payment includes payment of unlawful commission, inducement, bribery, payoff or kick-back directly or indirectly in connection with the project. The project vehicle has to pledge that it will not make any such improper payment for procurement or maintenance of any concession, licence or permits relevant for the project.
- No execution of material project documents [Section G. 1(n), page 548 and Section J. 3, page 563]. The project vehicle pledges not to enter into any contracts without the consent of the required lenders, except the following:
  (a) The transactions documents.
  (b) Contracts contemplated by the project budget or the then operation budget.
  (c) Contracts required under the project documents.
  (d) Other contracts that have a monetary value not exceeding certain amount in each year as agreed to.

EVENTS 0 F DEFAULT

EOD are contractually tailored events under the CTA or ILFAs, occurrence of which:

[13] **This provision is usually found in an equity support agreement or a share retention agreement, which is discussed in Chapter 9.**

- Relieves lenders from their obligation to lend.
- Entitles them to enforce relevant remedies under the finance documents and security documents, including:
  (a) Acceleration of the loan.
  (b) A step-in to run the project until loans are repaid.
  (c) The auction of the facility to a third party to recover loans.

Confusion may arise in defining "default" and "EOD" under a finance document, given the conceptual difference between these terms may appear very narrow. However, there is considerable gap between default and an EOD in contextual application. For example, a default occurs once a contract is breached but it does not ripen into an EOD until lenders decide to exercise remedies thereon, or unless is left uncured within the permitted cure period.

Payment defaults include the following:

- Non-payment [Section H. **1,** page 551]. As is true in all corporate loan agreements, non-payment constitutes a default under the CTA and ILFAs. Non-payment triggering a default under these documents include: (a) non-payment of base or contingent equity by the sponsor(s); and (b) non-compliance with the repayment provisions of an ILFA. Either situation constitutes defaults and entitles lenders to exercise remedies.
- Failure to comply with equity commitment [Section H. **13,** page 554]. Defaults related to equity usually include the following:
  (a) The sponsor(s) fails to comply with its equity commitment as contemplated under the ESA. .
  (b) The project vehicle registers the issue or transfer of its share capital in breach of provisions of the ESA, or negative pledges.

  Failure of the relevant party to comply with its equity commitment gives rise to a default under the finance documents. In this case also, a short cure period may be negotiated.
- Cross-default [Section H. 4, page 551]. Cross-defaults under a finance document include the following:
  (a) Any of the project vehicle, sponsor(s) or a construction contractor fails to pay, when due, any financial indebtedness to third parties and such failure is not remedied within the relevant cure period.
  (b) Any default occurs under any document relating to financial indebtedness of any of these obligors.
  (c) Any security interest securing financial indebtedness over any asset of these obligors becomes enforceable.

  The project vehicle always wants to negotiate for a grace period to cure a non-payment default. In certain situations, lenders may agree for

a short grace period on condition that they will be reimbursed the expenses that are incurred for matching deposits in the interbank market, as a result of such non-payment.

In the case of cross-default, lenders usually seek to broaden them to include any default under other credit agreements, irrespective of whether or not an acceleration, pursuant to that default, occurs. The project vehicle and other major project participants, on the other hand, seek to limit lenders' remedies under a cross-default to cross-acceleration only, for example, when other lenders actually accelerate their loans.

Usually, they do not succeed, but it may be possible to convince lenders to agree that a cross-default may not constitute a default, when (a) the aggregate amount in default does not exceed certain amount (negotiated); or (b) it is unlikely to materially and adversely affect the project activities and lenders' interests.

Representational defaults entail:

- Misrepresentation [Section H. 3, page 551]. If any representation or warranty in, or in connection with, any of the project documents or finance documents is, or becomes, materially incorrect, a default is constituted.
- Misrepresentation of defaults under project documents [Section H. 3, page 551]. Misrepresentation of a default under any project documents causes a default under the finance documents.

The project vehicle usually insists on being granted a short period to cure any inaccurate representation or warranty under the finance documents. Acting reasonably, lenders may permit such period. Within that timeframe, a failure to do so would manifest a breach under the loans entitling lenders to pursue relevant remedies.

A default under a project document causes a default under the finance documents. Lenders often apprehend that the project vehicle may overlook, or misrepresent, an existing default under the project documents (which they may not know unless notified), with a view to avoiding a default under the finance documents. For example, while making any restricted payments during the operation period of the project, the project vehicle may conceal a default under a project document.

As mentioned earlier, the project vehicle's failure to notify lenders of a default under project document eliminates its claim for a cure period. However, there is little or no point if such a default is discovered after it has materially affected lenders' interest. Consequently, to check misrepresentation, lenders require experts' and legal counsels' opinions over the validity of any representation made by the project vehicle.

In addition to payment and representational defaults, there are certain other defaults under the finance documents:

- Non-compliance with covenants. It has been mentioned earlier that non-compliance with covenants under a project agreement causes defaults under the finance documents.

  The project vehicle, however, will negotiate for the right to invoke MAC should it breach a covenant, particularly if such action does not materially affect the project, or lenders' interests. Lenders may accept this defence if they are satisfied that such breach is unlikely to affect their interests.
- Insolvency [Section H. 5, page 551]. Initiation of any insolvency, bankruptcy or reorganization proceedings by the project vehicle or any major project participants constitutes defaults under the finance documents.

  With regard to insolvency, the project vehicle often successfully negotiates for a short period during which insolvency petition, or proposal, may be discharged.
- Government actions [Section H. **17, page** 555]. A default occurs if any government authority takes any action to expropriate the project vehicle, or if any government approval relevant for the operation of the project is revoked, cancelled or modified as to have a material adverse affect on the project.

  Expropriation of the project by the government is an explicit action. However, under certain situations, the lenders may not be aware of such government action. Usually, the project vehicle undertakes to notify the lenders of such action, as soon as it becomes aware of the government action.

Remedies Pursuant to EOD

Lenders are entitled to exercise remedies pursuant to a default or EOD under the finance documents [Section H. 25, page 557], which include but are not limited to, the following:

- Cancel all, or part, of the total commitments.
- Demand that all, or part, of the loans together with accrued interest and all other amounts accrued under the CTA or ILFA be immediately due and payable.
- Demand that the sponsor(s) pay an amount in respect of the base equity commitment and identified contingent equity commitment in accordance with the ESA (discussed in Chapter 9).

- Suspend all withdrawal rights by the project vehicle in respect to the project accounts except the restricted payment accounts (discussed in Chapter 9).

Remedies under security are also discussed in detail in Chapter 12. Remedies under direct agreements are discussed in Appendix 12.1.

AMENDMENT AND WAIVER AGREEMENT

Amendment and Waiver of CPs

As discussed earlier, a Project Finance deal involves a detailed CPs structure, elements of which may be difficult to meet before first drawdown. As a result, in certain situations, sponsor(s) will request a waiver of some CPs prior to first disbursement. Lenders, in such a case, have to decide whether to waive the relevant CPs altogether or, most commonly, to defer the relevant CPs to a following drawdown.

To facilitate modification of the CPs structure, an inter-creditor agreement is entered into among the lenders and the project vehicle, providing that a CP to first disbursement may be amended or waived – usually if 100% of the lenders agree.[14] CPs to subsequent disbursements are waived if the subsequent CPs group agree, usually lenders committing 66–75% of total loan commitment at that time [Section J. 3, page 563]. To formalize these agreements, an amendment and waiver agreement (AWA) is entered into among them and the project vehicle to incorporate those amended or waived provisions. However, we duly note that not all projects require such action because the specific need to execute an AWA may not arise.

In many developing countries, as described in Box 8.1, a common problem is the inability of the sponsor(s) to secure an exemption from the payment of stamp duty early enough to enable the proper recording of a legal mortgage over land and immovable assets prior to first drawdown.

Another area where amendments and waivers are needed involves the project agreements. Typically, the rights the project vehicle has to amend or waive provisions in the project agreements are restricted by lenders' RDs, discussed in some detail in Appendix 8.1.

RDs may be separated into three groups:

- Category-A RDs (the least important) require the project vehicle to consult with lenders before exercising certain rights under the project documents.

[14] Participation of the subordinated lender in the inter-creditor agreement depends on how deeply subordinated it is, as discussed in Chapter 10.

- Category-B RDs require the project vehicle to obtain a no-objection certificate from the lenders before taking permissible actions under the project documents.
- Category-C RDs (the most important) require the project vehicle to act as directed by the lenders in relation to certain provisions of the project agreement.

Box 8.1 Legal Mortgage over Land and Immovable Assets

Creation of security over the land and immovable assets of the project vehicle through a legal mortgage is usually one of the CPs to first disbursement. However, under certain jurisdictions, the proper recordation of a legal mortgage includes payment of significant stamp duty and registration fees from which the project vehicle is often exempted. The host government may grant such exemption as a policy to attract foreign investments or to encourage private sector participation in infrastructure development. However, securing an exemption may take considerable time if it is subject to bureaucratic formalities. Moreover, if it is apprehended that the exemption will not be obtained before the first drawing, the project vehicle may request lenders to soften the requirement based on the following conditions:

- Instead of a legal mortgage, the project vehicle will offer to create an equitable mortgage (see Chapter 12), over land and immovable assets in favour of the lenders for an agreed period, sufficient in duration to permit the exemption to be obtained. To this effect, it will deposit all title deeds and a memorandum of deposit of these deeds reflecting an intention to create equitable security with the security trustee.
- It will also provide an executed deed of mortgage and power of attorney, duly authorizing lenders' security trustee to convert the equitable mortgage into a simple mortgage:
  (a) As soon as the exemption is secured.
  (b) If there is default under the loan agreements.
  (c) If exemption cannot be secured within the prescribed period.

If lenders temporarily relax this CP through the necessary amendment, first disbursement can be made on schedule.

These RDs provide the lenders with a basis for ensuring that project agreements will not be modified or amended without their knowledge, participation to varying degrees, and consent.

Review Questions

1. What is a CTS? When does it bind the project vehicle and the lenders? When does it cease?

What is a CTA? Briefly describe the significance of a CTA in a Project Finance.

3. When is voluntary prepayment permitted?
4. In what situations is the project vehicle required to make mandatory prepayments?

Describe the role of CPs in disbursement of loans. What are the consequences of non-compliance with CPs?

Why do lenders require the project vehicle both represent and warrant the same statement? What are the consequences of non-compliance with representations and warranties?

7. "Covenants in Project Financing restrict free cash flows." Discuss.
8. Distinguish between default and EOD. What are the remedies available to the lenders pursuant to an EOD?

Under what circumstances would the amendment and waiver of CTA provisions become necessary? How are these effected?

10. What are lenders' RDs? Discuss in brief the reasons they are grouped into three categories.

APPENDIX 8 1
RESERVED DISCRETION(S)

From the lenders' perspective, the main objective of RDs is to have control over the project vehicle's exercise of its rights under the project agreements, particularly when decisions related to those rights might potentially affect lenders' security. Predictably, they can be expected to negotiate for the right to block any change in the project profile, the effect of which would have a material adverse consequence on the robustness and predictability of cash flows. These rights are referred to as RDs, separated by the negotiation process into three categories, as discussed below.

Lenders' Rights to Make Important Decisions without any Input from the Project Vehicle

Among other rights, RDs provide the lenders with rights to make major decisions in respect of project agreements, one of which is illustrated immediately below.

- Termination of project agreements. Through RDs the lenders will want to control the project vehicle's exercise of rights to terminate any one or all of the project agreements. With regard to any specific project agreement, the apprehensions of lenders centre on either of the following:
  (a) The project vehicle may terminate an agreement when continuation is necessary for the financial restructuring of the project, including the restoration of its ability to perform under the project agreements and finance documents.
  (b) The project vehicle may continue with a particular project agreement when termination of such contract becomes essential in the interest of the lenders.

As in the above example, termination of one particular contract may lead to termination of the others. Termination of the off-take agreement could lead to closure of the project, especially where no other off-taker of the product is available, or the off-take agreement does not permit alternative agreement. Similarly, termination of fuel supply agreement (FSA)may also make the project inoperative if the IA does not permit import of foreign fuels hy the project vehicle. At the same time, in certain circumstances, continuation with a project agreement that has become terminable may have an adverse material affect on the project. For example, rights to terminate an off-take agreement may arise, as a result of payment default by the off-taker that has not been cured within operative stipulation. If the off-taker's weak cash flow is creating the breach and the situation has no

foreseeable remedy, there may not be much point in continuing the operation.

Other examples of important project vehicle decisions that are ceded by the project vehicle through RDs to lenders may include the following:

- Transfer of the project to the host government or its designee pursuant to political FM. Discretion to elect to transfer the project to the government pursuant to government default or EOD arises as a result of nonpayment, contract abrogation or other actions such as expropriation, compulsory acquisition or nationalization of any ordinary share capital or any material right or assets of the project vehicle. In such circumstances, the lenders can require the project vehicle to transfer the project to the government or its designee after receiving the compensation set forth in the off-take agreement and/or the IA.
- Make, or desist from making, demand for payments. Lenders may reserve the rights to require the project vehicle to make, or desist from making, demand for payments that become due under project agreements. For instance, if the host government gives a guarantee under the IA to backstop amounts an off-taker may owe to the project vehicle, the lenders can require the project vehicle to make demand for such payment under the government guarantee. Likewise, lenders reserve under this category the rights to require the project vehicle to make demand for capacity payment from the off-taker pursuant co a Political FM event, or to demand LDs from the government-owned resource supply company for failure to perform.
- Initiate arbitration. A call for arbitration of a dispute would usually involve a large amount of money. Therefore, lenders reserve the rights to decide when and how to initiate arbitration. They may also require rights to decide whether arbitration needs to be conducted in a neutral venue, and to accept the mediated settlement of a dispute.

Lenders' Discretion to Exercise Veto Power over the Decisions of the Project Vehicle

A second category of RDs grants the lenders the right to exercise veto power over important actions that the project vehicle may take, materially affecting the operation of the project and/or lenders' security. Unlike the first category of RDs, where the lenders have absolute power to make decisions relative to the exercise of project vehicle rights under the project agreement, in the second case, lenders may consider the project vehicle's proposed course of actions prior to exercising veto power. For this purpose, a formal procedure is set forth enabling the project vehicle to seek approval

of the lenders for any action falling into this category. The project vehicle has to deliver a notice (the approval notice) to seek lenders' consent on a given issue. The notice contains in reasonable detail the manner in which the project vehicle wishes to act in relation to the matters covered under the notice. On receipt of the approval notice the lenders are required to give their decision generally by ten business days. However, they may be entitled to a reasonable extension. If lenders fail to respond to the notice within the time limit, it is presumed that they have given consent to the request made by the project vehicle. Conversely, in the event that lenders disagree with project vehicle's proposed course of action, the inter-creditor agent would set forth their position in writing and in reasonable detail. The latter might even specify any additional condition that would need to be met before a lenders' approval could be granted.

Within this category, additional project vehicle's actions that may require prior approval of the lenders are many, and spread over several project agreements:

- Consent to assignment of rights or interests by the counter-parties. Most important, the project vehicle has to seek approval of the lenders while consenting to the assignment or transfer by the government or other counter-parties of their rights, interests or benefits under particular project agreements, including any credit enhancement and/or direct agreements that may be directly or indirectly involved.

  Assignment or transfer of rights, interests or benefits by the government or other counter-parties may have the impact of changing the security created, and credit enhancement extended, to the lenders in respect of the relevant project agreements. Generally, in circumstances where the counter-parties have to assign or otherwise dispose of their rights, interests or benefits to another party, they are required to execute a valid and binding undertaking in favour of the lenders. Through this undertaking such assignee guarantees that it and/or its successor will be bound by all of the original obligations and liabilities under the project agreements.
- Issue project completion certificates. Lenders will require that the project vehicle refrain from issuing project completion certificate, e.g. the takeover certificate under the EPC contract. Issuance of the takeover certificate may have the following meaning in the finance documents:
  (a) Mechanical completion of the project has been achieved.
  (b) Commercial operation tests of the project were successful.
  (c) Facility has satisfactorily completed all its performance tests.
  (d) EPC contractor has paid to the project vehicle all LDs due, if any, under the project agreements.

(e) All necessary drawings and information the EPC contractor is obligated under the EPC contract to provide have been received before takeover.
(f) The EPC contractor is released from any further obligation.

- Consent to variations under EPC or other project agreements. Under the EPC arrangements, the EPC contractor agrees to pay LDs for delay in achieving the takeover and/or for failure to meet performance specifications. In such a case, the project vehicle may receive the LDs, as contemplated under the EPC contract, or elect to a price abatement outside its terms, by way of an offset. Lenders would insist on being able to veto any decisions in this respect on the part of the project vehicle. The project vehicle may also be required to seek approval of the lenders before it consents to an amendment or variation in any provisions of a contract or subcontract that may have a material adverse effect on the project. In addition, the lenders reserve the rights to exercise veto power over the decision of the project vehicle to settle or compromise a claim under EPC arrangements or other project agreements involving considerably large amount of money.
- Declare cessation of Political FM and consent to restoration or termination of the project agreement. Lenders may also require veto power over a decision by the project vehicle regarding the cessation of Political FM. Political FM event may result in damage to the facility that requires a material modification, addition, or repair to the facility in order to restore its performance capability. In such a case, the host government, subject to obtaining consent from the project vehicle, may choose to restore the project, or terminate the project agreement after paying adequate compensation. In either case, lenders can veto the project vehicle's decision.

Lenders' Discretion to be Consulted before the Project Vehicle Undertakes Minor Courses of Action

A third important category of rights ceded by the project vehicle to the lenders through RDs are lenders' right of consultation for more minor matters, namely:

- Settlement, or compromise of minor claims under a project agreement, or referral of a dispute for non-binding mediation by an expert.
- Declaration of mechanical completion, approval of performance test programme, and submission of preliminary cost estimate for restoration as a consequence of Political FM, etc.

However, it is to be noted that the project vehicle may choose to undertake a different course of action notwithstanding the suggestions given by the lenders during consultation. In such a case, the project vehicle has to furnish a written statement setting forth the reasons for adopting the particular course of action. Further, the project vehicle's consultation with the lenders, before taking action in respect of minor matters, does not relieve it of any liability or consequences thereby incurred.

CASE STUDY

LAND AHOY![15]

The trip to New York had been a big success for Johnny and Felipe of La Comercial. A mandate letter had been entered into between Russ Atkins, the tall, lanky and personable President of Container Movers and the diminutive in stature, but larger-than-life Johnny Sanchez. Each was handing out cigars as if a financial closing had been reached. Everyone seemed pretty enthused with the results, including the other lenders who had also received their mandate letters.

Most of all, Johnny was ecstatic! It was a whirlwind return to the city where he had spent so much of his earlier life. There was no question, though, that the meetings, cocktails and dinners had taken their toll on everyone.

Several noteworthy developments had taken place. In their private meetings, the lenders had agreed quite spontaneously to make La Comercial the modelling bank. This was highly unusual. Banks in emerging markets, rarely if ever, are accorded this role because they lack knowledge of Project Finance techniques and practices. Johnny, however, was an experienced hand at this business and had chaired the meetings superbly – there was no doubt of that! He was, of course, ably assisted by Felipe's very thorough preparation and understanding of the model itself.

In fact, Johnny had done far more than expected. He had presented the due diligence drafts and defended them against occasional attacks from the sponsor, who felt some of the items that were being looked into were superfluous; or Tom Stevens himself, who opined on several occasions that the level of contemplated detail in the scopes of work (SOW) was excessive. Most of all, Johnny had exercised judicious leadership whenever it was necessary, or unnecessary. Between the two of them, Johnny and Felipe had anticipated every move, as well as every issue, at the two-day meeting. Together, they had created a great, if not spectacular, impression – not only on the newly found lending colleagues, but also on Metropolitan Bank and Container Movers.

Tom Stevens with his wife, Melinda, had hosted a small and private dinner in Johnny's honour in the heart of New York at the exclusive Twenty-One Restaurant – a kind of "Welcome Back, Johnny" dinner. Felipe had attended the event and, throughout the evening, had taken note of the genu-

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[15] This case study is an extension of that in Chapter 7 and may be developed over a period of time overlapping study and discussion related to Chapters 7–11.

ine friendship that existed between Johnny and Tom. They each had their share of "war" stories to reminisce about – their adventures with lawyers, good loans, sour loans, strange or unusual projects, etc. The stories kept rolling out all evening long with Melinda and Felipe thoroughly engrossed in the anecdotes, particularly the obvious and gratuitous embellishment given to each story.

The following evening, Russ Atkins with his wife Jane invited Tom, Melinda, Johnny and Felipe to the very posh Metropolitan Club where the small party was treated to a fabulous rendition of the chef's very best, Peking Duck. There was a different dynamic that evening. The two women, Melinda and Jane, dominated the conversation with their charm and congeniality. Unlike the previous evening, the discussion ranged from foreign policy to the ancient Chinese art of Feng Shui, with the men pitching in actively. The evening, in short, had been a great deal of fun. There was no doubt that Stevens had also come away a big winner from the two-day event. He might have scored highest of all with Container Movers due to his selection of Johnny for the purpose of organizing the bankers in the initial two-day meeting.

Felipe, too, enjoyed himself thoroughly during both dinners despite the fact that he had much on his mind, not to mention a lot of work awaiting him upon his return to La Paz. Given the short time available to arrive at financial closing, the lenders were convening in New York in one week to discuss at a lenders-only meeting, loan structuring and profiling amendments needed in the model, as well as any other changes suggested by a closer examination of the Project's numbers. The schedule left Felipe with a short three, maybe four, days in La Paz to prepare for the next meeting.

Based on discussions during the first formal meeting involving all the parties, Russ revealed to the lenders that La Paz Container Terminal (LPCT) would be permitted by the port authority to generate US dollars from shippers for lift on/lift off, and other ancillary, services. All other revenues from importers and exporters would be in pesos.

Russ went on to describe the overall strategy of the LPCT, which was to own its own land, rather than have to wait for government to buy the land and lease it. "It would just take too long," Russ would say, shaking his head to any critical question posed by a member of the audience in respect of the plan. "We also have to have a particularly large yard," he said, "because the port labour code in Monte Rico requires us, with minor exceptions, to stuff and destuff all exported and imported shipments respectively, into and out of containers in the yard itself. This is one method the authorities use to create employment. Stuffing/destuffing and moving the contents onto lorries or railcars for transport to the capital are all ac-

tivities that are done in the yard itself. We need the large yard for this purpose and, at the same time, to facilitate the logistics of having all of the lorries inside our yard waiting patiently to pick up imported shipments or drop off exported shipments."

One of the bankers wanted to know if this meant that LPCT would not be able to incorporate the latest yard technology.

"Not at all," Russ drawled. "It simply means that we have to divide our yard in two parts. To comply with the port labour code, we need to dedicate three-quarters of the yard to the activity of stuffing and destuffing the containers. This first area has to have separate zones for importers and exporters. For importers, the zone has to accommodate a customs office, a parking area for the large numbers of lorries waiting for pickup, space for the scores of employees involved with destuffing of containers, as well as a separate designated pickup area where the lorries can retrieve their shipments. A second zone will be created for exporters, involving the converse of these activities. This includes areas for lorry queuing, container dropoff, space for container stuffing, and an additional area for infrastructure such as tractors or forklifts needed to move containers from this first part of the yard to the second where the containers are actually stacked. The stacking area itself, as implied earlier, is relatively small – maybe a quarter of the total yard area."

Here, Russ stopped to catch his breath before continuing, "I need not remind this group that we also need a maze of roads and rails that will enable the labour-intensive part of the yard to operate effectively as well as permit the unimpeded operation of the state-of-the-art stacking area." There were not many more questions after this explanation. By this time, everyone knew that the purchase of land and the size of the yard were areas for intense probing under technical due diligence.

One of the lenders asked, "How expensive is the additional labour?" Russ replied, "By world standards, not very expensive. By the way, I apologize for the erroneous salary figures in the financial model, which Felipe has been good enough to bring to my attention. The numbers should have indicated US$12,000 average wage for skilled local hires; US$4,000 average wage for unskilled local hires and US$150,000 average wage and benefits for expatriates. Increased use of labour, within the overall setup at the port, means that we need more land – entailing more expense in addition to more reliance on modern equipment for logistical support. Altogether, we will need about 600 employees for our proposed port: six in top management, 40 for administration, 30 for engineering and maintenance, and about 500 – not 250 as shown in the financial model – unskilled workers.

Russ's comments related to foreign and local currency generation were

the focus of discussion by lenders in their private meetings. Some were very vocal. It was clear that most of the group wanted to minimize the level of foreign currency funding. The lender from Sugarland Subordinated Lenders put it best when he said, "The amount lent by the foreign lenders should not exceed the ability of the LPCT to carry that debt – assuming reasonable forecasts of future foreign currency revenue." In response to the question of what kind of DSCR he was looking for, the lender mentioned **1.8–1.9.** "That may be tough," Johnny said, shaking his head.

Based on this strict principle, it was clear that the gentlemen from Sugarland favoured La Comercial taking, if need be, a significant amount of the debt needed to implement the project. Johnny, each time patiently reminded him, as well as others, that La Comercial's legal lending limit was only US$25 million. He mentioned also that La Comercial's ability to syndicate ten-year peso debt in the domestic market for Project Finance port container terminal was limited.

"Even if they were familiar with Project Finance, most, if not all, of the other national banks are unable to make long-term fixed-rate commitments because of the predominantly short-term nature of their deposit base." Johnny cleared his throat before continuing, "La Comercial's ability to handle long-term fixed-rate peso loans results from its recent placement in the long-term domestic credit markets of a seven-year, one-billion-peso issue, roughly equivalent to US$20 million (at the prevailing rate of exchange) with a coupon of **9%** per annum fixed." "In addition," he added, "the bank is one of the few institutions designated as an approved depositary of long-term time deposits from the civil service pension system." As if to underscore the remark, he said, "Gentlemen, this puts us in a highly differentiated position relative to other Monte Rico banks. I would not have been hired by the Board if there were not a desire to exploit the bank's unique commercial position by getting into Project Finance and through that activity, acquiring reasonably high-quality corporate paper at fixed rates of interest."

While Johnny's remarks earned murmurs of assent by some, others confessed to be uneasy about Monte Rico's country risk. All cited recent moves by the government toward liberalization and reform of the power and port sectors to be highly positive. It was certainly true rhat the country had acted very aggressively to restructure its power sector three years earlier. All told, Monte Rico had attracted US$5 billion in foreign direct investment (equity plus commercial debt) between privatization and subsequent modernization of several components of its power sector as well as the recruitment of new generation capacity. Because its debt service ratio (annual foreign debt service to exports) had increased from ***23%*** to ***32%*** in

a very short period, there was some unease among the foreign bankers with regard to the country's ability to meet its future obligations. For this reason, all the lenders viewed the involvement by La Comercial in the finance picture as "political" insurance of two types. First, the bank's presence in the deal was likely to dissuade any future government interference. After all, the bank was privately held – owned by five of the most influential Monte Riqueno families. Since independence, over the course of the country's 175-year history, each had been active at various times in domestic politics. Second, as a relatively large bank in the domestic market, La Comercial with all its inherent advantages could assume a substantial amount of fixed-rate local currency debt and, by so doing, reduce the Project's cross-currency risks.

Nonetheless, the issue of how much exposure La Comercial could take was left to Felipe and his model to determine. Johnny was to tweak the model to incorporate revenue forecasts in dollars and pesos, and generally to re-engineer the dollar debt to meet a reasonable DSCR along with indicative loan pricing provided by the lenders. The indicative terms of the loans as assumed by the sponsors originally are presented in Table C8.1.1; while those identified in the mandate letters are outlined in Table C8.1.2.

There were several other issues troubling Felipe. As a relative novice in financial modelling of Project Finance deals, he was unsure of the treatment of a number of issues related to the model, itself, e.g.:

- The currency to use in modelling. The sponsor(s) had used US dollars for the financial model but the project was located in Monte Rico, which uses the peso as its currency. Moreover, the project's operating expenses were likely to be largely in pesos, while debt service would be largely in dollars. What currency should be used to project and why? How would one go about revaluing assets held in the other currency?
- Whether to use nominal or real values. Assume historical long-term inflation in dollars of approximately 3% per annum and long-term inflation in pesos of around 8% per annum. In what ways would these economic variables be incorporated into the projections?
- How far to go in breaking up the revenue into its components. The sponsor(s) uses one line for each revenue projection, with some assumptions in the input sheets, and some manipulation in the calculation sheets that produce aggregate revenues. Is this sufficient? Why or why not? What should be done?

  Aspects of the model requiring restructuring. The model has some areas that need expansion. What are they and why?
- Whether to model resource supply contracts on a fixed-rate basis. The facility is a major user of electricity and fuel. How would one go about

Table C8.1.1 Loan Terms and Conditions Assumed in the Sponsor's Model

	Commercial Bank of New York	BankCorp of America	La Comercial	Sugarland Subordinated Lenders
Loan amount (US$ millions)	50	40	20	40
Type	Senior	Senior	Senior	Subordinated
Tenor (years)	10	10	10	15
Grace period (years)	3	3	3	3
Base interest rate (Based on prevailing LIBOR or equivalent)	6.00%	6.00%	9.00%*	6.00%
Swap rate (basis point)	250	250	0	300
Facility fees (basis point)	100	100	0	200
Commitment fees (basis point)	50	50	50	75
Monitoring fees (basis point)	0	0	0	0
Repayment profile	Level debt	Level debt	Annuity	Annuity

* La Comercial's pricing is not based on London Interbank Offer Rate (LIBOR) but rather on a domestic base rate.

determining the long-term fixed price for these two inputs in Monte Rico based on current developments in the country? How would one go about hedging the prices of the inputs?

- What scenario analysis to anticipate. The sponsor(s) appears not to have built in any ability to handle sensitivity analysis. If one were to expand the capacity of the model to handle sensitivity analysis, what scenarios specifically should the model handle?
- How strong the DSCRs truly are. Assuming container ports had DSCRs of between 1.5 and 1.9, what would be an acceptable debt cover ratio for this port, based on its circumstances? What arguments would Felipe and Johnny use to justify this with Sugarland Subordinated Lenders?
- How much subordinated debt the project really needs. What is the value of having Sugarland Subordinated Lenders in the picture willing to pro-

Table C8.1.2 **Loan Terms and Conditions in Mandate Letters**

	Commercial Bank of New York	BankCorp of America	La Comercial	Sugarland Subordinated Lenders
Loan amount (US$ millions)	Up to 50	Up to 40	20–25	Up to 40
Type	Senior	Senior	Senior	Subordinated
Tenor (years)	Up to 12	Up to 12	Up to 10	Up to 15
Grace period (years)	3	3	3	3
Base interest rate (Based on prevailing LIBOR or equivalent)	6.00%	6.00%	9.00%*	6.00%
Swap rate (basis point)	100	100	0	100
Facility fees (basis point)	100	100	0	200
Commitment fees (basis point)	50	50	50	75
Monitoring fees (basis point)	0	0	0	0
Repayment profile	Annuity	Annuity	Level debt	Level debt

* La Comercial's pricing is not based on London Interbank Offer Rate (LIBOR) but rather on a domestic base rate.

vide "up to U$40 million"? What scenarios may emerge in the financing plan that make Sugarland's presence a valued one? Be specific.

- What Container Movers' negotiating posture will be with regard to the equity support agreement. What should be the lenders' posture?
- At current prevailing market rates, what the estimated fixed rate equivalent of variable rate loan(s) would be in the financing plan.

chapter 9

OTHER FINANCE DOCUMENTS

INTRODUCTION

Apart from the loan agreements, most Project Finance deals contain three other key finance documents: the equity support agreement (ESA), the accounts agreement (AA), and the agency agreement(s). The main objectives of this chapter are to discuss the fundamental provisions of these agreements, especially those related to:

- Direct and indirect sponsor support to the project during construction, in the form of:
  - (a) Base equity and completion guarantee, or base equity and a commitment to provide contingent equity in lieu of a completion guarantee.
  - (b) Reallocation of completion risks by the sponsor(s) through the engineering, procurement and construction (EPC) contract entered into with the EPC contractor.
  - (c) Other commitments during construction and operation.
- Management of project accounts, including:
  - (a) Maintenance of waterfall and other accounts.
  - (b) Requirements for withdrawals from the waterfall accounts.
  - (c) Restrictions on distribution of free cash flow (FCF) in the form of dividends or its equivalent.
  - (d) Constraints on permitted investments.
  - (e) Lenders' rights to inspect project accounts and books.
- Role and functions of the inter-creditor agent (see Box 9.1), including coordination between the project vehicle and the lenders in respect of:
  - (a) Disbursement of loans.
  - (b) Managing cost overruns.
  - (c) Coordination and approval of annual operating budget.
  - (d) Sending of notices.
  - (e) Organizing lenders' decisions in respect of default.

Box 9.1 The Role of Inter-Creditor Agent

Each of the lender appoints the inter-creditor agent to act as its agent to perform duties and exercise the rights, powers and discretion(s) (as delegated), on its behalf, in connection with the finance documents, including the following:

- **Disbursement of loans.** As discussed in considerable detail in Chapter 8, the project vehicle has to make a formal request for loan draws, together with the evidence that all CPs have been complied with. Following such request, the inter-creditor agent examines the compliance of CPs for the requested disbursement and notifies lenders to decide, on the basis of the documents delivered, whether or not the CPs have been satisfied. If certain CPs are not complied with, the lenders may decide to drawstop or continue drawings through amendment or waiver of such CP.
- **Cost overruns.** If there are any cost overruns under the EPC contract affecting the completion of the project, the project vehicle, or upon its failure, the inter-creditor agent, serves on the sponsor(s) a contingent equity notice. Following such notice, the sponsor(s) shall ensure that the relevant affiliate responds to the identified contingent equity requirement.
- **Annual operating budget.** Lenders require the project vehicle to provide a draft annual operating budget for approval. The inter-creditor agent normally plays the role of coordinator between the project vehicle and the lenders for the approval of such annual operating budget.
- **Managing of default.** When the inter-creditor agent becomes aware of the likelihood, or occurrence, of a default, it notifies the lenders about such default and seeks instructions as to whether the default should be waived; if not, whether lenders' remedies under direct agreements and/or finance documents should be exercised.

- Role and functions of security trustee (see Box 9.2), including:
  (a) Execution, perfection and holding of all project securities on behalf of all lenders.
  (b) Enforcement of securities as instructed by the inter-creditor agent and/or the lenders.

EQUITY SUPPORT AGREEMENT

During the construction phase of a project, the two major concerns of the lenders are the following:

- Sponsor(s) may abandon the project before its completion. [1]

[1] **This may also include intentional desertion of the project before its completion pursuant to an adverse situation.**

Box 9.2 The Role of Security Trustee

As discussed in Chapter 10, there are several advantages of having a common security trustee for all lenders:

- All security documents and security interests can be held in the custody of a single trustee. As a result, conflict among the lenders for the possession of security documents can be avoided particularly since the same project assets are secured for all lenders.
- Creation, perfection or enforcement of security can be simplified because the common trustee is entitled to perform all these functions on behalf of all lenders.
- No new security is required to be created or transferred in case of change of lenders, if any.
- The security trustee can impartially apply all collateral proceeds in accordance with the ore-negotiated order of priority.

Upon appointment, the security trustee declares a trust of all of its rights under, or pursuant, to the security documents and all sums received by it hereunder, to be held in accordance with the terms of the security documents and the trust deed, in favour of each of the lenders. A security trustee, however, shall only have those duties, obligations and responsibilities expressly specified in a finance document or security document to which it is a party. In addition, the security trustee, if required, may employ and pay an agent to do any act in connection with the trust deed, for example, engagement of legal advisors. Provided it has exercised reasonable care in the selection of such agent or delegate, a security agent shall not be under any obligation to supervise the proceedings or acts of such agent or delegate. Under the security documents and trust deed, the security agent is usually conferred with rights, powers and discretion(s) to perform the following activities:

- **Execution, perfection and preservation of all security documents.** As discussed earlier, the security trustee is a named party in all security documents. It executes, perfects and holds all security documents in favour of the lenders. (See Chapter 12 for a discussion on security documents.)
- **Enforcement of security.** Under the security documents, all instructions for enforcement of security are to be given through the inter-creditor agent. Therefore, a security trustee can perform its duties or exercise the rights, powers and discretion(s) only as instructed by the inter-creditor agent. Otherwise, it has to refrain from acting, or exercising any right, power or discretion under any finance document unless and until the inter-creditor agent instructs so. Normally, an enforcement proceeding is undertaken if a default has occurred but is not waived or cured and is continuing and if the majority lenders vote for such enforcement.

- Project may not be completed at all, may not perform properly, or may be delayed in achieving its commercial operation date (COD).

Certain provisions are made in the finance documents to mitigate these risks (collectively referred to as completion risks). The lenders strategically will want to shift these risks away from the project vehicle and towards the project sponsor(s), or acceptable third parties, in the ways described below.

Abandonment Risk

Lenders mitigate the risk of abandonment of the project by requiring the sponsor(s) to agree to the following provisions under the ESA as preconditions for the loan:

- **Firm** base equity commitment [Section **A. 2(a),** page **528].** Lenders usually require the sponsor(s) to deliver a satisfactory level of base equity in the project. One purpose of such base equity commitment is to ensure that sponsor's financial resources are at risk if the project is not completed properly. Depending on the project's open risks, the total base equity required by the lenders might vary from 20% to 40% of the estimated project costs.
- Minimum **amount** of base equity before first draw [Section **A. 2(b),** page **528].** Normally, lenders require the sponsor(s) to provide a significant percentage **e.g.** 3040% of total base equity to be provided by the sponsor(s) as share capital of the project vehicle, or its equivalent, before the first draw of debt. Each draw of equity, thereafter, must be delivered a few days prior to the requested debt draws in amounts agreed upon in the loan agreements. The approaches used commonly for this purpose are illustrated in Figure 7.4, Chapter 7.

Completion Risk

Project's completion risks directly borne by the sponsor(s) largely depend on the nature and scope of the EPC contract. Usually, the sponsor's strategy is to transfer as much of the completion risks as possible to the EPC contractor. As discussed in more detail in Chapter *6,* under a typical EPC contract the contractor is required to absorb potential completion risks of a project by:

- Entering into a fixed-price contract.
- Undertaking single-point responsibility in respect of the whole construction works.
  Providing performance liquidated damages (PLDs) that compensate the project vehicle for reduced revenue, or increased operating costs, re-

sulting from a failure of the contractor to meet the performance criteria under the contract.

- Providing delay liquidated damages (DLDs) that compensate the project vehicle for increased financing and other costs pursuant to failure of the contractor to achieve the scheduled COD.
- Agreeing to receive payments under the EPC contract on the basis of achieving milestone progress set forth in that document.
- Furnishing a performance bond issued by a third-party guarantor especially in cases where the contractor is not considered financially solvent to discharge its obligations.

Lenders require the sponsor(s) to provide a completion guarantee in addition to the base equity commitment, if they are unhappy with the construction arrangements. A completion guarantee covers the risk that the facility will not be fully built according to specifications, on time and on schedule, and at its proposed costs. It terminates as soon as the independent engineer (IE) informs the lenders that the project has been completed satisfactorily along with confirmation that the takeover certificate has been issued, or may be issued. Through this guarantee, the sponsor(s) undertakes to furnish any additional funds (above and beyond the original debt and equity commitments) needed to complete the project. In the event of a cost overrun, it also commits to inject working capital, as needed, to maintain the debt service cover that was originally agreed in the lenders base case.

If the sponsor(s) chooses not to complete the project, it would be liable to repay all project debt. However, in England for example, enforcement of such a guarantee may be extremely difficult; under the system, the courts generally do not rule for payment of liquidated damages (LDs) if it is felt that the amounts involved constitute a penalty, rather than a reimbursement of actual damages. To overcome the uncertainty associated with a court ruling, lenders normally require the sponsor(s) to provide an irrevocable standby letter of credit (L/C) from a reputable financial institution to back up the completion guarantee. Upon any breach of this guarantee, lenders may claim under the standby UC.

Other project circumstances that may influence lenders' requirement for a completion guarantee include one or more of the following:

- Project documentation does not include a take-or-pay agreement.
- Construction schedule of the project is uncertain, or poses serious technological challenges.
- The technology is new and the manufacturer will not provide a performance guarantee.

- The EPC contractor is marginally solvent, overextended or exposed to material contingent risks.
- The project site is exposed to serious environmental, or archaeological liabilities, which the EPC contractor or the host government will not assume.
- A high percentage of the projects in the host country have experienced material delays in their completion.

However, if the EPC contract is deemed adequate, and none of the above risk factors is present, lenders may require the sponsor(s) to assume a finite amount of cost overrun or delay risk through a commitment to provide contingent equity in lieu of completion guarantee. Normally, the amount of contingent equity to be provided is the subject of arduous negotiation between the lenders and the sponsor(s). Since contingent equity is a long-term standby commitment, lenders require sponsor(s) to backstop such commitment with irrevocable standby L/Cs from a reputable financial institution if their credit rating is not top tier.

The ESA usually provides that sponsor's contingent equity will be used to fund the project costs only. If, at any time prior to project completion, the amount of available funding is insufficient to meet the project costs that have become due and payable within a specified number of days, the inter-creditor agent may require the sponsor(s) to disburse contingent equity to meet the shortfall in project costs.

If contingent equity is contributed to fund a project cost, and at that time, either (a)the project vehicle is entitled to make, or has made, a claim for general or liquidated damages against the EPC contractor, or any other counter-party, to a project agreement; or (b)the project vehicle is entitled to make, or has made, an insurance claim, which in each case has not been paid and would if paid, have funded the project cost, that contingent equity is considered as a bridging **loan** to be repaid from the recoveries in respect of such claim.

As is true for the completion guarantee, the contingent equity commitment is released in full on the date of project completion or, if earlier, its contribution in full.

Other Sponsor(s) Support

Depending on the risks involved with the completion and operation of a particular facility, including revenue, price and demand risks, lenders may require the sponsor(s) to provide any or combination of supports described below:

- Sponsor(s) support common to all projects. Usual additional sponsor(s) support in a Project Finance include:
  (a) Maintenance of ownership [Section **A. 6,** page **529].** Lenders require the lead sponsor to maintain directly, or indirectly, an agreed percentage of the ordinary shares of the project vehicle during the loan life. Maintenance of full, or majority, ownership of the project vehicle keeps the sponsor(s) at risk and motivates them to make sound business decisions.
  (b) Acceleration of base [Section A. 4, page **529**] and contingent equity (Section **A. 3,** page **528).** Lenders require the base and contingent equity to be accelerated in the following situations:
    - If a default has occurred and is continuing hut the loans have not been accelerated. In this situation, the inter-creditor agent may require any remaining base equity commitment to be contributed in advance of the loans, as and when required to fund project costs. In this case, if the relevant default is subsequently cured, the sponsor(s) may not be obligated to provide any further base equity until the amount of base equity that has been drawn is equal to the amount that would have been contributed had there been no acceleration.
    - If a default has occurred and is continuing and the loans have been accelerated. In this situation, the sponsor(s) will pay on demand any remaining base equity commitment for application to outstanding indebtedness under the individual loan facility agreements (ILFAs). The base equity commitment of the sponsor(s) is released upon its payment in full.
      Similarly, and depending on negotiations by the parties, contingent equity may also be accelerated in part, or in full, to prepay debt.
  (c) Cash traps. Lenders will require the project vehicle to agree to certain cash traps. The usual cash traps include the following:
    - Debt service reserve account (DSRA)[Section C. **5,** page **534].** The **AA** will provide for an initial required balance for DSRA to be funded on, or before, the first payment date out of committed debt and equity. The DSRA is meant to be available to meet a debt service payment if other funds are not available.
      Major maintenance reserve account (MMRA)[Section C. 7, page **535].** The project vehicle will maintain an MMRA into which funds will be transferred periodically subject to the order of priority and availability of funds. These reserved monies are meant to be used for major project maintenance re-

quired once in several years. However, if lenders decide to exercise remedies under finance and security documents pursuant to a default, they can take control of this reserve and apply it to their loans.

- Sponsor(s) support common to infrastructure projects. Support required in infrastructure projects where the government, or its agency, is the off-taker usually include the restoration of the facility [Section A. 5, page 529]. In infrastructure projects, sponsor(s) is required by the lenders to commit to undertake restoration of the facility pursuant to occurrence of certain defined political force majeure events. For instance, a project may be materially damaged as a result of war, revolution or civil strife. Sponsor(s) will usually attempt to allocate such risks to the host government through relevant stipulations under the implementation agreement (IA). However, the host government may take the position that it will provide restoration costs only if the damage exceeds a pre-negotiated threshold in which case the sponsor(s) would have to provide over loan life restoration support for amounts below the threshold.
- Sponsor(s) support to projects that do not have off-take agreements. Lenders will frequently require sponsor(s) of projects that do not have off-take agreements to provide a more stringent completion guarantee, relative to what has been described earlier. The guarantee may consist of two elements – physical and *financial*. Tests related to physical completion will involve a judgement by the IE that the project has been completed satisfactorily along with confirmation that the takeover certificate has been issued, or may be issued. This test is exactly the same for projects with or *without* off-take agreements. However, an additional test related to financial completion may be applied to projects without off-take agreements. This test usually requires the project to arrive at its financial breakeven before the project is regarded as "complete" in both its technical and financial aspects. In effect, such a completion guarantee with its added tests will be in effect for all of the construction period and some of the operating period. Up to the time the project is able to meet both tests, the sponsor(s) will be guaranteeing the project debt.
- Sponsor(s) support common to captive projects. In projects where the sponsor(s) performs services for the project vehicle, or the project vehicle performs services for the sponsor(s), certain additional support may be required from them, for example:
  (a) Capital injection agreement. In projects that do not have a completion guarantee, or provisions for contingent equity under the

ESA, lenders may require the sponsor(s) to undertake to deliver working capital in the form of subordinated debt to cover any cost overruns. Normally, the sponsor(s) cannot claim repayment of this subordinated debt as long as senior loans are outstanding.

(b) Deferrals or subordination of payments to the sponsor(s). A sponsor may be the supplier of natural gas to a gas-fired electric plant or a urea fertilizer factory. In this case, payment for the gas supplied may be contractually subordinated to debt service. Similarly, in cases where the sponsor(s) provides certain services to the project, e.g. distributes product in return for a stipulated fee under the terms of an off-take agreement, such fee payable by the project vehicle may also be subordinated to the debt service. Deferral, or subordination, of payments due to the sponsor(s) necessarily strengthens the financial robustness of the project, and hence, improves lenders' security.

(c) Minimum throughput and cash deficiency agreement. As discussed in Chapter 5, under a throughput agreement an oil company may transport oil, or natural gas, via pipeline owned by a project vehicle at charges that are stipulated under a throughput agreement. In such a case, the project vehicle (or lenders) may require the company to agree to a cash deficiency agreement (in lieu of a "hell-or-high-water" minimum throughput stipulation) obligating the company to advance funds to cover any deficiency in the generation of revenues to meet the project costs including debt service:

Cost-of-service contract. Under a cost-of-service contract each shareholder of the project vehicle is required to deliver a proportionate share of monthly project costs in return of its share in the project's output, e.g. for share of minerals in a mineral extraction project. This provision obligates the shareholder to pay its proportionate share of operating costs whether or not any product or service is received.

Tolling agreement. Under a tolling agreement the sponsor(s) delivers raw inputs, e.g. crude oil in an oil refinery, under a resource supply contract for processing by the project vehicle. For such an arrangement the sponsor(s) may be obligated to proportionately pay the tolling charges or processing costs. Such an arrangement resembles a cost-of-service contract, and therefore leads to a highly predictable cash flow of the project. Both cost-of-service contract and tolling agreements may be augmented through hell-or-high-water or step-up provisions.

Tracking mechanism. Additional sponsor(s) support may be required in certain projects that process and sell commodities at spot prices (i.e., with price risks). In such a case, the project vehicle contractually causes the off-taker (usually, the sponsor) to pay a floor price for the product or service when the prices fall below the floor. This arrangement insulates the project vehicle from falling prices. However, margins paid over the market price are recorded as credits which are adjusted when the prices rise over the floor.

- Sponsor(s) support common to projects with no off-take agreement and significant cross-currency risks. In projects with significant cross-currency risks, lenders may require the following additional support from the sponsor(s):
  (a) Devaluation risk cover. Toll roads in developing countries may not do well in the event of runaway inflation and devaluation of the currency even with unit tariff indexation. In such projects, lenders require the project vehicle to create a currency reserve account that is sized by taking into account the historical volatility and depreciation of the currency. Necessary amounts from this account then can be drawn upon to cover operating and other expenses every time there is a significant devaluation.
  (b) Sweep provisions. Lenders may require that their loans be subject to two repayment options, e.g. a "base term" for a prudent repayment schedule under a reasonable cash flow forecast, and an "optimal" plan, requiring swift repayment within a shorter period than the base case. The latter is called a cash sweep, as described in Chapter 6. Under this arrangement, repayment is accelerated if the project cash flow is higher than a pre-negotiated amount. Instead of allowing the excess to be paid in dividends to the equity providers, lenders sweep the excess for prepayment, or share it with the sponsor(s) in a percentage. The lenders' share is then applied to schedule payments under the loan in inverse order of maturity thereby effectively reducing the loan tenor.
  (c) Clawback guarantee. A clawback guarantee refers to undertakings by the project's sponsor(s) or other passive equity investors that they will return to the project vehicle any dividends paid to them if there is a shortage of funds to meet project costs. Usually, this guarantee is limited in amount only to the dividends received by these parties but such commitment remains binding on them for the loan life.

ACCOUNTS AGREEMENT

Predictable cash flow provides the most important source of repayment for the lenders. They will create suitable devices to exercise control over the cash available for debt service (CADS) and FCF of the project. One such device used by the lenders for total cash control is the trustee borrowing structure, illustrated in Figure 2.4 of Chapter *2.* In this mechanism, the trustee may be a senior lender, or often a third-party bank, assigned under a trust deed to handle all cash flow. The trustee is vested with rights to write checks and pay bills, or approve project vehicle payments. This is not the only approach used, however. Lenders, in other cases, may grant project vehicle's management the right to write checks and pay bills, a right that terminates if there is a default by the latter under the finance documents.

Lenders require the project vehicle to enter into an AA as a precondition to first disbursement which sets forth the account structure of the project together with the order of priority to be complied with. Project accounts usually include the proceeds accounts, operating accounts, MMRA, debt service payment account (DSPA),DSRA, petty cash account, disputed payment account, compensation account and recoveries account, as shown in Figure 9.1.

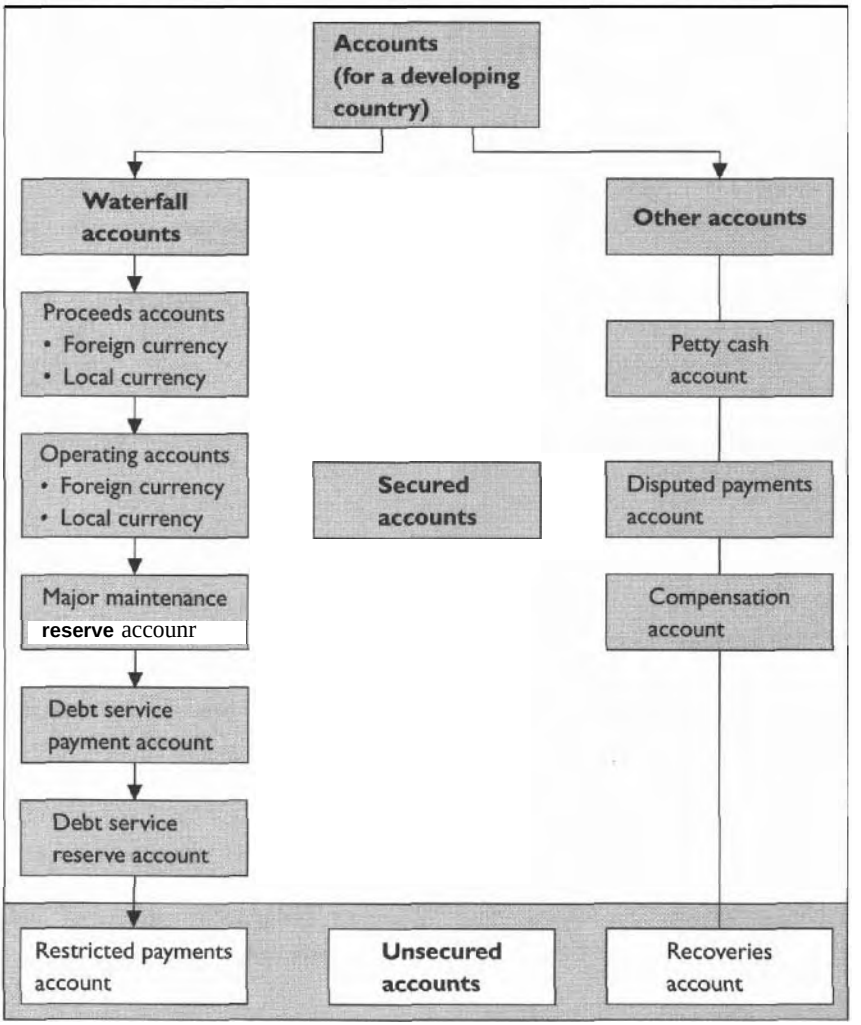
With regard to these accounts, lenders will require the project vehicle to agree to other terms and conditions under the common terms agreement (CTA) and finance documents in respect of the cash flow management, including the following:

- Compliance with the order of priority (Section **C.** 8, page 535). The project vehicle will apply available cash flow in accordance with the order of priority agreed under the AA. As the term implies, the order of priority ensures that debt service obligations receive priority over other payments, or distributions, except for operating costs and, sometimes, certain other costs as agreed by the lenders. A typical example of order of priority is illustrated below:[2]
  - First, transfers to the operating account.
  - Second, transfers to the MMRA.
  - Third, payments to the senior DSPA.
  - Fourth, payments to the senior DSRA.
  - Fifth, payments to the subordinated DSPA, if any.
  - Sixth, payments to the subordinated DSRA, if any.

    Seventh, transfers for voluntary prepayments under loan agreements.

'However, depending on the type, nature and scope of a particular project, the order of priority may vary.

Figure 9.1 Secured and Unsecured Accounts of a Typical Project Finance



Eighth, payments for permitted other capital expenditure.

➢ **Ninth,** payments to the restricted payments account.

- Furnishing of draft annual operating budget [Section ***G.*** **1(l)(ii),** page 548]. The project vehicle will furnish a draft annual operating budget to the inter-creditor agent, between 120 and 90 days before the start of each operating year with effect from the COD, showing the likely expenditure to be incurred in each month during that year. If the inter-creditor agent, acting on the instructions of the lenders and the technical advisor, does not reject the draft budget within one month of its

receipt, that draft budget becomes the operating budget for that year or part thereof. However, if the budget is rejected and the inter-creditor agent (acting on the instructions of the lenders) and the project vehicle fail to resolve the dispute, the previous year's operating budget is complied with until agreement is reached on the current budget.

- Reconciliation [Section C. **11,** page **536].** The project vehicle will furnish to the inter-creditor agent (with effect from the COD), a reconciliation of all operating costs incurred in the previous semi-annual period with those permitted under the approved budget.
- Security [Section B. **1(iii),** page **532].** The project vehicle will create in favour of the lenders a first priority lien over all project accounts (except the restricted payments and subject to the consent of the inter-creditor agent, certain amount in the recoveries account).
- Investment [Section ***G.*** **1(r),** page **549].** The project vehicle will not acquire any share or loan capital of any corporate body, or make other investments using cash balances in the secured accounts, except permitted investments under the AA. Moreover, the project vehicle must comply with certain conditions and procedure before making any permitted investments.
- Distribution [Section ***G.*** **1(s),** page **549].** The project vehicle will not transfer any amount from the secured accounts to the restricted payments account without the written consent of the inter-creditor agent.
- Lenders' audit rights [Section ***G.*** **1(b)(i),** page **546].** The project vehicle irrevocably grants to the inter-creditor agent and its advisors access to review the books and records of the secured accounts. Each account bank will provide a monthly statement to the inter-creditor agent and the project vehicle of all payments into, or from, the secured accounts held with it. The inter-creditor agent may arrange for review of such statements against the management accounts of the project vehicle.

Waterfall Accounts

Waterfall accounts of a project located in a developing country usually include the following.

Proceeds Accounts

As shown in Figure 9.1, a project usually includes two proceeds accounts:

- An offshore foreign currency account where all loan proceeds, sponsor's base and contingent equity, as well as bridging loans, and all project revenues received in foreign exchange are deposited.

- **An** onshore local currency account, where if appropriate, all local currency loan proceeds, sponsor's base and contingent equity, bridging loans and all project revenues are deposited.

Following the achievement of all conditions precedent (CPs) under the CTA and ILFAs, lenders deposit the requested loan draws into the offshore proceeds account. Foreign sponsor(s) disbursement of base equity and contingent equity under the ESA, and bridging loans, if any, are also deposited in the offshore proceeds account. Once COD is achieved and the project begins to generate revenue, the project vehicle deposits, or procure to have deposited, all local currency revenues initially into the onshore proceeds account while foreign currency revenue is deposited in the offshore proceeds account. Revenues in the onshore account are converted periodically into foreign currency and transferred into the offshore proceeds account.

The project vehicle is required to covenant that no withdrawals from any proceeds account shall be made except as expressly permitted under the AA. Deposited amounts may be withdrawn for the following purposes:

- Pay a cost, expense or liability that is approved under the operating budget and is due and payable.
- Transfer funds to other secured accounts in accordance with agreed terms.
- Settle the purchase price of permitted investments.

No withdrawal, however, may be made from the proceeds account under any of the following circumstances:

- While the account is, or becomes, overdrawn.
- If the inter-creditor agent and/or the lenders issue a **stop notice** that the withdrawal should not be made.
- If such withdrawal is inconsistent with the order of priority.

All requests and instructions for withdrawals from a proceeds account are made in writing at least three business days before the date of the proposed withdrawals. **A** copy of such instructions is delivered to the inter-creditor agent with full details regarding the purpose of the requested withdrawal. In each case, the project vehicle represents and warrants that such withdrawal is in accordance with the approved budget and the terms of the AA.

The project vehicle cannot make, and the account bank may not comply with, any instructions to make certain payments, transfers or withdrawals unless the inter-creditor agent, the senior agent or the subordinated lender, as the case may be, countersigns such instructions. For example, apart from transfers into the restricted payments account, the project

vehicle is required to procure instructions from the inter-creditor agent for making withdrawals from the (a)DSRA; (b)MMRA; and (c)subordinated DSPA, if any.

Operating Accounts

Under the AA, the project vehicle covenants that it will open and maintain two operating accounts, one in foreign currency and another in local currency in order to manage its operating expenses. The reason for maintaining two operating accounts is that certain operating costs are payable in foreign currency, whereas others, in local currency.

Lenders require that the proposed monthly operating costs (in accordance with the project's semi-annual operating budget) be paid upfront of all other payments so that project's operation continues uninterrupted. Subject to the provisions under the **AA,** upon instructions by the project vehicle, amounts needed to meet all monthly operating expenses are transferred from the proceeds accounts to the foreign and local currency operating accounts, in line with the approved operating budget discussed earlier. Subject to available funds, transfers from the proceeds accounts to other accounts are made in accordance with the order of priority.

Major Maintenance Reserve Account

Lenders require the project vehicle to open and maintain an MMRA in which a certain amount is transferred monthly (subject to available funds) from the proceeds account to meet pre-negotiated, semi-annual target balances.

Two common methods used for the MMRA target balance (based on major maintenance every four years, i.e. eight semi-annual periods) are illustrated below.

- Required MMRA target balance is divided by 8. Target balance for first semi-annual period of operations is then $^{1}/_{8}$ of required MMRA; the second is $^{2}/_{8}$; and the third is $^{3}/_{8}$, etc.
- The sum of the semi-annual digits (i.e., $1 + 2 + 3 \ldots + 8 = 36$) is used to calculate the MMRA target balance at the end of each of 8 semi-annual periods, such that target balance for the first semi-annual period of operations is $^{1}/_{36}$ of required MMRA; the second is $^{2}/_{36}$ or $^{1}/_{18}$; the third is $^{3}/_{36}$ or $^{1}/_{12}$; the fourth is $^{4}/_{36}$ or $^{1}/_{9}$; the fifth is $^{5}/_{36}$; the sixth is $^{6}/_{36}$ or $^{1}/_{6}$; the seventh is $^{7}/_{36}$; and eighth is $^{8}/_{36}$ or $^{2}/_{9}$. (See Appendix 7.2 for a similar methodology used for depreciation.)

However, if any time the project vehicle believes that a target balance is too high, it may notify the inter-creditor agent accordingly, proposing an alternative. If the inter-creditor agent and the project vehicle fail to resolve the matter, then it is referred to an independent expert for a binding opinion. If the inter-creditor agent, or on its failure, the independent expert. determines that the target balance is too high, then the project vehicle may instruct the offshore account bank to withdraw the excess amount and transfer it to the offshore proceeds account.

The project vehicle, at any time, may instruct the account bank to withdraw amounts from the MMRA for the major maintenance costs for which provisions were made in the latest operating budget. It may also withdraw money from this account for operating costs to the extent funds are not available in the operating account, if provisions for such costs were made in the latest operating budget. However, the project vehicle has to undertake in the **AA** that if it withdraws money from the MMRA to fund any operating costs, it shall, within a negotiated period from the date of such withdrawal, repay an amount equal to the amount withdrawn. In some projects, lenders will require the project vehicle to backstop this commitment with a standby L/C.

Debt Service Payment Account (DSPA)

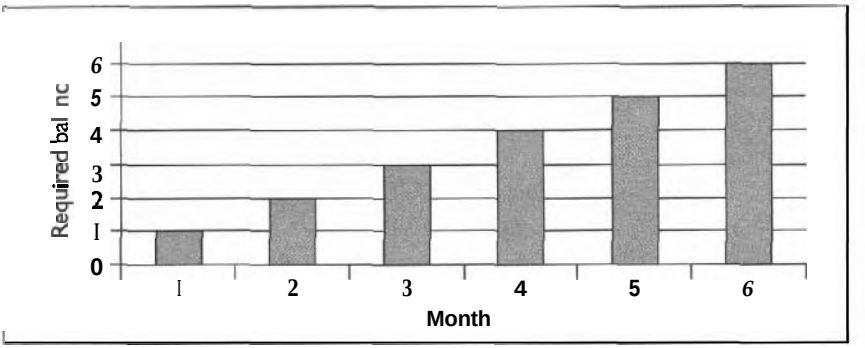
Interests on loan drawdowns are capitalized during the construction period of the project. After **COD,** loans become payable on a quarterly or semi-annual basis, beginning at some agreed interval. If loan amortization is to be effected on a semi-annual basis, each month the project vehicle must transfer from proceeds account to the **DSPA** one-sixth of the debt service due on the following payment date to ensure that the balance on this account at the subsequent repayment date is exactly equal to the amount that is actually due under the loan repayment schedule. Figure 9.2 illustrates the typical **DSPA** target requirement under a semi-annual repayment schedule with a due amount of $6 million at the end of the semi-annual period.

Debt Service Reserve Account

DSRA is initially funded out of debt and equity as a project cost. Hence, debt and equity, if available, will be drawn pari passu to fill the reserve. The **AA** will provide for an initial required balance for **DSRA** to be funded on, or before, the first payment date. Normally, it is not possible to project accurately such initial required balance until the project arrives at its **COD** and the interest roll-up is known. At **COD,** the inter-creditor agent calcu-

lates the amount of principal that will be due on the first repayment date. Obviously, the identification of this amount, along with the interest that will be due, is important. It is equal to the DSRA requirement. When this number is divided by *6*, it identifies the monthly amount to be transferred to the DSPA, as shown in Figure 9.2.

Figure 9.2 Debt Service Payment Account Required Balance for the Semi-Annual Period



Restricted Payments Account

Restricted payments account is at the bottom of the cash waterfall. Project revenue flows into this account only after satisfying all other requirements under the order of priority. At that time, the project vehicle may instruct the offshore account bank to transfer any funds available to the restricted payments account. It cannot do so unless the inter-creditor agent agrees in writing after independently confirming that the project vehicle has met all financial tests that are set forth in the CTA and is therefore entitled to make such distribution.

However, notwithstanding these provisions, the project vehicle can transfer to the restricted payments account the amount, if any, of any reimbursement of bridging loan.

Other Accounts

Other accounts, in addition to the cash flow waterfall accounts of a project, usually include the following:

Petty Cash Account

A petty cash account is designed to meet small payments that are necessary for the day-to-day business of the project vehicle. This account is not a part

of the order of priority. Consequently, the project vehicle may instruct the onshore account bank to transfer a certain amount of money (pre-negotiated) to this account in every calendar year notwithstanding provisions related to the order of priority. Consequently, the project vehicle can instruct the onshore account bank to withdraw amounts standing to the credit of the petty cash account for the payment of day-to-day operating costs.

Disputed Payments Account

Disputed amounts are transferred to the disputed payments account of a project so that they can be used if the relevant dispute is adversely determined. The project vehicle may from time to time contest in good faith a claim or an obligation but will be required to maintain adequate reserve calculated by the inter-creditor agent to offset the payment if the dispute is adversely determined.

Compensation Account

The following proceeds are usually transferred to the compensation accounts:

- Compensation related to PLDs and DLDs by the EPC contractor.
- Compensation related to termination of the project.
- Compensation related to restoration, if any, under the IA.
- Compensation related to expropriation.
- Compensation related to insurance(s).
- Compensation related to any third-party liability.

Normally, the AA provides for separate sub-accounts for each component, and if compensation becomes payable such amounts are deposited to the appropriate sub-account. Any amount standing to the credit of compensation sub-account can be used and applied in the order of priority specified in the **AA.**

Recoveries Account

A recoveries account houses all "recovered" sponsor(s) bridging loans representing LDs or insurance claims. Normally, the AA requires the project vehicle to inform the inter-creditor agent if it is going to receive an amount that it considers a recovery. In this case, it provides all necessary evidence, as reasonably required by the inter-creditor agent, in support of such fact. If the inter-creditor agent thinks it to be a recovery it will agree that such amount be transferred to the recoveries account.

Recoveries are not subject to the order of priority; hence the project vehicle may instruct the account bank to withdraw any amount in the recoveries account for transfer to the restricted payments account.

Permitted Investments

The project vehicle covenants under the CTA that it will not make investment except for the permitted investments. The permitted investments can be made only if such investments are subject to security interest, in form and substance satisfactory to the inter-creditor agent. Under the AA, the project vehicle has to comply with the following procedure for making any permitted investments, including:

- Project vehicle's notice. The project vehicle may, from time to time, by notice in writing (countersigned by the inter-creditor agent) to each of the account bank, security trustee and the inter-creditor agent, require the account bank to:
  (a) Apply an amount from the secured account in the purchase of, or subscription for, a permitted investment as may be specified in the notice.
  (b) Dispose of, realize or otherwise deal with a permitted investment as specified in the notice.
- **Matching maturity.** The project vehicle has to substantially match the maturity of any permitted investments made out of surplus funds standing to the credit of the secured accounts to the dates when operating expenses must be met or payments will be due under the finance documents. Such investments are required to be readily marketable so that they can be liquidated as needed.
- Possession of documents of title by the account bank. All documents of title or other documentary evidence of ownership with respect to permitted investments made out of any secured account are held in the possession of the account bank.

If any permitted investment ceases to be a permitted investment, the project vehicle will notify the inter-creditor agent as soon as reasonably practicable and procure that the relevant investment is replaced by a permitted investment or by cash. However, the project vehicle usually is not obligated to liquidate any investment earlier than its normal maturity date unless the inter-creditor agent reasonably requests it, giving its reasons for so doing.

Lenders' Audit Rights

Under the AA, the project vehicle grants irrevocable audit rights to the inter-creditor agent and its advisors to review the books and records of the secured accounts. It authorizes each account bank to give the inter-creditor agent unrestricted access, during normal business hours on two business days' notice, to review such books and records held by that account bank. The inter-creditor agent may disclose to any lender any information, which it has acquired as a result of such review. In addition, each account bank has to provide a monthly statement to the inter-creditor agent and the project vehicle of all payments into or from the secured accounts held with it. The inter-creditor agent may arrange for a review of such statements to be carried out against the management accounts of the project vehicle. The rights of the inter-creditor agent and the obligations of the project vehicle related to permitted investments continue until the release date.

Review Questions

1. What are the project completion risks? How do lenders mitigate these risks?
2. Why and when do lenders require the sponsor(s) to provide additional support? Give some examples of additional sponsor(s) support common to all projects.
3. What is an "order of priority" under the AA? Why is it so important from the lenders' perspective?
4. Discuss the purpose of the DSRA. How is this account funded and for what reasons?
5. Discuss the purpose of the MMRA. How is the MMRA required balance calculated and funded?
6. What is an inter-creditor agent? What roles may the inter-creditor agent play in a Project Finance?
7. Discuss the role of a security trustee. What are the advantages of having a common security trustee?
8. What conditions will the project vehicle comply with before making any permitted investments and why?
9. Why do lenders require the project vehicle to grant them unrestricted access to review the books and records of the secured accounts?

chapter

10 LAYERED FINANCE[1]

INTRODUCTION

The general objectives of subordination of debt in Project Finance transactions are to mitigate risk for senior lenders and mobilize a higher aggregate level of project debt than is otherwise justified by the project's underlying cash flows. Subordination accomplishes both purposes by establishing two classes of debt in the financing plan and two classes of lenders – a senior lender and a subordinated lender – each with a different risk-reward trade-off. The senior lender agrees to lend to the project because the subordination provides it with priority rights (a) to payment of debt service from the project's available cash flow during operations; and (b) over project security, i.e. rights to recover the proceeds of security upon the occurrence of a default under the financing documents, as well as rights to control the enforcement of remedies. In return for ceding these rights to the senior lender and assuming greater repayment risk, the subordinated lender benefits from the higher yield that it is able to command from the project on its loan. Some subordinated lenders may price their loans to achieve a development objective rather than to ensure a higher yield. The layering of the rights of various classes of lenders, along with those of the sponsor(s), is one reason why the use of subordinated debt in a project is referred to as layered finance.

A subordination of debt serves a variety of objectives. These are outlined in Table 10.1 together with a summary of geographic areas where the practice is common, the type of instrument, issuer involved and its motivation.

[1] **Large sections of this chapter first appeared in Parra,** Robert J. **and Khan, M.** Fouzul **Kabir, "Layered Finance", Journal of** *Structured* **and** *Project* **Finance, Fall 2001. Reprinted with permission** from **Journal** *of* **Structured and** *Project* **Finance.**

Table 10.1 Global Practice of Subordination

Purposes served by subordination	Geographic concentration	Instrument and issuer	Purchased by	Investor motivation
1. Replacement by project sponsor or other "insider" of equity with debt	Global	Subordinated by greenfield project	• Sponsors • Service providers	Avoid erosion of equity • Tax benefit associated with expensing of interest
2. Provision of convertible debt, or other hybrid debt, by other "investor"	Global	Subordinated by greenfield project with warrants or conversion right	• Collective investment vehicles • Pension funds • Insurance companies	Enjoy benefit of upside if project is successful
3. Infusion of subordinated debt by third-party "catalyst" to promote participation of senior lenders in a project by improving the margin of debt service cover	Developing countries with difficulty attracting external commercial capital and/or weak banking systems	Subordinated debt by greenfield project	Government investment vehicle	Facilitate completion of Project Financing plans
4. Meeting commercial bank capital adequacy guidelines	Industrialized countries	Subordinated bonds by banks	• Individuals • Institutions	High yield
5. Financing purchase price of an acquired company	Global	Subordinated debt by acquisition vehicle or entity being acquired	• Sponsor(s) • Commercial banks • Institutions	• Mobilize debt • High yields

This chapter will focus primarily on subordinated lending in Project Finance transactions. We address in detail the first three purposes of subordination shown in Table 10.1:

- Replacement of equity by the sponsor(s) with subordinated debt.
- Provision of convertible debt, or other hybrid debt, by an investor.
- Infusion of straight subordinated debt by a third party to promote participation by senior lenders in a project by improving its senior debt service covet.

The fourth and fifth purposes of subordination shown on the table are outside our general scope; however, for completeness, we note the following details. With respect to the fourth purpose, commercial banks within industrialized countries are permitted generally to issue subordinated bonds to augment their capital base.[2] These instruments typically are issued through an underwriting provided by an investment bank followed by a distribution in the open market. The fifth purpose shown on the table relates to acquisition financing for the leveraged purchase of a company (sometimes referred to as a leveraged buyout (LBO), and involves bridge (short-term) financing for a one- to two-year period, pending the arrangement of permanent (longer term) financing.

Subordination may be contractual or structural. Contractual subordination is effected by an express agreement between a senior and a subordinated lender where both lenders are lending to the same entity. As discussed further below, negotiation related to the rights and obligations of the parties is set forth in a formal agreement. Structural subordination comes about in a different way. Frequently, in Acquisition Finance, a bank or other institution lends to a holding company that uses the loan proceeds to infuse capital, in the form of equity or deeply subordinated shareholder loans, into one or more newly purchased operating companies. The holding company lender is structurally subordinated in right of payment relative to third-party lenders that may be extending credit directly to the operating subsidiaries because (a) the holding company lender only has a right to receive payment from the holding company; (b) the holding company's only source of funds typically are dividend payments from the operating subsidiaries; and (c) those dividend payments are contractually subordinated in right of payment to debt service owed by the operating subsidiaries to their direct lenders.

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[2] See Basle Committee Report, Banking *Regulations* and Supervisory, July 1988. Details related to tests that junior bonds have to meet to qualify for "permanent" capital for purposes of determining capital adequacy are left to the individual country regulators to define.

The holding company lender also is structurally subordinated in respect of security because it typically receives pledges of the operating subsidiaries' shares while the direct lenders to the operating subsidiaries receive pledges of the operating subsidiaries' assets. Accordingly, upon the occurrence of a default and acceleration of debt, at both the holding company and operating subsidiary levels, lenders to the operating subsidiaries have recourse to the subsidiaries' assets, which can be sold to repay operating subsidiary loans. A holding company lender may enforce its pledge of the operating subsidiaries' shares; however, the value of those shares is dependent on the net underlying assets of the operating subsidiaries. These will be reduced substantially, for example, if assets of the operating subsidiaries are liquidated and the proceeds therefrom are used to repay the operating subsidiaries' direct lenders. Moreover, in the absence of other contractual security arrangements, the holding company lender also will be structurally subordinated to other secured and unsecured creditors of the operating subsidiaries[3]

We note the existence of two additional categories of subordination: preferred stock and compulsory subordination. Preferred stock is not widely used in Project Finance, except where it serves some useful purpose that cannot be achieved by other means. It has the disadvantage of not being widely recognized by the legal and commercial practices of many countries. Compulsory subordination occurs in a number of jurisdictions and situations, where creditors, including lenders otherwise treated as senior lenders, may be forced into a mandatory subordinated position in connection with a borrower's insolvency or bankruptcy proceeding. The subordination, depending on the jurisdiction, may be in relation to (a) amounts due to the tax authority; (b) unpaid compensation due to workers or employees; (c) deposits made by savers or current account holders, if the borrower is a bank; (d) policies held by insured parties, if the borrower is an insurance company; and *(e)* other claims given preference by applicable laws.

[3] Permanent financing may also have large amounts of subordinated debt. Typically, 15–30% of corporate acquisition financing in the US (as well as other industrialized countries and investment-grade-rated countries) is in the form of subordinated debt. Subordinated debt financing is generally made available directly from insurance companies, subordinated debt funds or finance companies. Alternatively, it is raised with public offerings of high yield (junk bonds) to insurance companies, pension funds and other institutional investors. In many leveraged acquisitions, and particularly in the US, the subordinated debt instruments are delivered to the seller as a portion of the purchase price for the acquired company. The term of "permanent" subordinated debt generally is 6–10 years and principal payments are commonly deferred until after the senior debt is retired.

Neither preferred stock nor compulsory subordination will be covered in detail here, as they are generally outside our specific scope of interest.

THE PARTIES

The focus in this section is on the use of subordinated debt in Project Finance and, more specifically, in the limited or non-recourse financing of greenfield projects where a variety of subordinated lenders with different perspectives and objectives may be involved, including:

- First, a project insider may become a subordinated lender in order to substitute debt for required equity. Usually, this party is a sponsor, stockholder or affiliate of a project vehicle. It could also be any one of its service providers, such as an engineering, procurement and construction (EPC)contractor, equipment manufacturer, input supplier or any other party whose primary motivation is to ensure the sale of its product or service to the project vehicle.

  One or more of the above parties may have agreed with the senior lender to infuse a certain level of base and contingent capital in the form of shareholder loans. One strong motivation in structuring a portion, or all, of their participation in the form of shareholder debt rather than equity is to avoid write-downs in equity caused by a devaluation. A depreciation in the currency *of* the host country will always involve a markdown of paid-in capital on the sponsor's home country financial statements. This occurs because the paid-in capital is registered in the local currency of the host country. The markdown must reflect the reduced value of paid-in capital in hard currency terms. Conversely, a loan, even an insider loan denominated in dollars, is payable by the project vehicle in that particular hard currency. In infrastructure finance involving an off-take agreement, many countries will permit the off-taker to adjust the tariff upwards in order to neutralize the effect of a depreciation on debt service, but not equity.

  Second, an investor not otherwise affiliated with a project or its sponsor(s) but desiring to make an investment in the project because of its profit-making potential also may choose to become a subordinated lender in order to characterize its investment as debt rather than equity. Institutional investors – generally collective investment vehicles, insurance companies and pension funds – purchase project convertible (subordinated) debt with attached warrants or conversion rights. Typically, these investors seek profits available from the conversion of their debt to equity if the project is successful. Until conversion, these investors benefit from ranking senior in priority to equity in a liquidation sce-

nario, and/or receiving a continuing stream of interest payments for ranking senior in priority to dividends. Generally, such investors will only consider the convertible paper issued by projects located in investment-grade countries.[4]

- Third, a project catalyst, with a mission to promote investment in a country or region, may choose to become a subordinated lender by providing subordinated loans to a project in amounts sufficient to motivate commercial lenders to participate as senior lenders. Some developing countries create debt, or equity, funds with the collaboration of the World Bank. These funds purchase the debt or equity securities issued by a wide variety of privately owned infrastructure projects located within their countries.[5]

  Institutions (as investors) and governments (as project catalysts) take commercial positions in a Project Financing based upon vastly different perspectives. The institutional investor's main motivation is to maximize returns while minimizing downside risk. Governments, on the other hand, are more motivated by the objective of promoting investment within their borders while, at the same time, participating more actively with other lenders in the governance of the loans that have been made. With regard to financial instruments, the institutions prefer equity, convertible debt or debt with warrants. Governments, on the other hand, appear to prefer straight subordinated debt.

Apart from government funds, collective investment vehicles and other investors will sometimes assume the role of a project catalyst, taking on a subordinated debt position in order to assist in mobilizing financing.

The first two categories of subordinated lenders (insiders and investors) are essentially equity participants. Their participation in a financing plan is part of the permanent capital of the project vehicle. Lenders require restrictions on subordinated debt service payments in the same way that dividend payments are restricted. Moreover, lenders will not provide any rights to these investors to participate in decision-making, or to receive any proceeds from project security, until the senior lender is repaid in full. For this reason, these categories of subordinated debt are referred to as deeply subordinated debt.

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[4] **Certain project financings in Asia have included subordinated debt structured in the form of non-investment-grade bonds and placed successfully in the 144A market in the US (see Chapter 4); however, the market for such securities has varied significantly over time.**

[5] **The World Bank has created four of these funds – Pakistan, 1990; Jamaica, 1992; Sri Lanka, 1997; Bangladesh, 1997 – and was on the verge of creating a new one in Nepal at the time of this writing (see Chapter 4).**

How big is this market? In the late 1990s, the levels of activity must have been significant. Assuming US$35 billion investment each year in greenfield infrastructure projects, deeply subordinated debt provided by insiders or investors easily could have amounted to US$8.5 billion annually as follows: (a) US$5 billion arising from 50% conversion to subordinated loan status of about US$10 billion in base equity commitments; and (b) US$3.5 billion, or approximately 10% of project costs, in contingent equity commitments actually committed as junior debt.

This is in contrast to the third category described above, in which subordinated lenders are not affiliated with the project or its sponsor(s) or investors. This category of subordinated debt will be referred to throughout as standard subordinated debt, where senior and subordinated lenders share security and negotiate express contractual terms of subordination. These terms are typically contained in a subordination and inter-creditor agreement (hereinafter, inter-creditor agreement).

The inter-creditor agreement typically defines:

- The framework of subordination, including the subordinated lender's rights and obligations relative to the project and senior lender, as well as its relative rights to security.
- Rights of the subordinated lender to participate with the senior lender in amending, modifying or waiving any term and condition embedded in the financing documents.

Provisions in an inter-creditor agreement relative to subordination are further augmented and expanded in the following commonly used financing documents:

- Accounts agreement, an agreement executed by the senior lender, subordinated lender, project vehicle, security trustee and depository bank, defining the (a) uses, including the relative priorities of such uses, to which available cash flow will be applied – referred to in Chapter 9 as the cash waterfall, or simply the waterfall; (b) various accounts where the cash will be maintained; and (c) relative rights of the project vehicle's management to manage and control these accounts during operations, including periods following any project vehicle default under the finance agreements.
- Inter-creditor agent agreement [Section I, page 557], where voting rights of creditors are set forth, including percentages of voting interests needed to take collective action pursuant to the proper administration of the loan.

- Direct agreements (Appendix12.1) and resewed **discretion(s)** (Appendix 8.1), where rights of subordinated lenders, to the extent agreed upon, are taken into account by senior lenders prior to taking action under provisions set forth therein.

The total level of standard subordinated debt booked in the emerging markets in the 1990s heyday of Project Finance would have amounted to only a fraction of deeply subordinated debt, probably no more than US$1–2 billion each year. The principal providers of standard subordinated debt are investment funds – both government and private – operating in Asia.

Methods of Subordination

Catalysts (providers of standard subordinated debt) are treated very differently from insiders and investors (providers of deeply subordinated debt), as described in Box 10.1. Insiders and investors lending to the project vehicle on a subordinated basis are usually treated, in substance, as equity holders. Accordingly, if they are permitted by the senior lender to receive any payments of debt service at all, such payments will be restricted to the same extent as payments of dividends. Payments of subordinated debt service (and dividends) typically are subject to there being no continuing default under the financing arrangements and the project vehicle having satisfied certain financial tests.

Catalysts, on the other hand, generally are entitled to receive scheduled payments of debt service. Their debt service payments are cut off only upon the occurrence of a defined event (a subordination event) triggering a payment block on subordinated debt service. Typical subordination events include circumstances where there is an insufficient cash flow to cover the scheduled debt service owed to both the senior and the subordinated lenders as well as failure by the project vehicle to satisfy other conditions.

In some types of projects, the senior lender may demand a payment block on subordinated debt payments due to a catalyst lender for the entire term of the senior loans. This also is sometimes described as a cash sweep requiring all available project cash flow (after payment of normal operating costs) to be directed to (a) pay scheduled debt service on senior debt; and (b) prepay senior principal. In such a situation, no subordinated debt service or dividends would be paid to insiders/investors/shareholders/catalysts until the senior loans are repaid in full. Interest, of course, would continue to accrue on the subordinated debt until the senior loan is fully discharged, and the project can redirect its debt service to the subordinated (now senior) lender.

Box 10.1 Effects of Subordination during Operations and Pursuant to Liquidation

Operations

A **catalyst,** or true third-party subordinated lender, typically is entitled to full subordinated debt service until a **subordination event** occurs, at which time a payment block, or interruption, in debt service is imposed. All of the project's cash flow in excess of that required to fund normal operations is then available to satisfy the senior lender's debt service. The length of such a payment block depends on the results of the negotiation between the senior and subordinated lender. Conversely, in the case of an insider or investor lending to a project on a deeply subordinated basis, a payment block sometimes is imposed during the entire term of the senior loans.

Recoveries during Liquidation

The senior lender, in connection with an acceleration of senior debt and enforcement of remedies, is entitled to recover its amounts outstanding prior to any recovery by the subordinated lender. The subordinated lender only realizes a recovery if total recoveries exceed all principal, interest (including default interest), and charges owed to the senior lender.

The above result is the same regardless of whether the subordinated lender is an insider, an investor or a catalyst. The sharing of recoveries becomes more complex in practice when there are more than two categories of lenders. In some cases, there may be special priorities agreed to among senior lenders with respect to certain security. For example, only certain **covered** senior lenders may be entitled to receive proceeds of political-risk insurance while the remaining **uncovered** senior lenders have no rights in such proceeds. There may also be more than one level of subordinated lender (i.e., second- and third-priority subordinated lenders).

INTER-CREDITOR ISSUES

The discussion below focuses on the key aspects involved in the negotiation of an inter-creditor agreement: (a)security; (b)key definitions; (c)operational matters; and (d)other rights.

Security

In a Project Financing, the security package is designed to maximize the potential for its enforcement by the lenders following the occurrence of a default by the borrower of its finance documents.

The issue of sharing security does not arise in deeply subordinated debt, which is intended to substitute for equity as part of the permanent capital of the project. In this case, the deeply subordinated lender's entitle-

ments are negligible so long as any senior debt remains outstanding [Section I. 2, page 558].

In the case of standard subordinated debt involving a catalyst, however, the senior lender and subordinated lender will usually share the same security package and will negotiate mutually acceptable terms of subordination. The subordinated lender's rights to receive payment from available cash flows and recoveries from collateral are expressly junior and subordinate to rights of the senior lender. Nevertheless, certain protections also are accorded to the subordinated lender – for example, the subordinated lender generally is given a veto in connection with fundamental amendments to the financing documents that could be materially detrimental to its interests [Section I. **8,** page **559,** and Section **J.** 3.3(f), page 566].

Two additional issues in this respect are whether (a) the two classes of lenders should share the same trustee; and (b) the subordinated lender would have residual rights over all the security once the senior lender is paid out. The security trustee is the third-party bank appointed by the lending banks to perform certain agency functions related to the security. This would include holding the security, registering, perfecting, releasing and/or enforcing it, as necessary, and generally following the instructions of those lenders authorized by the agency agreement to make related decisions.

Advantages of Using Common Security Trustee

Generally, there are benefits for both the senior and subordinated lenders in having one agent, or trustee, to hold security for the benefit of both creditors: (a) assets comprising the security are the same for both creditors; (b) the enforcement of remedies under the financing documents is the same; (c) documentation is simplified because a single trustee is able to take actions on behalf of all secured parties; (d) proceeds of collateral and insurance will be applied by the trustee impartially in the prescribed order; (e) the trustee is responsible for perfecting the security and holding title deeds on deposit for the benefit of both creditors; (f) conflict with mandatory order of registration is avoided if the parties agree to rely on the contractual provisions of subordination set forth in the financing documents; and (g) transfers of lenders' interests are simplified because the trustee (in a representative capacity for the benefit of the secured parties) usually is the secured party of record in most financing documents and transfers do not disrupt existing documentation.

Exposure of the trustee to divided loyalties involving two classes of lenders is avoided since the agency agreements will instruct the trustee to act as directed rather than use its discretion in resolving conflicts.

Subordinated Lender Residual Rights over Security

Terms of subordination between lenders generally will make clear that the subordinated lender succeeds to any residual rights in security formerly held by the senior lender as well as any voting control over decisions, actions or instructions formerly permitted to be taken or given by the senior lender.

Key Definitions

The following defined terms, or other defined terms similar thereto, are used frequently in drafting terms of subordination.

Senior debt. Senior debt is defined as those claims on the project vehicle and its assets identified in the financing documents as having priority rights with respect to payment and security. Negotiations related to the definition of senior debt vary depending on the method of subordination involved.

Generally, the senior lender wants to be free to advance ***new*** monies either to (a) assist the project in getting over a temporary hurdle; or, if necessary, (b) restructure its financing arrangements to alleviate a seriously distressed situation. If no limitations are imposed on the definition of senior debt for purposes of defining what volume of credit the subordinated lender is subordinated to, both the old and new advances of the senior lender will enjoy seniority status.

In the case of deeply subordinated debt, the subordinated lender has very little voice in defining or limiting senior debt. In the case of standard subordinated debt, the catalyst's goal will be to define senior debt as narrowly as possible, for example, to limit or exclude:

1. New debt advanced by the senior lender above and beyond that contemplated in the financing plan and formalized in the financing documents.
2. Interest and/or default interest accrued on the senior debt.
3. Fees, taxes, collection expenses (including attorney's fees) and any other amounts payable by the borrower to the senior lender under the finance documents.

Where senior debt is concerned, the senior lenders will obviously want to define as much of its exposure as possible. Often, the senior lender may agree to exclude (1) above from the definition of senior debt, but not (2) or (3) when applied to the original senior debt embedded in the finance plan. This means that it has priority of payment of the original level of debt it agreed to extend, interest and default interest on that debt, plus pro rata

fees, taxes or associated collection expenses. The rest of its exposure is treated pari passu with the catalyst's debt.

Subordinated debt [Section I. 2, page 558]. Subordinated debt is defined as those claims on the project vehicle and its assets that rank junior to the claims of senior debt in priority. There are two significant issues involved in defining subordinated debt: (a) how much subordinated debt is needed by the project; and/or (b) what portion of catalyst's debt should be defined as subordinated debt.

In the case of standard subordinated debt, the catalyst can be expected to assess very carefully the precise level of subordinated debt required by the project, and to offer this level of funding – and no more. A project with a relatively robust cash flow and with a debt service cover ratio (DSCR) that is at market, or higher, relative to all debt service does not require a subordinated lender.

On the other hand, projects having one or more of the following attributes may benefit from subordinated debt:

- Market is untested.
- An off-take agreement is absent.
- DSCR is weak even ***with*** an off-take agreement.
- Tenor of available financing is not long enough (relative to forecast revenue) to create comfortable DSCR.
- Rising interest rates, or a steeper slope of the yield curve prior to financial closing, create uncertainties regarding adequacy of DSCR.
- Project costs are likely to rise before financial closing or are otherwise uncertain.
- Project sponsor(s) is not willing to commit additional equity to compensate for any of the above.

Methodological tools have been developed to address the issue of how much subordinated debt is appropriate for a particular project, one of which is presented in Appendix 10.1. Although the approach was originally developed to measure the borrowing capacity of a project, it is also a useful mechanism to determine the level of subordinated debt needed by a project based on its cash flow attributes. To use the formula for this purpose, the subordinated lender must be aware of current market requirements for the DSCR or loan life cover ratio (LLCR). It is important for the subordinated lender to do due diligence on this issue prior to commencing its negotiation with the senior lender.

In addition, the catalyst may seek to exclude portions of its debt service from subordination as it is in its interest to define subordinated debt as narrowly as possible. These include:

- Loan fees and reimbursable costs.
- Interest accrued on the subordinated debt, including default interest.
- Other costs of administering the loan, including costs of collection.

These amounts would rank pari passu with senior debt, enjoying the same priority as the claims of the senior lenders. However, since it is in the senior lenders' interest to define subordinated debt as broadly as possible, these items are included most commonly in the definition of subordinated debt and, therefore, are ranked junior in right of payment to senior debt.

Subordination events. Defining those events that would trigger a payment block is not an issue with deeply subordinated debt since insiders and investors usually will be eligible to receive payments to the extent that shareholders are eligible to receive dividend payments.

In the case of standard subordinated debt, the goal of the catalyst is to define the subordination event(s) in such a way as to (a) postpone its manifestation as far into the future as possible; and/or (b) limit the circumstances under which it may be triggered. Ideally, a catalyst would attempt to limit subordination events to extreme problems such as bankruptcy or insolvency of the project vehicle [Section I. 14, page 562]. By contrast, the senior lender will seek to define a subordination event(s) in such a way as to cause triggering at the earliest signs of trouble, for example, upon the project vehicle's failure to satisfy a conservatively established DSCR. This is beneficial to the senior lender because the subordination event triggers a payment block of junior debt service, and hence may increase the funds available to pay senior debt.

Operational Matters

Project costs and waterfall. Project costs, as discussed in Chapter 7, are those budgeted expenditures, as agreed by the sponsor(s) and lenders, needed to build and operate the project until it arrives at some pre-agreed milestone that defines the end of the construction period or the start of the commercial operations date (COD). Project costs include (a) the EPC contract; (b) other construction-related expenses; (c) costs of developing and financing the project; and, usually, (d) any additional amounts needed to fund debt service reserve accounts (DSRA) (depending on context, senior DSRA or subordinated DSRA).

In the case of deeply subordinated debt, as mentioned previously, the subordinated lender is not entitled to receive debt service payments. Accordingly, no subordinated DSRA is established for the payment of insider or investor debt service. In the case of standard subordinated debt, the

catalyst's interests lie in ensuring that project costs are defined to include the initial funding of a subordinated DSRA.[6] If a subordinated DSRA is not funded initially from defined project costs, it will have to be funded during initial operations – immediately following commissioning of the facility when demands for available cash may be at their greatest. At that time, residual cash flows available to fund the subordinated DSRA will consist of cash remaining after the funding of operating expenses, meeting scheduled senior debt service payments, topping up the senior DSRA if there is a deficiency and meeting scheduled subordinated debt service. [Section I. 13, page 561].

Moreover, agreement is needed as to whether the subordinated lender will benefit from a separate DSRA. In some cases, the senior lender may take the position that a single DSRA may be created for both categories of lenders; however, in practice this may provide relatively little comfort to the subordinated lender. In the event of a payment block, the senior lender will have priority in right of payment from such a DSRA until funds therein are exhausted. For that reason, if no other, the subordinated lender will prefer its own subordinated DSRA dedicated exclusively to its own debt service.

The most common order of priority for the cash waterfall provision is as follows:

- Operating expenses.
- Senior debt service.
- Senior DSRA.
- Subordinated debt service.
- Subordinated DSRA.
- Restricted payments.

Under the cash waterfall, available cash will first cover project operating expenses and sequentially, all other applications in the order shown. The approach prioritizes cash flow application to senior debt service, as one would expect, and to the topping-up of the senior DSRA to the extent that it has fallen below its specified balance.

Major maintenance and other special purpose reserves are frequently added but their priority is a subject of negotiation among the sponsor(s) and lenders. Sponsor(s) prefers for these reserves to be above debt service, whereas senior lenders prefer for the reserves to be immediately below sen-

[6] **Defined project costs will equal the total amount of debt and equity that is made available to the project. The subordinated DSRA defined as pan of the project costs is funded proportionately by debt and equity.**

ior debt service and senior DSRA but prior to subordinated debt service and subordinated DSRA. Predictably, catalysts may prefer for the major maintenance reserves to be funded at a level immediately below subordinated debt service and subordinated DSRA.

There may also be considerable disagreement between senior lender and the catalyst in respect of the degree of control given to the subordinated lender, in reviewing the operating budget provided by the project vehicle to the lenders for review and approval.

Loan disbursements. Loan disbursements usually are scheduled to coincide roughly with payments that are made to the construction contractor under the terms of the EPC contract – the largest single expense involved in building a facility. As discussed in Chapter 7, there are other project expenses covered by the disbursement schedule. Where disbursements are to be met by draws on debt and equity in some prescribed order, the interests of lenders and sponsor(s) diverge with respect to timing.

The sponsor(s) prefers to fund its equity at the back-end of construction. The lenders, of course, prefer that the sponsor(s) advances its equity before any of their debt is disbursed. The issue is resolved usually in one of two ways: (a) sponsor(s) is permitted to defer its equity infusion until the end of the construction period, provided the amounts involved are backed by a standby letter of credit (L/C) from an acceptable bank; or (b) sponsor(s) and lenders disburse their respective equity and debt commitments on a pro rata basis **after** the sponsor(s) has infused a satisfactory initial layer of equity.

Permitted subordinated debt service payments [Section I. 5, page 559]. The inter-creditor agreement will specify the circumstances, if any, under which payments may be made to subordinated lenders while senior loans remain outstanding. Distinctions frequently are drawn between scheduled debt service and prepayments.

In the case of deeply subordinated debt, no scheduled debt service payments and no prepayments of debt may be made except to the extent dividends are permitted. This treatment contrasts with standard subordinated debt, where the senior lender may agree to permit the borrower to pay scheduled debt service as long as no subordination event has occurred.

A second issue affecting standard subordinated debt relates to mandatory and voluntary prepayments (referred to as redemption, if the subordinated debt takes the form of bonds). Mandatory prepayment of standard subordinated debt may be triggered by, for example, a sale of assets or stock of the project vehicle, excess cash being generated by the project,

payment of liquidated damages (LDs) or insurance proceeds, or simply the occurrence of a specified event. As long as the mandatory prepayment occurs at a time when no subordination event has occurred, and when certain other conditions protecting the senior lenders' interests (such as certain financial tests) are satisfied, the subordinated lender typically is entitled to receive its pro rata share of such prepayment.

Duration of payment block [Section I. **12,** page 561]. As mentioned previously, payments of debt service in connection with deeply subordinated debt usually are restricted to the same extent as payments of dividends to the shareholders.

In the case of standard subordinated debt, debt service payments to the subordinated lender may be subject to a payment block if one or more subordination events are triggered. During negotiations the subordinated lender will attempt to limit the duration of any such payment block. The most common point typically made by the subordinated lender is that a payment block must be lifted after the subordination event is no longer continuing, or has been waived. The subordinated lender also may attempt to establish a date after which the payment block is no longer effective. The argument here is that the senior lender should not be allowed to permit the continuance of a subordination event for an unreasonable period. The subordinated lender should no longer be blocked if, within the given time period, the senior lender does not take remedial action by waiving the subordination event, causing the borrower to cure the subordination event, or accelerating the maturity of the senior debt and enforcing remedies. The subordinated lender also will seek to limit the ability of the senior lender to use the same subordination event a second time, or to use a different subordination event arising from the same circumstances to extend the agreed-upon time period. Subordinated lenders, of course, vary in the bargaining power they possess to restrict the actions of senior lenders in this fashion.

Restricted actions [Section I. 4, page 558]. Inter-creditor provisions usually restrict the actions of both the subordinated lender and the borrower in order to provide comfort to the senior lender that neither of them will take any action adversely affecting the senior lender's financial interests. If a subordinated lender violates those restrictions, it may be required to purchase the senior lender's loan. A senior lender sometimes also will be entitled to seek specific enforcement of restrictions imposed on a subordinated lender.

The following are examples of restricted actions in the case of standard subordinated debt:

Applicable to the subordinated lender [Section **I. 9,** page *560]*
The subordinated lender will not:

- Amend any term of its loan that would cause any of the following effects:
  (a) Increasing the amount of principal repayment instalment under the subordinated debt.
  (b) Increasing the rate of interest, default or overdue interest, guarantee fee, or other fees under the subordinated debt.
  (c) Bringing forward the date for any payment referred to in (a) and (b) above.
  (d) Varying the amount of the subordinated debt commitment.
  (e) Materially prejudicing the rights of the senior lender.
- Demand or receive principal or interest payments, institute legal proceedings to recover any due payments, receive payment by way of set-off or redemption, purchases or other methods of exchanging the subordinated debt for an asset of the borrower, or institute bankruptcy proceedings against the borrower.

Applicable to the Borrower
The borrower will not:

Provide collateral security on the subordinated debt without permission from the senior lender, in each case, even in the absence of a subordination event.

Acceleration is another example of a restricted action. Because of its importance, however, it is segregated from the above discussion and dealt with separately below.

Acceleration [Section I. **12,** page 561]. Acceleration is one of the remedies typically provided to a lender following the occurrence of a breach of the finance documents. Acceleration causes the indebtedness to become immediately due and payable in full, provided the lenders are willing to declare a default, without regard to the schedule of payments otherwise applicable to the indebtedness.

In the case of deeply subordinated debt, a subordinated lender typically is not given the right to accelerate its debt or exercise any other remedies until after all senior debt has been repaid in full.

In the case of standard subordinated debt, a subordinated lender and senior lender negotiate the circumstances under which the subordinated lender may accelerate its debt and exercise remedies in connection therewith. The subordinated lender almost always is subject to one or more significant periods of delay before it is entitled to accelerate or exercise any

other remedy independently from the senior lender. This delay is intended to give the senior lender sufficient time to negotiate a financial restructuring of the project or plan its exercise of remedies. Predictably, the subordinated lender will seek for such period(s) of delay to be as short as possible (less than six months), while the senior lender will seek for such period(s) to be as long as possible (12–18 months or more) in order to preserve maximum flexibility for itself.

The subordinated lender also may he subject to various other limitations on its ability to accelerate and exercise remedies while senior debt remains outstanding, including restrictions based on the amount of subordinated debt outstanding (i.e., no acceleration or exercise of remedies permitted in connection with a subordinated debt payment default below a minimum threshold amount).

Other Rights

Rights of subrogation. The subordinated lender should have the ability to assert the rights of the senior lender, i.e., to be subrogated to the rights of the senior lender, to the extent of payments received on the subordinated debt by the subordinated lender but turned over to the senior lender pursuant to the subordination agreement. From the perspective of the borrower, amounts paid to the subordinated lender and then turned over to the senior lender are credited against the debt owed to the subordinated lender. To recover these amounts, the subordinated lender must be entitled to assert the rights of the senior lender to collect from the borrower. For this reason, subordination agreements expressly stipulate that, to the extent of the senior lender's receipt of payments attributable to the subordinated debt, the subordinated lender becomes subrogated to the rights of the senior lender to receive payment attributable to the senior debt after the senior lender has been compensated for the full amount owed under its loans.

Given the mechanics of the subrogation of the subordinated lender, any change in the terms and conditions of the senior debt, such as extending or altering the terms or releasing or substituting collateral, may indirectly affect the rights of the subordinated lender. Any such change might make it more likely that a distribution attributable to the subordinated debt would be required to be paid to the senior lender, and thereby enhance the risk of loss to the subordinated lender. Thus, the latter may wish to restrict the ability of the senior lender to make a change to the senior debt loan agreement that affects the subordinated lender's rights or obligations under the subordination agreement without its consent.

Review Questions

1. What categories of lenders provide subordinated debt and what are their motivations?
2. What is the difference between contractual and structural subordination?
3. How does the inclusion of subordinated debt in a financing plan mitigate risks for senior lenders?
4. What are some of the circumstances in which the inclusion of subordinated debt in a project's financing plan may be most appropriate?
5. Under what circumstances would you expect a collective investment vehicle to accept deeply subordinated terms of subordination? Under what circumstances would you expect standard terms of subordination to be applicable?
6. If a sponsor is assumed to have investment hurdle rates in a range of 20–25% per annum while commercial bank loans yield 300–500 basis points over London Interbank Offer Rate (LIBOR), what would you assume to be a target return for a subordinated loan made by a collective investment fund? Government fund? In what way would the loan structure be different?
7. A senior lender is willing to provide 12-year door-to-door funding to a project amounting to 35% of project costs. Equity is expected to provide 30% of project costs. In securing the balance of funding needed by the project, it has the option of approaching (a) another senior lender willing to provide up to 20-year door-to-door financing for the balance needed; or (b) a subordinated lender that can provide 16-year financing for the same amount.
   (i) If there is some urgency in getting the project to financial closing, the project's sponsor is first-rate, the country is investment-grade-rated, a strong off-take is involved, and the DSCR is relatively robust, which of the two lenders is more attractive? Why?
   (ii) What attributes should the project have (e.g. sponsor, off-take, country or DSCR) to make the other lender more attractive?

APPENDIX 10 1

MEASURING BORROWING CAPACITY OF THE PROJECT

Using the standard financial tools such as present value (PV)and LLCR, a lender can estimate the maximum senior loan borrowing capacity of any project. This appendix explains the methodology for calculating senior and subordinated loan borrowing capacity.

Senior Loan Borrowing Capacity

Table A1O.l shows a project's projected net cash flow available for debt service (CADS)for 15 years. For this purpose, the net cash flow was arrived at by deducting all cash expenses and outflows, including taxes from cash inflows, except for debt service. It is assumed for this purpose that the project will:

- Take two years to construct.
- Require US$300 million to construct, with equity providing US$100 million and loan of $200 million provided by senior lenders.

For the sake of simplicity, we will assume that the project initially has been able to attract only senior lenders.

Table A10.1 Net Cash Flow Available for Debt Service (CADS) (US$ Millions)

Year	−2	−1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CADS				33	34	37	25	37	41	45	36	54	60	54	37	43	39	35

It is further assumed that the Weighted Average Cost of Debt (WACD) is 10% per annum, and the average loan tenor for senior lenders would be 17 years from financial closing.

Given the 10% WACD, the PV of CADS in Table A1O.l at financial closing is US$245 million.

Let us further assume that the senior lenders require the ***minimum*** LLCR to be in the range of 1.25–1.30.

Hence,

$$\text{PV (net cash flow)} \geq \text{Total senior loans} \times \text{Required LLCR}$$

Where LLCR is the ratio of net present value of CADS at a discount rate equal to the WACD, from financial closing up to the final maturity

date of the senior loan, to the maximum principal amount outstanding.

Hence.

$$\text{Prudent level of senior loan} = \frac{\$245 \text{ million}}{\text{Required LLCR}}$$

The following summarizes the calculation for LLCR assumed at between 1.25 and 1.30:

Required LLCR	Senior loan borrowing capacity
1.25	US$196 million
1.30	US$189 million

Accordingly, the project can support from US$189 million to US$196 million of senior loans, based on the LLCR required by the senior lenders. As such, the project would need from US$11 million (= US$200m – US$189m) to US$4 million (= US$200m – US$196m) in subordinated loans to meet target DSCR.

chapter 11

THE INTEREST RATE SWAP

INTRODUCTION

Project Finance loans are characterized by long tenors, substantial uncertainty regarding the movement of future interest rates. With rising interest rates, the borrower is adversely affected because of high debt service obligations, while in a falling interest rate environment, the lender experiences a fall-off in interest income. Concern with regard to the fluctuations in the interest rate will specifically arise if the project has contracted all variable-rate debt but has no similar hedge in its revenue structure.

To hedge such risk, project vehicles are required by lenders to enter into contracts that are referred to as interest rate swaps, caps and floors, call and/or put swaptions. These instruments were developed because of the needs of governments, banks, companies and projects throughout the world to manage their exposure to interest rate volatility. As discussed in Chapter 2, similar instruments are available to hedge against exchange rate and commodity price volatility.

The first interest rate swap was done in 1982. Originally, investment banks arranged swaps for customers requiring a hedge on interest rate payment obligations. For a robust transaction fee, the investment bank would offer a highly personalized service that consisted of a risk diagnosis, problem solving, a search for the right counter-party, and assistance with the negotiation of the interest rate swap agreement. With time, however, swap contracts became more standardized. With increased standardization and market sophistication, customers began to favour a faster, more cost-efficient service rather than a highly personalized one. In response to the demand shift, the commercial bank became the natural intermediary, as it was more willing in the interest of arranging the deal quickly to accept the role of the counter-party, at least temporarily. Ultimately, however, the com-

mercial bank would close out the risk position it had taken with other transactions, government securities or instruments in the financial markets.

Broadly, the objectives of this chapter are to provide an overview of interest rate swaps. The subject matter is important because most, if not all, Project Finance transactions are funded at least in part with variable-rate debt. To reduce the potential impact of variable-rate debt service, lenders require borrowers to hedge their exposure to interest rate volatility by resorting to the interest rate swap or other acceptable instrument.

Accordingly, the chapter addresses the following areas:

- Definition of basic terms and concepts used by market participants of interest rate swaps, including a brief look at other hedging instruments.
- A practical illustration demonstrating the comparative advantage of using interest rate swaps.
- Methodology related to the pricing and reversal of swaps, with a step-by-step illustration presented at the conclusion of this chapter in Appendix 11.1.
- An examination of the major commercial issues that arise in the negotiation of these instruments.

INTEREST RATE SWAPS: BASIC CONCEPTS AND DEFINITIONS

Perhaps the most common of the Project Finance derivatives is the interest rate swap. The following terms and concepts are important in understanding interest rate swaps:

- Interest rate swap and notional principal. An interest rate swap is an agreement between two parties under which each agrees to exchange, or "swap", their respective obligations to pay interest on their loan contracts on particular dates in future (payment dates). The most common of such arrangements involves the exchange of a fixed for a variable interest, both of which are calculated by reference to an amount referred to as the notional principal.

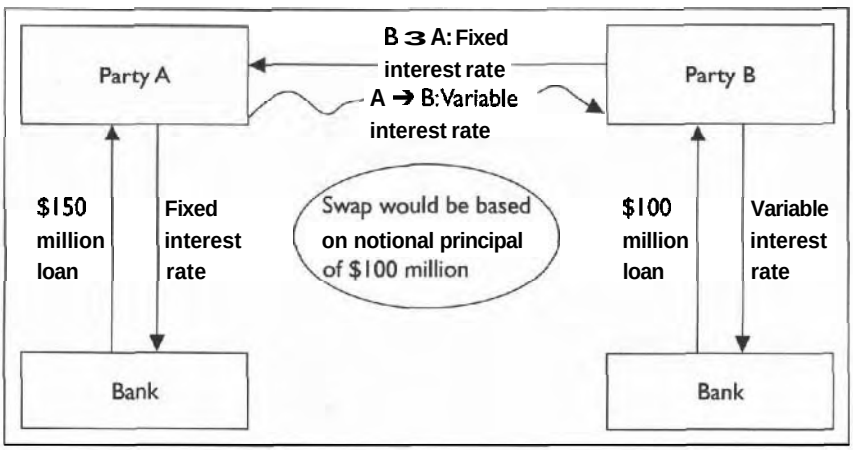
  It should be duly noted that the notional principal never changes hands in an interest rate swap, only the net difference in interest payments changes hands on the designated payment dates, as explained further below.

  Fixed-rate and variable-rate interest payments are usually exchanged (swapped) on annual, semi-annual, quarterly or monthly payment dates. The last payment date is known as the termination date or, more commonly, the maturity date. Two other relevant dates are the trade date,

on which the parties agree to do the swap and the ***effective date,*** when the first fixed and variable payments start to accrue.

In Figure **11.1,** Party B is known as the fixed-rate payer, while Party A is referred to as the variable-rate payer. The fixed-rate payer, B, enters into an agreement with the variable rate payer, **A,** committing itself over a defined period to make periodic fixed payments of interest on designated payment dates. Conversely, the variable-rate payer, **A,** obligates itself over the same defined period to make periodic variable payments of interest on the agreed payment dates.

Figure 11.1 Basic Structure of an Interest Rate Swap



The notional principal may differ from the actual principal that each party has borrowed under its loan contract. For example, Party A may have borrowed $150 million in London on a fixed-rate basis, while Party B borrowed $100 million in New York on a variable-rate basis. **A,** based on current business projections, decides that its forecast cash flow is better able to accommodate a variable-rate loan rather than a fixed-rate one. Similarly, B realizes that a fixed-rate loan is more apt for its changed, or changing, circumstances. Through a swap broker intermediary, both parties agree to enter into a contract to exchange interest payments on specified payment dates with each other based on a notional principal of $100 million. In this case, B is more fully hedged than A. However, A has a variety of options available to hedge its remaining exposure, one of which is to enter into a second swap based on a notional principal of $50 million.

- Plain vanilla swaps. The great majority of swaps executed in the market may be regarded as standard interest rate swaps (plain vanilla swaps), with the following characteristics:

(a) Variable and fixed payments are regular, for example, every six months.
(b) Term of the swap (the time between the effective date and the termination date) is a whole number of years, most often one, two, three, four, five, seven or ten years.
(c) One party makes fixed-rate payments, the other variable-rate payments.
(d) Notional principal remains constant throughout the life of the swap.
(e) The fixed rate remains constant throughout the life of the swap.

Example of a Plain Vanilla Swap

Assume two counter-parties, **A** and B. Party A borrows *$25* million on a variable-rate basis on five-year terms with principal repaid at the end of five years (i.e. a five-year bullet maturity). Hence, As principal outstanding will be *$25* million over the full five years until it is paid off. Party B borrows *$25* million on a fixed-rate basis on five-year terms with principal similarly repaid on a bullet maturity basis. Further assume that party **A** has need of a fixed-rate, rather than a variable-rate, loan; and party B has need of a variable-rate, rather than a fixed-rate loan. Both parties enter into an interest rate swap whereby they agree to exchange obligations to pay interest, based on a ***notional principal*** of *$25* million.

- Fixed Payment. Collectively, the fixed payments on a swap are known as the fixed leg. Each fixed payment is determined by multiplying the notional principal by the pre-determined fixed rate and a quantity known as "the fixed-rate day count fraction", hence:

$$\text{Fixed payment} = \text{Notional principal} \times \text{Fixed rate} \times \text{Fixed-rate day count fraction}$$

  Broadly, the fixed interest rate is determined by current expectations related to future short- and long-term interest rates, as discussed in a separate section. The fixed-rate day count fraction is equal to the fraction of the year that has, or will have, elapsed since the previous interest payment date. Several day count conventions are identified and discussed further below.
- Variable payment. Collectively, the variable payments on a swap are known as the variable leg. Each variable payment has three dates associated with it: D_s, the ***setting date;*** D_i, when ***interest starts to accrue;*** and ***D_p,*** the ***payment date.*** Depending on the currency and the benchmark, the setting date, D_s, is usually two business days prior to the next

variable-rate payment date. On this day, reference may be made to one of several publicly available information services that carry up-to-date information on the benchmark rate, e.g. London Interbank Offer Rate (LIBOR), US prime rate or other benchmark. The payment is calculated by multiplying the notional principal by the variable rate and variable-rate day count fraction, hence:

$$\text{Variable payment} = \text{Notional principal} \times \text{Variable rate} \times \text{Variable-rate day count fraction}$$

- Day counting convention. Day count convention refers to the manner in which interest is to be accrued between two payment dates, or between a disbursement date and a payment date. Mathematically, interest is accrued between two dates, D1 and D2, according to the formula:

$$\text{Interest (I)} = \frac{\text{Number of days between two payment dates}}{\text{Number of days in a year}} \times \text{Notional principal} \times \text{Annual interest rate} \qquad (12.1)$$

In practice three distinct day counting, or interest accrual, conventions are followed: (a) actual/365; (b) actual/360; and (c) 301360 basis.

Under the actual1365 basis:

$$\frac{\text{Number of days between respective dates}}{\text{Number of days in a year}} = \frac{D_2 - D_1}{365}$$

And under actual/360 basis:

$$\frac{\text{Number of days between respective dates}}{\text{Number of days in a year}} = \frac{D_2 - D_1}{360}$$

where $(D_1 - D_1)$ denotes the actual number of days between the two dates.

Under 301360 basis:

$$\frac{\text{Number of days between respective dates}}{\text{Number of days in a year}} = \frac{\rho_{360}(D_1, D_2)}{360}$$

where $\rho_{360}(D_1, D_2)$ denotes the number of days from D_1 until D_2, calculated by assuming that all months have 30 days and a year has 360 days.

The following example illustrates the calculation of interest rate payment under different day counting conventions:

Example of Day Counting Conventions

Assume that ***A*** has borrowed US$2,000,000 on a fixed-rate five-year bullet maturity basis, i.e. principal is repaid at the end of five years. According to the terms of the borrowing, A is obligated to make interest payment on principal outstanding on 15 March and 15 September every year until maturity at a fixed interest rate of 10% per annum.

How will the three different day counting conventions affect the level of interest due between interest payment date?

For the purpose of calculating all three amounts of interest due, the actual number of days from 15 March to 15 September is 184. If all months are defined to have 30 days, however, the number of days from 15 March to 15 September is 180 days (= 6 months × 30 days).

According to equation 12.1, under *actual/365* basis, interest payment would be calculated as follows:

$$I = \frac{184}{365} \times \text{US\$2,000,000} \times 10\%$$
$$= \text{US\$100,821.91}$$

Under *actual/360* basis, interest payment would he calculated as follows:

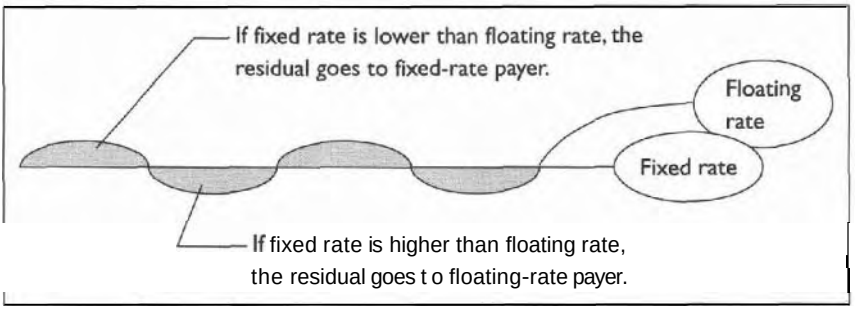
$$I = \frac{184}{360} \times \text{US\$2,000,000} \times 10\%$$
$$= \text{US\$102,222.22}$$

Under *30/360* basis, interest payment would be calculated as follows:

$$I = \frac{180}{360} \times \text{US\$2,000,000} \times 10\%$$
$$= \text{US\$100,000.00}$$

- Payment netting. It is a market standard convention that the exchange of interest payments between two parties is executed through payment netting (see Figure 11.2). For example, if A owes B more interest payment than B owes **A** on a payment date, only A will make a payment to B equal to the difference between the two payment amounts.

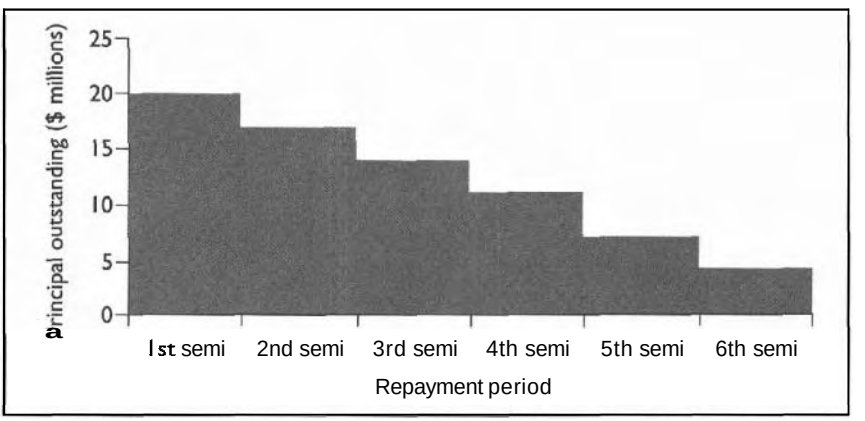
Figure 11.2 Payment Netting of an Interest Rate Swap



With the increased maturity of the market, a whole gamut of interest rate swaps have become available tailored to the need of customers. Some of the variants are as follows:

- Amortizing swaps. An amortizing swap is used whenever a loan has scheduled repayments of principal over its term rather than a bullet repayment structure. In this case, the notional principal decreases over the life of the swap. Figure 11.3 shows changing principal profile of an amortizing swap.

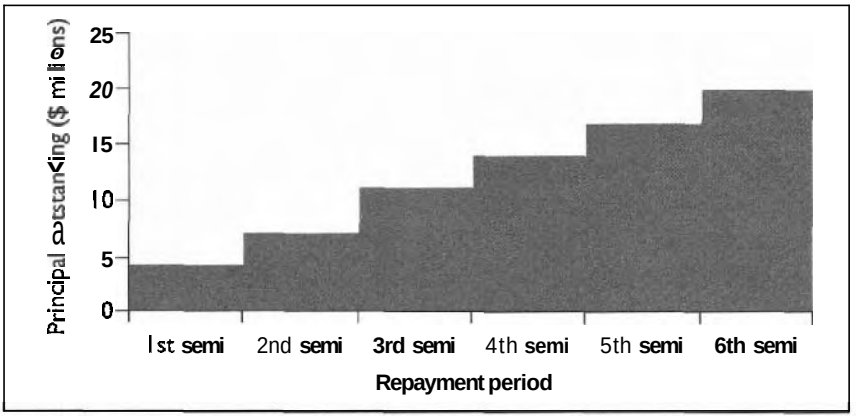
Figure 11.3 Changing Notional Principal Profile of an Amortizing Swap



- Accreting swaps. In an accreting swap, the notional principal increases over the life of the swap. This would be the case during the construction period of a greenfield project where there are likely to be several disbursements over the loan availability period. If a project vehicle has a variable interest rate loan during construction and wants to hedge against movements of the variable interest rate, it can enter into an

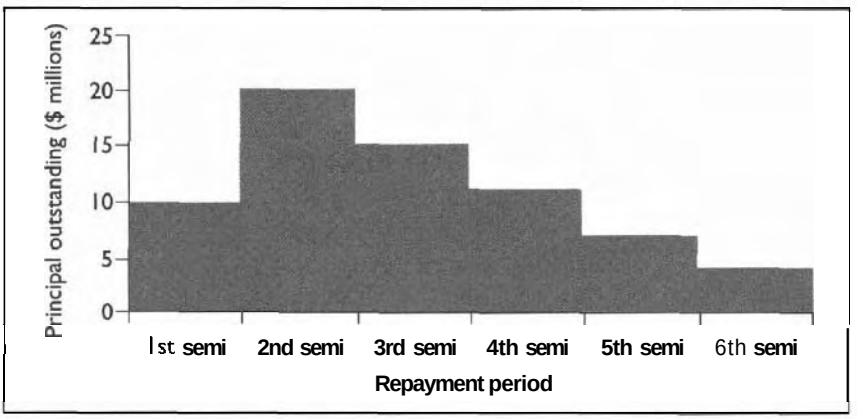
accreting swap deal with another party. Figure 11.4 shows changing principal profile of an accreting swap.

Figure 11.4 Changing Notional Principal Profile of an Accreting Swap



- Roller coaster swaps. A roller coaster swap accommodates the characteristics of both amortizing and accreting swaps. In this case, the outstanding principal increases during the construction period and then declines during the operating period with scheduled repayments of interest and principal. Swap deals covering the borrowings of large infrastructure projects will have a notional principal profile similar to that presented in Figure 11.5.
- Basis rate swaps. Unlike the standard swap (one leg fixed, the other variable), both of the legs of a basis rate swap are variable. However,

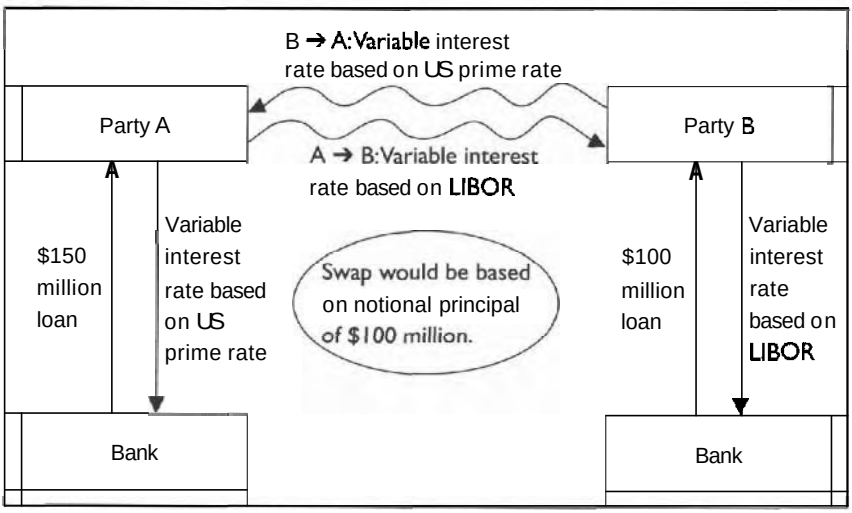
Figure 11.5 Changing Notional Principal Profile of a Roller Coaster Swap



the variable legs of such a swap are defined in terms of two distinct interest rates, e.g. US prime rate versus LIBOR. An industrial finance company may borrow at LIBOR but use the US prime rate as its reference for its loan portfolio.

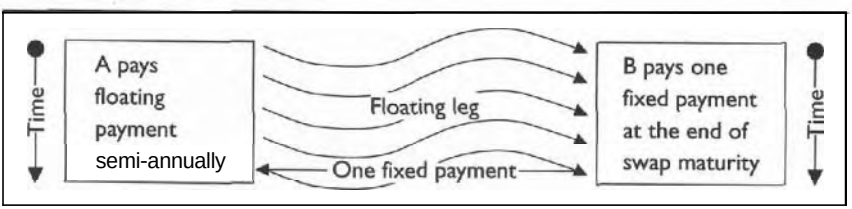
Its exposure to basis risk can be reduced with a suitable basis rate swap, as illustrated in Figure 11.6.

Figure 11.6 Basis Rate Swaps



- Zero coupon swaps. In a zero coupon swap, there is only one fixed payment to be made by the fixed-rate payer vis-à-vis a series of variable payments received on each payment date during the life of the swap. Generally the fixed payment takes place on the maturity date of swap, when the zero coupon instrument is redeemed. Figure 11.7 illustrates a zero coupon swap.

Figure 11.7 Zero Coupon Swap



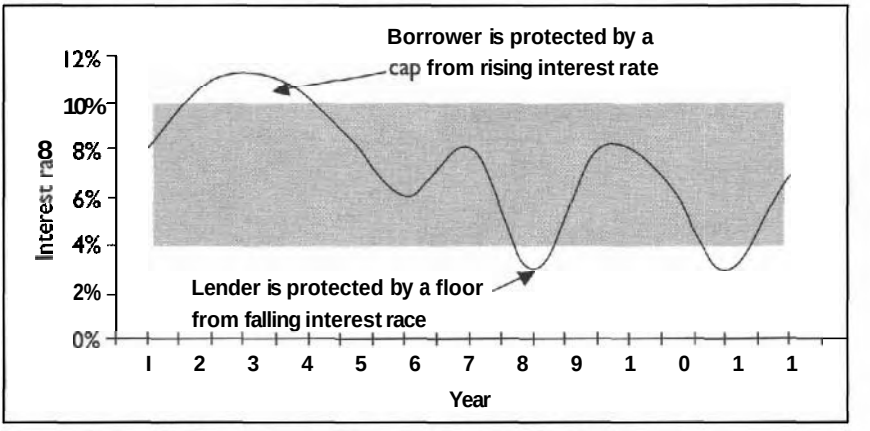
OTHER DERIVATIVES USED TO HEDGE INTEREST RATES

Other types of interest rate hedging are discussed below:

- Interest rate **cap.** This is a contract that when bought guarantees a ***borrower*** that variable interest rates will not exceed a specified amount, specifically by capping them at some pre-agreed level. This protects the borrower from rising interest rates and at the same time allows it to enjoy lower rates. The premium for a cap is always paid in advance, at the time of deal execution.
- Interest rate floor. This is similar to a cap, except that it guarantees that the lender's revenue stream will not fall below a specified interest rate. This type of contract protects the lender from declining interest rates while allowing it to benefit from a higher interest rate environment. The purchase of a floor similarly involves the payment of a premium which is due at the time of deal execution.
- Interest rate cap and floor. Sometimes, the purchase of an interest rate cap and the sale of a floor are combined in a single contract to hedge both the upward and downward movement of interest, as illustrated in Figure 11.8.

  This type of contract contains features of both contracts described above. The lender caps the interest rate at some mutually agreed level in exchange for a mutually agreed interest rate floor and the borrower is protected against a rise in variable rates but in return is limiting the benefit they will receive from a downward movement in interest rates. Usually, the collar is structured so that the premium due under the pur-

Figure 11.8 Interest Rate Caps and Floors



chase of the cap is equal to the premium that would be received by the sale of the floor. This is known as a zero-cost collar.

- Call swaption. A call swaption gives the buyer the right, but not the obligation, to enter into an interest rate swap during a specified period, at which time the buyer agrees to pay a variable rate calculated on an agreed notional principal and receive a fixed rate on the same amount. If the option is exercised, the writer of the option agrees to pay a fixed rate to the buyer and receive a variable rate calculated on the notional principal. The buyer of the call pays the writer a premium for this right.
- Put swaption. This type of swaption gives the buyer the right, but not the obligation, to enter into an interest rate swap during a specified period, at which time the buyer will pay a fixed rate calculated on an agreed notional principal and receive a variable rate on the same amount. If the option is exercised, the writer of the option agrees to pay a variable rate to the buyer and receive a fixed rate in return calculated on the notional principal. The buyer of the put pays the writer a premium for this right.

ADVANTAGE OF SWAPS

The theory of comparative advantage has its origin in international trade. According to its central premise, countries should produce goods and services in which they have a comparative advantage, trading them for goods and services that they are not able to produce as efficiently. By obtaining the desired mix of goods through trade, each country will attain a higher level of welfare. This principle can be applied to interest rate swaps as well.

Assume a project vehicle would rather borrow at a fixed rate rather than at a variable rate. The borrower, however, has relatively better access to variable-rate funds than it has to fixed-rate funds. If such is the case, it should borrow on this basis and then "trade" the variable-rate for a fixed-rate obligation through an interest rate swap. The swap enables the borrower to obtain fixed rate at a cheaper rate than if borrowed directly.

For example, X and Y are two companies. X, a well-known multinational company, can borrow at a very attractive rate in both the bank and bond markets. It pays 35 basis points (0.35%) over LIBOR on its bank loans and 70 basis points over US Treasury (UST) bond rate with the same maturity as the loan being processed.

Y is a smaller and less well-known company. It pays more to borrow in both markets: 150 basis points over LIBOR on its bank loans and 350 basis points over the UST bond rate for the applicable maturity.

If LIBOR and the UST bond rate were 6% per annum and 8.5% per annum, respectively, the rates these firms would pay are as follows:

	Bank loan	Bonds
Y	7.50%	12.0%
X	6.35%	9.2%
Quality spread	1.15%	2.8%
Quality spread differential	(2.8% – 1.15%) =	1.65%

Y must pay more than X on both bank loan and bond issue. However, Y has a comparative advantage in bank loans, i.e., its quality spread of 1.15% in this market is lower than its quality spread of 2.8% per annum in the bond market.

This raises the possibility that each firm can exploit its comparative advantage and share the gains by reducing overall borrowing costs. A swap will enable the two companies to seize these gains, allowing each to borrow more cheaply. The total savings realized by both parties will amount to the quality spread differential of 1.65%. However, the distribution of this gain may not be even, as it depends on the bargaining power of each party. Presumably, the more creditworthy party would have an upper hand in negotiating the transaction.

Since X has a comparative advantage in the bond market it will borrow from that market at the fixed rate of 9.2% per annum. Y, on the other hand, has a comparative advantage in bank loans and will borrow from the bank at the variable rate of 7.5% per annum (LIBOR, currently 6% per annum, plus 150 basis points). Now assume that Y agrees to pay X a fixed rate of 10.3% per annum, and X in return agrees to pay Y the variable rate of LIBOR, currently 6% per annum.

Let us now consider the benefit of this swap to the two parties.

Position of X		
Fixed-rate payments on the bond	:	9.2% per annum (p.a.)
Fixed-rate receipts from Y	:	(10.3)
LIBOR payments to Y	:	6.0
Total payments	:	4.9% p.a.
Position of Y		
Variable-rate payments	:	7.5% p.a.
Variable-rate receipts	:	(6.0)
Fixed-rate payments	:	10.3
Total payments	:	11.8% p.a.

X pays a fixed rate of 9.2% per annum, on the bonds but receives a fixed rate of 10.3% from Y. It pays Y a variable rate of LIBOR, i.e., 6% per annum currently, leaving him a net payment of 4.9% per annum. If X borrowed directly from the bank, it would cost 6.35% per annum, i.e., the

borrowing cost is reduced in this case by **145** basis points **(6.35%–4.9%)** per annum.

Now consider the gain for Y. It pays its lender a variable rate of *7.5%* per annum, receives from X a variable rate of LIBOR, i.e., 6% per annum, and pays X a fixed rate of **10.3%** per annum, leaving a net borrowing cost of 11.8% per annum. If Y borrowed directly from the bond market, it would cost 12% per annum, i.e., borrowing cost has been reduced in this case by **20** basis points **(12%– 11.8%)** per annum.

By engaging in a swap, both X and Y exchanged fixed and variable interest payment obligations and have also reduced their borrowing costs. The total savings to both parties is **165** basis points, or **1.65%** per annum. The savings is always represented by the quality spread differential, i.e., the difference between the comparative advantage of X in the bond market as opposed to the comparative advantage of Y in the bank market.

PROJECT FINANCE APPLICATIONS

Pricing an Interest Rate Swap

Swaps are priced with reference to anticipated forward interest rates. When the phrase pricing an interest rate swap is used, it refers generally to the conversion of a variable leg made up of forward rates into its equivalent fixed leg. In other words, pricing a swap is to answer the question "At what point am I indifferent between receiving (or for that matter, paying) a fixed rate on an identified principal amount in return for paying (or for that matter, receiving) variable interest payments on the same amount?" As illustrated in Figure **11.9,** this should be the point where the present value (PV) of all future fixed payments under the fixed leg is equal to the PV of variable payments at anticipated forward rates, ***given current expectations with regard*** to spot ***swap rate curve.*** As is shown in Appendix 11.**1,** the forward rates of the variable leg are derived from the spot swap rate curve.

In pricing a swap, as is shown in Figure **11.9,** the PV of all payments made under the variable leg is calculated first. The equivalent fixed rate is identified through iteration when the PV of all payments made under the variable leg is equal to the PV of all payments made under the fixed leg.

We will use the illustration below to clarify the concept. Terms that we specifically focus on in this illustration are payment dates, notional principal including changes thereof, changing notional principal, discount factors, PV of the total variable leg, PV of the **total** fixed leg and equivalent fixed-rate loans.

Figure 19 Swap Pricing by Iteration

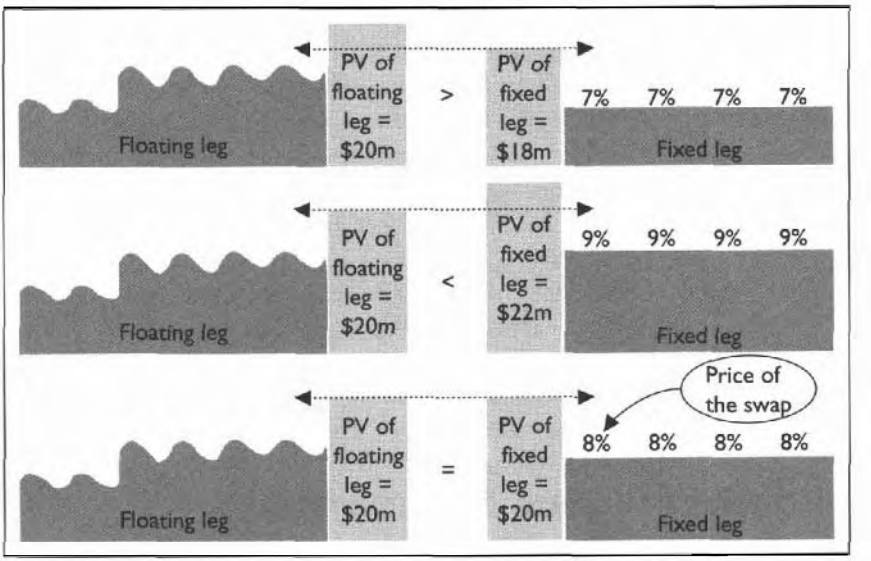


Illustration: A $105 million roller coaster swap

Loan amount	:	$105 million variable-rate loan.
Tenor	:	5 years.
Grace period	:	$2\frac{1}{2}$ years.
Construction period	:	2 years, during which interest on loan is rolled up and capitalized.
Loan drawdown	:	4 equal semi-annual drawdowns; first one commencing at financial closing; the rest while facility is being constructed.
Repayment profile	:	6 level principal; semi-annual.
Start of repayment	:	First repayment commences six months after construction completion.
Problem	:	Find an equivalent fixed rate based on the same notional principal with the same drawdown profile.

The solution to the above problem involves two steps: (a) analysing the variable leg of a swap whose notional principal and forward rate structure match loan terms and conditions; and (b) finding the equivalent fixed rate that makes the PV of the variable leg equal to the PV of the fixed leg.

Assessing the Variable Leg

To assess the variable leg, the first step is to identify the payment dates, i.e.,

those dates when principal and/or interest payments are made from borrower to lender. In this case, the five-year loan has ten semi-annual payment dates including four semi-annual periods defining the construction period when interest is rolled up; and six semi-annual periods when principal is repaid.

As far as the swap is concerned, there is no single notional principal; rather, notional principal will change over each of the ten semi-annual payment dates from financial closing to final maturity of the loan. This changing notional principal results from the staged draws and roll-up of interest during construction as well as the repayments of principal after commissioning. To properly assess the variable leg, notional principal and forward rates must be found for each semi-annual payment dates when money changes hands.

Identifying the forward rates is central to swap pricing. A swap is, in fact, a series of forward contracts – each such contract having its own forward rate and its own notional principal. In this example, each of the forward rates is attached to different levels of notional principal. Hence, as is shown in Figure **11.10,** the loan in question will have ten as-yet-unidentified forward rates corresponding to ten payment dates, each with a different notional principal.

For the purpose of this illustration, we have gathered the forward rates in Table **11.1.** The precise methodology in which these rates have been derived is shown in Appendix **11.1.**

Figure 11.10 Forward Rate Applicable to Five-Year Loan with Semi-Annual Draws and Repayments

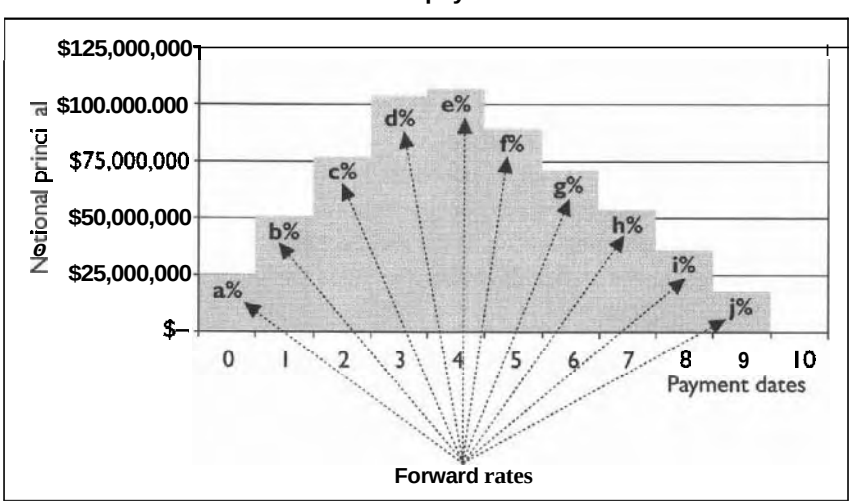


Table 11.1 Fomard Rates

Forward rates period	Years	Annualized forward rate (%)
1	0.5	1.8813
2	1.0	2.6945
3	1.5	3.8765
4	2.0	4.9369
5	2.5	5.2577
6	3.0	6.0232
7	3.5	5.8369
8	4.0	6.3307
9	4.5	6.1051
10	5.0	6.4389

Armed with the forward rates, we are now able to calculate the variable leg, as shown in Table 11.2.

Finding the Equivalent Fixed Leg

We follow the similar procedures as we did in the case of variable leg to calculate the fixed leg. Specifically, we use a guessed swap rate (or fixed rate) on the loan and calculate the fixed leg. The correct swap rate is found through trial and error, by setting the PV of the total variable leg equal to the PV of the total fixed leg.

Let us assume that the fixed rate is 4.00% per annum. At this rate, we calculate the fixed leg, as shown in Table 11.3.

The residual is defined to be the difference between the variable and the fixed leg. We will find the PV of the residuals and iterate the fixed rate till we make the sum of PV of residuals equal to zero.

To find the PV of residuals, we need to have a set of discount factors. However, once each forward rate is known, it is a relatively simple matter to calculate the discount factor. With the exception of period 1, discount factor for the current period is defined as follows:

$$\frac{\text{Discount factor in the previous period}}{[1 + (\text{Forward rate in the current period} \times \text{Number of days in the current period}/360)]}$$

For period 1, there is no discount factor available for the previous period. In this case, we substitute the discount factor in the numerator by 1.

Table 11.2 Calculation of Variable Leg

All figures are in $'000 unless otherwise indicated	0	1	2	3	4	5	6	7	8	9	10
Number of days in each payment period		182	183	182	183	182	183	182	183	182	183
Forward rate (%)		1.88	2.69	3.88	4.94	5.26	6.02	5.84	6.33	6.11	6.44
Principal drawdown	25,000	25.000	25,000	25,000							
Rolled-up IDC[a]		238	688	1,488	2.570						
Notional principal[b]	25,000	50,238	75.926	102.414	104.984	87,487	69,989	52,492	34,995	17,497	0
Principal repayment[c]						(17,497)	(17,497)	(17,497)	(17,497)	(17,497)	(17,497)
Variable interest (variable leg)[d]						(2,790)	(2,679)	(2,065)	(1,689)	(1,080)	(573)
Debt service under variable leg[e]						(20,287)	(20,176)	(19,562)	(19,186)	(18,577)	(18,070)

Explanations

Interest during construction (IDC) refers to the variable interest that is rolled over into the notional principal during the construction period.

[b] Period 0–4: Notional amount = Notional amount in previous period + Interest rolled over + Principal drawdown in present period
Period 5–10: Notional amount = Notional amount in previous period − Principal repayment in present period

[c] The principal repayment on notional amount for every period = $\frac{\text{Notional principal amount at the end of the construction period}}{\text{Number of payment periods}} = \frac{\$104{,}984{,}000}{6}$

[d] Variable interest payment = $\frac{\text{Forward rate for the current period} \times \text{Number of days in the current period} \times \text{Notional amount in previous period}}{360}$

[e] Principal repayment plus variable interest.

Table 13 Calculation of Fixed Leg

All figures are in $'000 unless otherwise indicated	0	1	2	3	4	5	6	7	8	9	10
Number of days in each payment period		182	183	182	183	182	183	182	183	182	183
Fixed rate (%)		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Principal drawdown	25,000	25,000	25,000	25,000							
Rolled-up IDC[a]		506	1,027	1.548	2.096						
Notional principal[b]	25,000	50,506	76,533	103,080	105.176	87,647	70,117	52,588	35.059	17.529	0
Principal repayment[c]						(17,529)	(17,529)	(17,529)	(17,529)	(17,529)	(17,529)
Fixed interest ("fixed leg")[d]						(2,127)	(1,782)	(1,418)	(1,069)	(709)	(356)
Total debt service under fixed leg[e]						(19.656)	(19.311)	(18,947)	(18,598)	(18,238)	(17,885)

Explanations

Interest during construction (IDC) refers to the fixed interest that is rolled over into the notional principal during the construction period.

[b] Period 0–4: Notional amount = Notional amount in previous period + Interest rolled over + Principal drawdown in present period

Period 5–10: Notional amount = Notional amount in previous period − Principal repayment in present period

[c] The principal repayment on notional amount for every period = $\frac{\text{Notional principal amount at the end of the construction period}}{\text{Number of payment periods}} = \frac{\$105,176,000}{6}$

[d] Fixed interest payment = $\frac{\text{Fixed rate for the current period} \times \text{Number of days in the current period} \times \text{Notional amount in previous period}}{360}$

[e] Principal repayment plus fixed interest

The calculation of residuals is illustrated in Table 11.4.

From the table, it can be seen that at the fixed rate of 5.00% per annum, the PV of residuals is calculated at about $1.3 million, while it is about $0.302 million at the fixed rate of 6.00% per annum. Therefore, the equivalent fixed rate that makes the PV of the floating leg equal to that of the fixed leg must fall between 5.00% and 6.00% per annum. We keep iterating the fixed rate until we find that at 5.82% per annum, PV of residuals is calculated to be zero, i.e., PV of all payments made under the variable leg is equal to the PV of all payments made under the fixed leg. Hence, this is the "fixed rate" for the $105 million variable-rate loan.

Other Components of Swap Pricing

In addition to the forward rates, there are two other components that influence pricing of an interest rate swap: transaction costs and credit risk.

Transaction Costs

Transaction costs are reflected in the bid/ask spread for a risk-free transaction. The width of the bid/ask price in the market is not determined by a single market maker but, like the forward rate, by the competition in the market.

Credit Risk

Unlike the forward rates and transaction costs which are determined by the market, the credit risk is the premium added to the bid/ask spread to reflect the risk of non-performance by the counter-party (in the above example, the borrower). The credit risk must reflect appropriate compensation for the probability of default. Risk premiums are a product of where credit is being priced in the market. In today's market, for a Project Finance transaction with a lending margin of 300–400 basis points, the swap risk premium may be expected to be in the range of 40–80 basis points. The credit risk for a swap transaction is considerably lower than that for a Project Finance loan. The differences lie in the respective obligations:

- In the loan, the lender has at risk full debt service of principal plus interest whereas in the swap, because of payment netting, the swap counter-party is at risk for the interest payment.
- Moreover, in the loan, the lender has at risk the full interest payment whereas in the swap, the swap counter-party has at risk only the net cash flow difference at each settlement date between variable and fixed interest rates.

Table 14 Valuation of Residuals

Period	Forward rate (%)	Discount factor	Variable leg ($'000)	Fixed leg ($'000)	Residuals ($'000)	PV of residuals ($'000)	PV of residuals ($'000)	PV of residuals ($'000)	PV of residuals ($'000)
				At 4.00% per annum			At 5.00% per annum	At *5.82%* per annum	At 6.00% per annum
1	2	3	4	5	6 = 4 – 5	7 = 6 × 3	8	9	10
1	1.88	0.991							
2	2.69	0.981							
3	3.88	0.968							
4	4.94	0.949							
5	5.26	0.926	2,790	2,127	663	614	122	(280)	(370)
6	6.02	0.902	2,679	1,782	897	809	407	79	5
7	5.84	0.875	2,065	1,418	647	567	256	3	(54)
8	6.33	0.850	1,689	1,069	620	527	300	114	73
9	6.11	0.824	1,080	709	371	306	160	41	14
10	6.44	0.799	573	356	216	173	102	43	30
						2,996	1,347	0.00	(302)

- If the loan and swap are provided by the same party, the swap will lower the risk on the lender's loan. By definition, a hedge on interest rate volatility reduces the probability of default on the part of the borrower.

Early Termination or Reversal of the Interest Rate Swap

The early termination, or reversal, of an interest rate swap creates some problems for the parties involved. The issue arises because market interest rates will invariably be different on the date of early termination from those conditions extant at the time the swap was executed.

If, as shown in Figure **11.11,** the forward yield curve is steeper (i.e., interest rates are higher) at the early termination date of a swap (relative to its execution date), the variable-rate payer will suffer a loss from the early termination while the fixed-rate payer will benefit from the early termination. The measure of loss is determined by taking the difference between the PV of the fixed-rate payments and the PV of the floating-rate payments at the currently prevailing forward interest rates and discount factors. **A** swap is essentially valued by considering the replacement cost to both parties. If interest rates have increased, the fixed-rate payer will be forced to take on a replacement swap for the remaining term at a higher rate of interest. They need to he compensated for this cost. Theoretically, this cost will be exactly offset hy the gain the variahle-rate payer will be receiving, **i.e.,** the replacement swap will bear a higher interest rate. This benefit will he passed to the fixed-rate payer as compensation under the early termination.

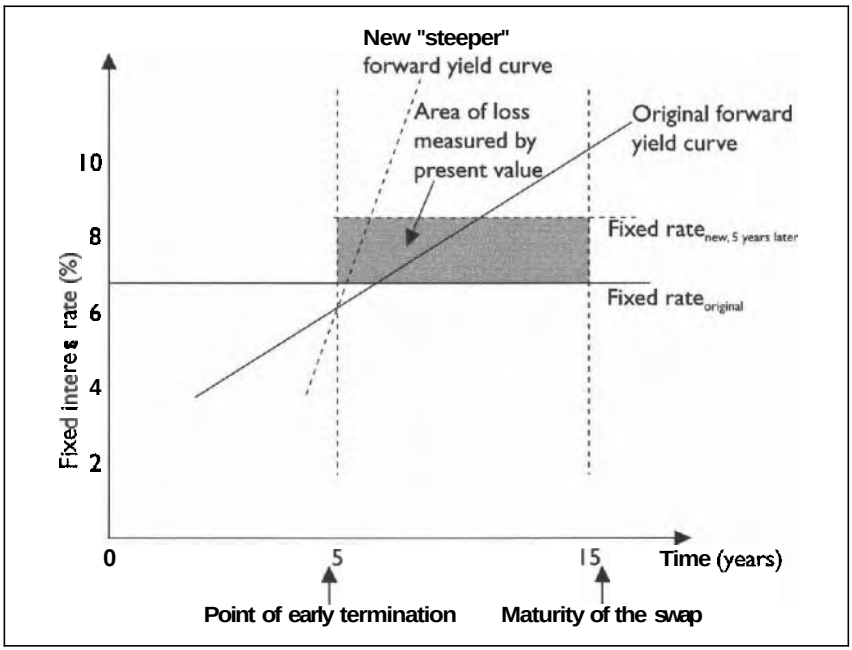
Conversely, as shown in Figure **11.12,** if the forward yield curve is lower at the termination date of a swap (relative to its execution date), the fixed-rate payer will suffer a loss while the variable-rate payer will benefit.

This begs a key question: What market conventions exist for the settlement of loss of an affected party to a swap transaction in the event of an early termination?' To address this question, a key issue has to he considered: Is the termination attributable to the actions of one party – Event of Default (EOD)– or neither – No-Fault?

---

[1] **The International Swap Deals Association (ISDA) recognizes four distinct components to the settlement of an early termination swap: (a) Loss of Bargain, arguably the largest of the components in most cases of early termination; (b) Unpaid Amounts; (c) Elapsed Period Amounts; and (d) Interest, Costs and Expenses. The above text only deals with the loss of bargain.**

Figure 11.11 Loss of Bargain to variable-Rate Payer: Steepened Yield Curve

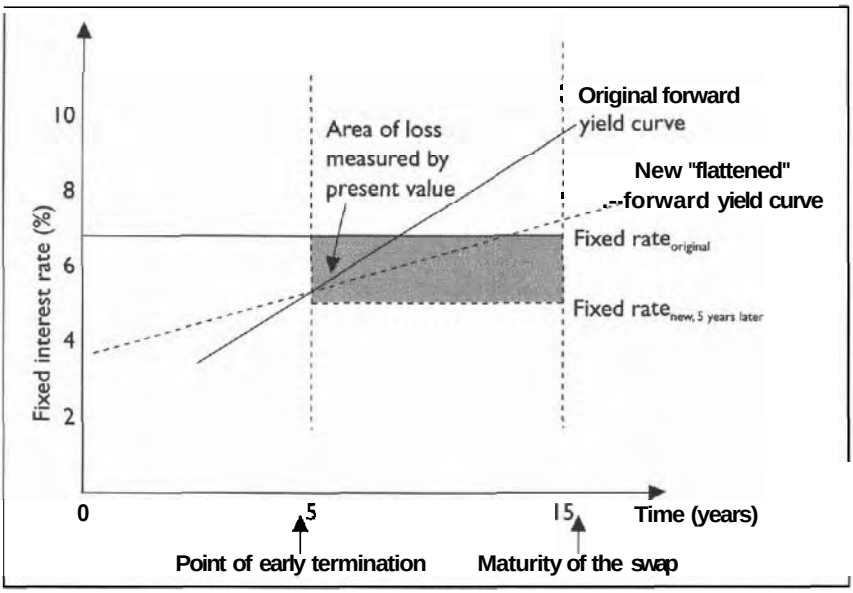


A distinction has traditionally been made between a termination that is attributable to an EOD and one that is No-Fault. Borrower defaults are well defined in standard common terms agreement (CTA) and/or individual lender facility agreements; an EOD by lenders, in contrast, would be caused presumably by a breach of contract, i.e., a failure to perform under the terms of the hedging agreement and/or loan.

Conversely, a No-Fault termination, as the name implies, would occur under the following, or similar, circumstances:

- Subsequent to the extension of a loan by a group of lenders, an engineering, procurement and construction (EPC) contractor fails to complete the facility as per specifications and makes a contractual payment of liquidated damages (LDs) to the project vehicle. The lenders, through provisions in the finance documents, capture and apply the LDs to a partial payback (buydown) of their loan. Given that the loan principal has been reduced by the buydown, the notional principal in the swap would have to be adjusted partially to coincide with reduced schedule of loan principal.
- After the project is commissioned successfully, some key provision within the finance documents is found to be illegal, requiring lenders and bor-

Figure 11.12 Loss of Bargain to Fixed-Rate Payer: Flattened Yield Curve



rower to terminate the CTA and/or their facility agreements. The accompanying interest rate swap would have to be wholly terminated.

- During its operating period, a facility is destroyed totally by fire. Project management and/or lenders elect to discontinue the project. Pursuant to the finance documents, the lenders loans will be paid back by insurance proceeds and the swap unwound.

Typically, market convention under the International Swap Deals Association (ISDA) is to allow for "two-way payments" under either an EOD or a no-fault, early termination situation. This means that the termination amount is determined and this amount is paid from one party to the other irrespective of whom the defaulting party might be. The settlement amount will be determined by reference to market values, i.e. the mark-to-market value.

COMMERCIAL ISSUES

The use of interest rate swaps in Project Finance to manage interest rate volatility is increasingly viewed as an important element in these deals. The project vehicle's negotiation of such a hedging arrangement will introduce a number of issues that will need to be addressed in the financial documents. Some of these issues relate to CTA; the others, to the inter-creditor agreements.

Identity of the Swap Counter-Parties

When setting forth the requirement for hedging arrangements in a CTA, the issue will arise as to who should provide the interest rate hedge(s) to the project vehicle. As a matter of principle, it is more desirable for the lenders to the project to provide the hedging arrangements. This avoids the complication of involving a different set of parties in the transaction – a complication that almost certainly lengthens the time required for negotiations.

Resolving Conflicts of Interest Related to Pricing of Services

If the lenders are also the hedging counter-parties, a conflict of interest may arise in relation to the pricing of the relevant swap agreement.[2] As lenders, the aim would be to enable the project vehicle to secure an interest rate swap that is competitive. As hedging counter-parties, the interest, presumably, is in maximizing profit. Consequently, procedures are set forth in the CTA to ensure that the swaps are priced on a reasonable basis. One solution may be for the parties to agree to rely on a screen-based rate, if available, at the time the swap is put into place, or a reliable service provider willing to issue a swap quote based on pre-agreed parameters. There are other mechanisms, however. The parties, for example, might agree to permit the project vehicle to gather swap quotes from two or more reference banks, with the hedging counter-parties binding themselves to price their hedge services at a level no higher than the calculated average of the quotes gathered.

Requirements for Complete or Partial Hedging

The extent of hedging required by the lenders will depend on four factors?[3]

[2] This also has a counter-argument: from the lender's perspective, the primary concern is to ensure the financial viability of the vehicle. To this end, it is also in the bank's interest to ensure that financial costs are reasonable. There is no point setting such a high rate that the borrower is unable to service. Screen-based rates are never available for Project Finance swaps: such prices are only suitable for spot start, vanilla deals in generic maturities.

[3] Some lenders would disagree with this. They would argue that there is really only one factor a lender is concerned with: the ability of the project to withstand upward movements in interest rates and then related to this, the maximum interest rate which can be borne before the project economics are destroyed. Moreover, they would argue that banks never take a view on interest rates and similarly never allow a company to take an exposure on rates based upon their or its view. The only parties who take views on interest rates are the traders whose job it is to do as such!

- Internal policies of each member of the banking syndicate that is providing the debt facilities to the project.
- The robustness of project economics.
- Lenders' view of the current and future course of the business cycle.
- Judgements regarding potential changes that may occur in the economic climate over the life of the project.

Many lenders have strict policies that limit their ability to be flexible in setting forth a project vehicle's hedging obligations. A lender's internal lending policies, for example, may require conditions on the borrower that force it to be fully hedged on all of its loans during the construction period. The purpose of this constraint generally is to limit the potential for cost overruns among borrowing clients. By the same token, policy guidelines may prevent the lender from giving the borrower more than minimal flexibility with regard to its hedging obligations during the project's operating period. The purpose here is to limit the borrowers' vulnerability to interest rate volatility over the very extended loan tenors that typically characterize Project Finance.

Some lenders, of course, do not operate under such internal guidelines and are able to exercise a great deal more judgement when setting forth conditions related to the hedging requirements of a borrowing customer. Nonetheless, if such lenders consider interest rates to be at a favourably low level for the project, or if they project that rates will rise, they may require all, or a substantial portion of the loans to be hedged at the outset. The same judgement would apply if the project economics indicate that even a small rise in interest rates would lead to the project becoming economically unviable. Only in cases where the long-term outlook is stable, or the project economics are particularly robust, will the project vehicle be granted flexibility by such lenders with regard to the timing and magnitude of its hedging contracts. Even in these cases, there would be some constraints imposed. For example, the credit agreement might require hedging to be put in place if interest rates rise by more than a set percentage. Alternatively, the project vehicle might be given the option of entering into hedging arrangements within given parameters or purchasing a cheaper "swaption" permitting it to enter into a swap in the future at a predetermined price.

Timing of Swap Execution

Requirements imposed by lenders in respect of timing of swap execution will vary depending on their internal policies, project robustness, interest rate outlook and other similar concerns mentioned earlier. The most conservative position is to require the project vehicle to execute its swaps at

financial closing, even though it may take several months thereafter before the first disbursement is made. Where economic and project fundamentals are favourable, however, many financial institutions may permit swap execution to be deferred until first disbursement.

Monetary Impact of Hedging Contracts on Debt Service Cover Ratios

If the project vehicle is required to enter into an interest rate swap, the lenders will need to consider its impact on debt service cover ratio (DSCR). An issue that occasionally arises is the question of whether variable interest payable under the CTA, or the fixed rate of interest under the swap agreement, should be taken into account in determining DSCRs. A second potential negotiation involves the discount rate used to determine the PV of project revenues for purposes of calculating the loan life cover ratio (LLCR). The focus in this case is whether the discount rate should be set by reference to the current short-term variable interest rate or the long-term fixed interest rate that is memorialized in the CTA.

Other topics to be addressed may consist of whether out-of-the-money positions on hedging contracts (especiallythose that would oblige the project vehicle to make a payment to the swap counter-parties if the swap was immediately terminated) should be counted in the gearing ratios. The issue becomes especially relevant if the borrower is required to maintain a minimally acceptable debt:equity ratio by the terms of the CTA.

Definition of LIBOR for Loan and Swap

For purposes of defining swap provisions in the CTA, LIBOR is often defined to be the ***offered rate*** that appears on a particular screen page of an information service, such as the Dow Jones Telerate Page 3750, or the average of the rates that appear on such a screen page (e.g. the average of the offered rates that appear on the Reuter Money Market Service LIBO page). As per the ISDA definitions, LIBOR under a swap is always defined as that on the Telerate Page 3750, the same as Reuters Page LIBO. This is the BBA USD Libor reference rate. If the borrower's all-in cost of the loan and the swap is to equal the loan margin and swap fixed rate, the borrower must ensure that the same screen will be used for the swap and loan.

It is also important that the rate setting occurs at the same time on the same day and, if appropriate, that the same rounding convention is used. For example, lenders like to round up to the next higher $^1/_8$, while the swap

convention is to round to the nearest $^1/_{1,000,000}$ of 1%. If LIBOR is determined by the screen service to be 5.375%, the lenders will round that up to 5.5% for purpose of the CTA. Hence, on a US$100 million loan for a 180-day interest period, the swap counter-party will be paying the borrower 5.375001% per annum on the notional principal, while the borrower will be required to pay the lender(s) 5.5% per annum under the loan, a difference of 0.124009%, or US$62,200.

Loan Repayment and Acceleration

The same conventions that can affect the length of loan interest periods can also be expected to affect the dates when the principal of a Eurodollar loan will be due. Therefore, when it hedges an amortizing loan with a rate swap, a borrower and its counsel must carefully examine the loan and swap documents to avoid unintended mismatches between the loan's principal amortization and the scheduled adjustments of the swap's notional principal.

In addition, any provisions relating to loan prepayments should be considered in light of the existence of the swap. Thus, the EOD under the loan and swap agreements should be compared, and other grounds for terminating the swap or reasons for prepayment of the loan should be considered together at the time the two agreements are negotiated.

Participation in Inter-Creditor Agreement

An issue that invariably arises is whether the counter-parties should be entitled to share the same security with the lenders. If they are to be secured creditors, the inter-creditor arrangements should deal with the priority ranking of that security and should set out the circumstances under which that security can be enforced. Current market practice, particularly when lenders and counter-parties are from the same institutions, is that security is shared pari passu.

Voting Rights

Where the hedging counter-parties are to share in the lenders security, the inter-creditor arrangements should state whether the counter-parties are entitled to voting rights when the lenders are asked to take decisions on enforcement and related issues. The current market practice is that counter-parties do not have voting rights. The rationale for this appears to be that as market conditions change the counter-parties could, at the time of a vote, in fact be debtors and not creditors of the project vehicle.

Transfer of Interests

The credit agreement will normally contain provisions controlling the transfer of a counter-party's interests under a hedging agreement. Where it has been agreed that the counter-party should be a member of the banking syndicate, the credit agreement will usually provide that a counter-party may only transfer its interests to another bank within the syndicate, and that if it ceases to be a syndicate bank, will transfer those interests only according to pre-agreed stipulations.

Other restrictions might be applicable – for example, the counter-party must have a minimum credit rating given by a recognized rating agency.

Review Questions

1. What is notional principal?
2. Distinguish between the three different day counting conventions.
3. What is a roller coaster swap and what is its relevance to Project Finance?
4. Identify as many derivatives as you can that are used to hedge interest rates. How do they differ? In what situations, if any, would these be employed?
5. Why is it that we can apply the economic Theory of Comparative Advantage to interest rate swaps?
6. Explain the step-by-step mechanics in pricing a swap.
7. What step-by-step mechanics are involved in reversing a swap as well as determining "loss of bargain"? In the contexts of reversing a swap pursuant to a steeper yield curve (rising interests) as well as the flatter yield curve (falling interests), identify the party that is likely to be "in the money" and the one that has experienced the "loss of bargain".
8. What kinds of commercial issues arise in the negotiation of an interest rate swap, and how are they typically resolved?
9. Using the data from Table A11.1.1 in Appendix 11.1, calculate the six-month forward rate for period 3.

APPENDIX 11.1

DERIVATION OF FORWARD RATES FROM SPOT SWAP RATES

A spot swap rate is the market yield for a security to a given maturity. We will denote it by R(a, b), where a is the spot swap rate for a time period zero, while b is the ending or maturing point. Thus, **R(0, 5)** indicates the spot rate for a swap maturing in five semi-annual periods: or two-and-a-half years, while **R(0, 10)** is a spot rate for a swap maturing in ten semi-annual periods or five years.

A swap is priced with reference to the forward rates, i.e., the forward rates make up the variable leg of a swap. Spot swap rates differ from forward rates. Although a forward rate can also be generally denoted by the same R(a, b) notation, a in this case is not "time zero" but rather some time in the future. Hence, R(0, **1)** is the spot swap rate for six months, while R(1, 2) is the forward rate six months from now for an instrument that has a maturity of six months.

To derive forward rates for consecutive semi-annual periods over the life of the loan, we need to be equipped with the spot swap rates for those periods. Swaps rates are widely available in a variety of places. Two such sources are Financial Times of London and World Bank website (http://www.worldbank.org/treasury-alm/TRF_Mkt_Data.html).

The World Bank website is used in this appendix to derive forward rates. The spot swap rates are typically available for three months, six months, one year, two years, and annually thereafter up to **30** years. There are no such rates quoted for, one-and-a-half years, two-and-a-half years, etc. Since the loan described in Chapter 11 has a five-year tenor with ten semi-annual payment dates, we need to complete the spot swap rates for all ten payment periods. Specifically, we obtain the spot swap rates for the missing periods by linear interpolation of other spot swap rates, as is shown in Table **A11.1.1.**

Derived this way, we construct a spot swap rate curve for ten periods, depicted in Figure A11.1.1.

Armed with the spot swap rates, we can derive forward rates.

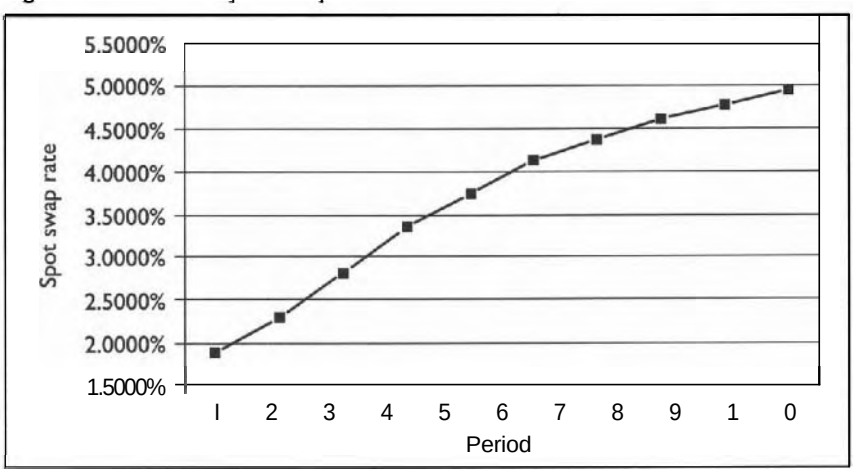
The calculation of the forward rates is based on the assumption that all returns over a given investment horizon are equal. From Table **A11.1.1,** annualized spot swap rate for six months is **1.8813%.** Therefore, one-period spot swap rate, R(0, 1) is one-half of **1.8813%** or **0.9407%.** Similarly,

[1] Throughout this appendix, we will use the convention of semi-annual compounding.

Table A11.1.1 Quoted Spot Swap Rates

Period	Maturity (years)	Notation	Spot swap rate given (%)
1	0.5	R(0, 1)	1.8813
2	1.0	R(0, 2)	2.2875
3	1.5	R(0, 3)	2.8158
4	2.0	R(0, 4)	3.3440
5	2.5	R(0.5)	3.7253
6	3.0	R(0, 6)	4.1065
7	3.5	R(0, 7)	4.3528
8	4.0	R(0, 8)	4.5990
9	4.5	R(0, 9)	4.7658
10	5.0	R(0, 10)	4.9325

Figure A11.1.1 A Spot Swap Rate Curve

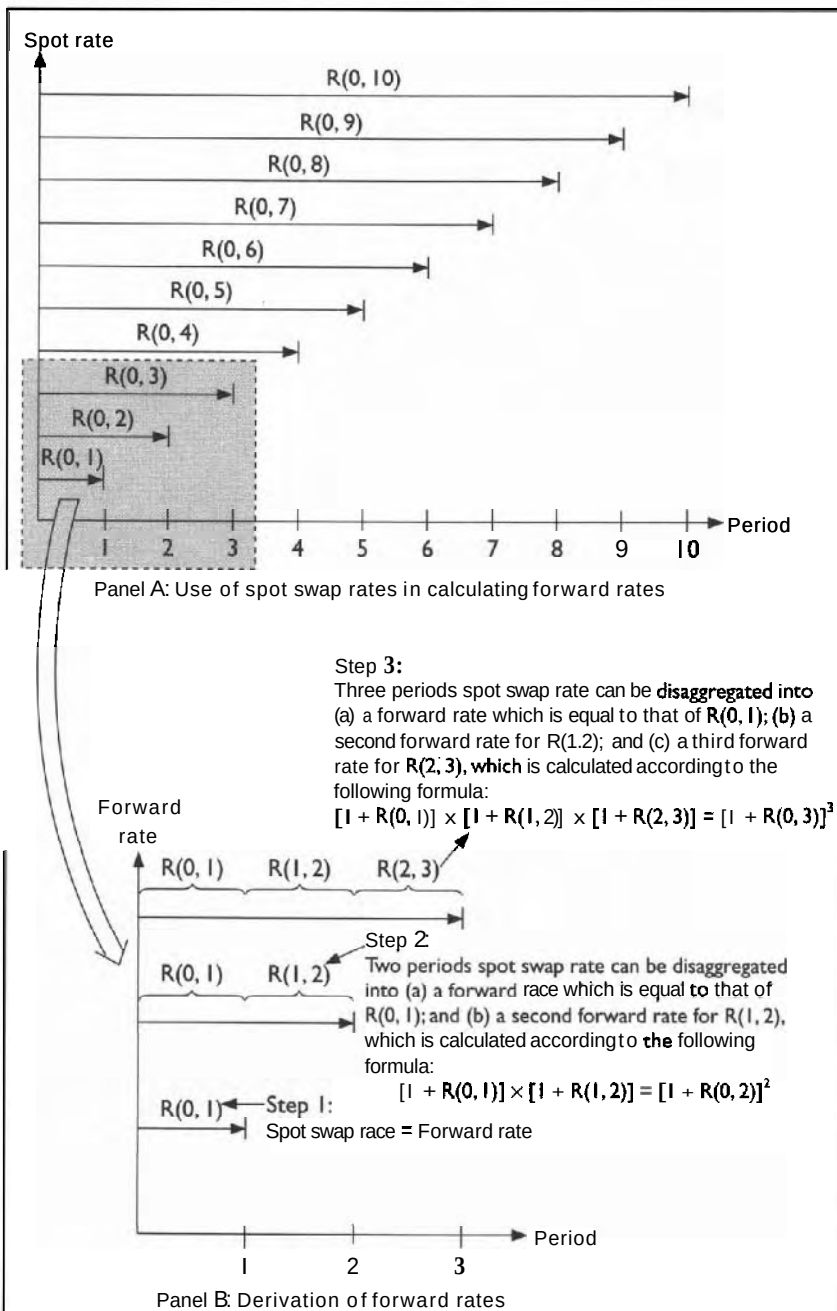


annualized spot swap rate for one year is 2.2875%. Therefore, two-period spot swap rate, R(0, 2) is one-half of 2.2875% or 1.1438% per period.

If an investor has an investment horizon of one year, he could "lock in" his return by investing his money for one-year period. At the end of that year, his investment would have grown by $[(1 + R(0, 2)]^2$, or $(1.011438)^2$, or 1.02301. Alternatively, the investor could "lock in" his return by investing his money for six months and issuing an irrevocable instruction to have his investment rolled over for another six months. In that case, he would obtain $[1 + R(0, 1)] \times [1 + R(1, 2)]$. If interest rates evolve as the forward curve predicts, these two investment strategies should yield the same future

This is demonstrated in Figure A11.1.2.

Figure A11.1.2 Methodology for Derivation of Forward Rates



Thus we can solve for the forward rate R (1, 2) as follows:

$$[1 + R(0, 1)] \times [1 + R(1, 2)] = [1 + R(0, 2)]^2$$
$$1.009407 \times [1 + R(1, 2)] = 1.0230058$$
$$R(1, 2) = \frac{1.02301}{1.009407} - 1 = 0.013476$$

Therefore, annualized six-month forward rate is 2 × 0.0134726 or 2.69452%.

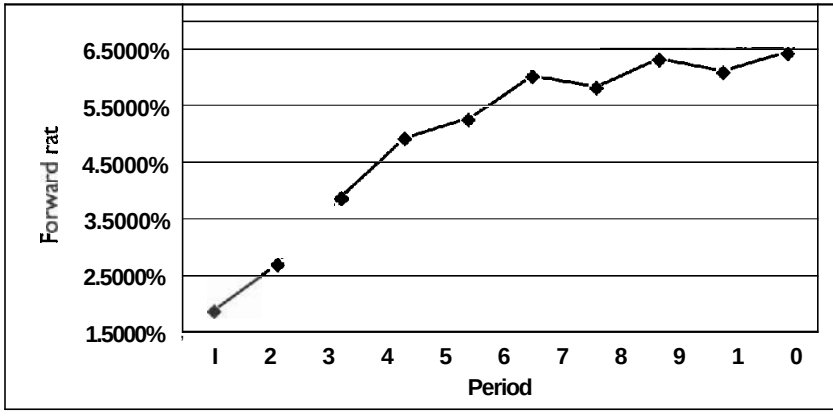
We continue the process to complete the fifth column of Table A11.1.2 and construct Figure A11.1.3, the Forward Yield Curve.

Table A11.1.2 Annualized Spot Swap and Forward Rates

Period	Years	Notation	Annualized spot swap rate (%)	Annualized forward rate (%)
1	0.5	R(0, 1)	1.8813	1.8813
2	1.0	R(1, 2)	2.2875	2.6945
3	1.5	R(2, 3)	2.8158	3.8764
4	2.0	R(3, 4)	3.3440	4.9370
5	2.5	R(4, 5)	3.7253	5.2574
6	3.0	R(5, 6)	4.1065	6.0235
7	3.5	R(6, 7)	4.3528	5.8365
8	4.0	R(7, 8)	4.5990	6.3311
9	4.5	R(8, 9)	4.7658	6.1047
10	5.0	R(9, 10)	4.9325	6.4394

As mentioned previously, these forward rates are those that are used to calculate the PV of interest payments due under the variable leg. The interest rate associated with the fixed leg will be derived hence, since it is the rate, which equates the PV of all payments under the variable leg with the PV of all payments under the fixed leg of a swap.

Figure A11.13 A Forward Yield Curve



chapter

12 SECURITY

INTRODUCTION

Commercial lenders, including project lenders, intend to derive a fair return from loans that have been extended to their borrowing customers, and ultimately, to ensure the recovery of the related principal. In theory, this sounds easy, but in practice, it is not! The extended tenor of project loans, in particular, creates considerable uncertainties in recovery. Hence, to shift or allocate the risks associated with recovery of loans, lenders will require the borrower to provide adequate security against loans.

Security is defined as protection or assurance and often used interchangeably with collateral. Terms such as security and collateral refer to an obligation, mortgage, hypothecation, pledge, assignment, deposit, charge or lien, etc. created by a borrower in favour of the lenders over its assets. In effect, security "assures" the payment of a debt by permitting the lender access to certain borrower's resources if the latter fails to perform under the loan.

Table 12.1 illustrates the range of assets, rights and ownership interests over which lenders create security, the legal instruments involved (discussed in more detail in this chapter), and the time periods when the security is most relevant. Security that is important to the construction period, as was discussed in Chapter 10, consists of the assignment to lenders of the engineering, procurement and construction (EPC)contract and the sponsor's construction support package.

Security that is relevant throughout the entire loan life, overlapping both the construction and operating periods, includes the following:

- Land, plant, equipment and all other tangible, as well as intangible, assets of the borrower.

Table 12.1 Typical Components of a Security Package

Security supporting construction period	Security relevant to entire loan life	Other security
Assignment	**Legal Mortgage**	**Assignment**
• EPC Contract	• Leasehold landlaffixed property	• Political-risk insurance
– Parent or third-party guarantees	**Hypothecation**	– Additional forms of sponsor(s) support
– Liquidateddamages	Movable assets	
– Surety bonds or, if applicable, standby letter of credit (UC)	**Assignment**	
• Sponsor's completion guarantee	• Project contracts	
• Equity support agreement	– Implementation agreement	
• Related standby L/Cs	– Off-take agreement	
	– Concession agreement	
	– Resource supply agreement	
	– Operations and maintenance contract	
	– Related standby L/Cs	
	– Permits, licences, authorizations	
	– Intangible assets	
	– Inter-creditor agreement	
	– Insurance(s)	
	– Direct agreement(s)	
	Pledge	
	• Shares	
	• Negative pledge	
	• Fixed charge/floating charge	
	• Project company accounts	

- Project documents, identified in Chapter 5, as well as all the finance documents discussed in Chapters 8–10.[1]

[1] The finance documents will contain numerous provisions that relate to lenders' security such as (a) creation and maintenance of security interests; (b) designation of a security agent to hold security on behalf of lenders and, if necessary, carry out its enforcement; (c) control over the borrower's annual operating budgets; (d) mechanical provisions related to cash waterfall and the funding of accounts; (e) stipulations related to the maintenance and release of liens; (f) representations and warranties, as well as extensive covenants found within the common terms agreement; (g) remedies upon an event of default; and (h) miscellaneous provisions related to dispute resolution and arbitration.

- Direct agreements[2] entered into with the project vehicle and each of the contract counter-parties, enabling the lender to step in as and when the project runs into trouble to: (a)operate it for purposes of getting their debt repaid; and/or (b)sell the project wholly or piecemeal.
  Licences, permits and authorizations issued by regulatory and other authorities.
- Negative pledges.[3]
- Sponsor's shares, or other certificates, of stock ownership issued by the project vehicle if organized as a corporation; or partnership interests, if organized as a partnership.
- All insurance(s).

Other security required by lenders may include political-risk insurance, as per lenders' requirements, to provide cover to project loans against designated political risk; or at the discretion of the sponsor(s), to protect its equity infusion(s) from similar risks. As discussed in Chapter *6*, this cover provides protection to loan and/or equity infusions against such perils as war, insurrection or revolution; confiscation, expropriation and nationalization of assets; and non-conversion of currency.

Purposes served by the creation of security by the lenders over the borrowers' assets include the following:

- Prevents another party, including a third-party lender, from creating security over the same assets.
- Prevents unsecured creditors from taking action that is disruptive to the project vehicle and thereby insulates the secured lenders from their actions.
- Blocks the ability of the project vehicle to dispose of secured assets without the lenders' consent, ensuring thereby that assets important to the project are available for normal operation and/or are not disposed of frivolously at prices which do not permit replacement.
- Confers to the lenders the option to take over the construction of the facility, or its operation, if the project's substandard performance threatens the ability of the project vehicle to repay its loans, as scheduled.

Direct agreements are sometimes referred to as letters of acknowledgement, consents to assignment, or simply consents as is the case in the US.

[3] A negative pledge is an agreement between the lenders and the project vehicle to the effect that the latter will not create, directly or indirectly, any security interest, lien or encumbrance in its assets for the benefit of another lender. A negative pledge does not provide legal protection to the lender over competing claims to security. It also does not provide priority of security claim over others, as would he the case with subordinated debt, nor does it confer rights to foreclosure.

Bestows upon the lenders the option to sell the collateral in a foreclosure for recovery of loans.

The first three purposes are examples of the defensive attributes of security; while the last two are offensive in nature. With regard to the offensive options, lenders generally do not expect to be able to recover the full value of their loans pursuant to a step-in, or foreclosure sale. High transaction and other soft costs associated with project loans make it extremely unlikely that lenders will recover their loans in full. Practitioners for this reason claim that true value of security lies in its defensive attributes. There are occasions, nonetheless, when lenders rely on the offensive options. As an example, the direct agreements confer upon the lenders the ability to take over the construction or operation of a project if the project is mismanaged. This is clearly a case where lenders may feel that the chances of recovering their principal would be greatly enhanced by replacing the sponsor(s) with a designee under the terms of the direct agreements. With the project's viability restored, the lenders would have the option of auctioning the project to a group of interested buyers. The latter option, however, is not particularly helpful if the project runs into difficulty for other reasons, such as an event of default (EOD) attributable to the host country government or other government-owned major project participant. In this particular case, if the project is important to the country's development, the defensive attributes of the security often confer upon the lenders a bargaining position more valuable than any offensive option available otherwise.

To protect themselves as fully as possible, lenders and their legal advisors design a comprehensive security package that preserves and optimizes the offensive and defensive options available, and enables lenders to enforce security jointly, severally or in different ways, as the situation may require.

In this context, the objectives of this chapter are the following:

- Understand what is meant by the use of such terms as creation, perfection and enforcement of lenders' security interests.
- Identify overarching issues and principles related to the creation, perfection and enforcement of security, particularly in cases where the governing law of the loan agreement(s) (governing law) is different from the law of the host country where the project vehicle will operate the project (host country law).
- Discuss the reasons why cross-border lenders rely on English or New York law to govern loan and other finance documents, irrespective, generally, of the identity of the host country where the borrower is located.

- Describe the more common instruments available in developing countries to create security over the project vehicle's assets.

Augmenting the discussion, Appendix 12.1 discusses direct agreements in considerable detail, their form and structure, as well as commercial and legal issues involved in their application.

OVERARCHING ISSUES

Given the absence of universally applicable security laws, one of the primary concerns of project lenders is the selection of governing law and, in this context, issues related to the creation, perfection and enforcement of their security interests in the project. Generally, for projects undertaken in England or the US, the governing law of the loan (and other finance documents) and the governing law of the place in which the project vehicle is intended to operate is one and the same. No conflicts are involved. Based on existing practices in the US, however, New York banks and even other banks in other states may prefer to use New York State law when participating in a Project Finance transaction that is located in a state other than their own.

If the project is located elsewhere, unless there are compelling reasons to the contrary, cross-border lenders will require that the law of New York State or England be applied to the loan agreement(s) and most, if not all, the finance documents. This is because commercial law in these two jurisdictions is fully developed and protective of the rights of lenders. Moreover, there exists within the courts of these two jurisdictions, a well-documented track record of previous rulings deemed by lenders, as well as sponsors, to be fair and equitable. This provides predictability and stability to the parties, and thereby minimizes risks of an unfamiliar jurisdiction and reduces transaction costs.

Where governing law and host country law diverge, conflicts may arise related to the creation, perfection or enforcement of security. Before embarking further on this discussion, it may be beneficial to review a few definitions.

Generally, security is ***created*** when certain agreements evidencing intent to create a lien are entered into between the project vehicle, lenders and, if appropriate, the security agent. It is ***perfected*** at the time the instruments, or agreements, that create security are registered, or recorded, in the appropriate registry and stamp duties or fees are paid to the fisc. Security is ***enforced*** at the time the security holder, generally the lenders, exercises one or more remedies that may be available to them pursuant to a breach by the project vehicle of the loan agreement.

A number of considerations exist in respect of creating security over assets, some of which are summarized in Box 12.1.

First, in a Project Finance context, lenders will attempt to create security on all project assets, particularly the project agreements, since these define the commercial outlines of the project, its *raison d'etre* as it were. Project documents are key in other respects as well. For example, they define the degree of predictability that the project vehicle will have in respect of its risk sharing and, in many cases its revenues and expenses.

Second, the corporations, statutory bodies or individuals, directly or

Box 12.1 Selected Issues in Creating, Perfecting or Enforcing Security

In some legal systems, security interests can be created over all assets including intellectual property, whereas in others, security may be created over a much smaller subset of assets. In some countries, notably many common law countries, security can be created over all assets including those that do not yet exist, i.e., future assets. The same jurisdictions may additionally provide for security over assets that are generic, i.e., unascertainable or indistinguishable from one another, and which do not have to be in the hands of the lenders for perfection; in other systems, security may be taken over such assets only by physical possession. In some countries, creation of security is extremely cost-efficient, whereas in others it is quite expensive.

In some countries, the value of security relative to the debt may be unlimited, whereas in others, the value of security cannot be excessive or must be fixed in local currency terms.

In some countries, enforcement may only be done through court involvement, whereas in others, the intervention of the courts is unnecessary. Some countries provide the lenders with the rights to enforce their security through possession, enabling them, for example, to operate the project through a designee; in others, more limited forms of enforcement may be permitted such as a judicial sale. Still other legal systems impose obligations on the lenders to take steps to ensure that the sale of assets is done at a fair price.

While loan agreements are subject usually to the governing law chosen by the parties, the laws of the host country will determine the security that can be enforced against assets located in the host country as well as the remedies that are available. The loan agreement and offshore security are buttressed usually by a number of government consents, assurances or acknowledgements, such as (a) waiver of sovereign immunity, particularly in cases where government participation, through central government or its agencies, is material to the well-being of a project; (b) consent to the use of a foreign law for purposes of defining loan terms and conditions, including available remedies; (c) assurance that rulings by a foreign court will be observed by the host government and/or its agencies; and (d) assurance that rulings by foreign tribunals under dispute arbitration clauses will similarly be observed.

indirectly involved in execution of these project documents must be authorized to do so by their respective charters and governing bodies. If a given document such as the implementation agreement, concession agreement, off-take agreement or resource supply agreement is not executed by an institution duly empowered by charter or governing body, the contract is invalid and its assignment to the lenders is void. The same result occurs if the individual that executes a contract on behalf of his or her institution is not properly authorized to do so. Depending on the host country, similar preconditions may apply to the origination of other project vehicle assets, such as:

- The letter of intent (LOI), executed between the ceding authority and project vehicle, if the project originated through formal solicitation.
- Memoranda of understanding (MOU) if the project originated through an unsolicited process.
- The direct agreements that, aside from their stipulations in respect of step-in rights, also record the consent to assignment by the various counter-parties to the project documents.
- All other consents, permits, licences or authorizations issued by the host government agencies.

Lenders must review these documents carefully to determine that each has been issued by enabled institutions or statutory bodies, and executed by authorized individuals within those bodies, before the creation of security over them.

Third, as mentioned previously, restrictions may exist in a given host country in respect of the types of liens recognized. Some countries either do not recognize some of the legal instruments that are identified in Table 12.1, or apply a different legal understanding in respect of the effects of an instrument.

Common law countries,[1] for example, permit liens on all of the assets of a company, present and future. The floating lien, as it is referred to, permits security to be extended to all assets extant at the time the loan agreements are signed as well as those subsequently acquired. In these jurisdictions, no administrative requirement is imposed on the borrower to

[1] **'Common law refers to the statutory and case law background of England and the American colonies before the American Revolution. Common law countries are those countries, primarily former colonies of Great Britain, that have adapted this type of jurisprudence in their secular court systems. See Black, Henry, Nolan, Joseph R. and Nolan-Haley, Jacqueline M., *Black's Law Dictionary*, sixth edition, West Publishing Company, 1990, p. 276.**

document ongoing purchases of equipment, sales or other dispositions, although covenants in the financing documents may require lenders' consent to undertake any of these activities.

Many common law countries also permit execution of a floating charge to be executed over assets that are highly variable and/or unascertainable such as receivables, inventories, spare parts and cash-in-bank(s). The floating charge crystallizes into a fixed charge at the time the lenders take an enforcement action. Before this point, the lien merely floats. During its floating period, the project vehicle is free to sell, or otherwise dispose, of the collateral in the normal course of business, making the lien applicable only as and when it is crystallized by an enforcement proceeding.

By contrast, civil law[5] countries, including many in Europe, South America and Francophone Africa, do not recognize the concept of the floating lien. The lien may cover assets that have been bought, or are on order, but not future assets. Moreover, many do not provide for security in the form of a floating charge over variable and/or unascertainable assets.

Fourth, there are also other kinds of problems. A legal instrument, such as an assignment, may be widely recognized in both common and civil law countries but its application to selected assets may not be possible in all cases. Examples of instruments that are not ubiquitously available to all assets include:

- Assignment of specialized contracts, such as a concession agreement, where such assignment is not permitted either because of (a)strict laws in the host country that define the process by which a concessionaire can be awarded the rights to build or operate a particular project; or (b)the manner in which one concessionaire can be replaced by another.
- Assignment of permits and consents, unavailable for similar reasons as above, possibly because permits and consents are valid only for operators selected on the basis of defined public processes in the host country and not to third parties, such as lenders.
- Mortgage on land, where statutes in the host country expressly forbid domestic borrowers to create security on land to the benefit of foreign lenders.

[5] Ibid, p. 246. Civil law, or Code Civil is the code which embodies the civil law of France as promulgated in 1804. When Napoleon became emperor, the name was changed to "Code Napoleon", by which name it is still referred to although its official name is Code Civil. A great part of the Civil Code of the State of Louisiana in the US as well as a number of countries in Europe, South America and Francophone Africa is derived from the Code Civil.

- Mortgage on a long-term lease, if the creation of a security interest on a leasehold property is not specifically recognized.

Similar considerations apply to the perfection of security.

Security, if it is not properly perfected, loses some of its potential to be enforceable upon default. For this reason, lenders must be aware of different requirements for the perfection of security in the host country. In the absence of appropriate perfection of the lenders' claims on the security, it may be impossible to prevent others from creating superior, or overlapping, liens.

In this respect, the procedures related to the recordation of liens differ substantially from country to country, and may be much more tenuous in some, time-consuming in others, and/or generally involve the payment of significant duties under the fiscal regime. Once security is created in common law countries, the lenders, or security agent, will have these recorded at an appropriate public registry. For example, a legal mortgage over real property (land, plant, and other fixtures) may require formal recording at the relevant land registry. A pledge over shares, in contrast, may need recording with the joint stock registry, etc. When security is properly perfected, it serves as a constructive notice to third parties that are willing to become creditors to the project.

Under civil law systems, security is perfected through notarization by a notary public. The notary translates the whole agreement into the official language of the host country, if, as an example, the agreement is to be executed in English. After the notarization process is completed, the security enters into public record and, as necessary, becomes admissible in evidence. Significant fees are charged for this service.

An issue specific to recording of security is that there may be cross-currency risks associated with the way in which liens are registered in some countries. For example, in some civil law countries in Latin America, liens may have to be denominated in local currency even though the amounts borrowed are in foreign currency. The specific requirement may be for the lien to be recorded at the local currency equivalent of the dollar loan(s) as of the date of registry, or the date the loan agreement was executed. In this case, a subsequent depreciation of the local currency over the tenor of the loan, relative to the dollar, may have unpleasant consequences for lenders. Pursuant to an enforcement action that involves the sale of the project, or its assets by the lenders, it might mean that the value of the security in local currency terms would be less than the outstanding dollar obligations.

Moreover, restrictions in the host country may exist curtailing the abil-

ity of lenders to perfect, as well as hold, their security in a collateral trust managed by a security trustee. A collateral trust has the effect of streamlining the security perfection process and reducing transaction costs since it eliminates the need for each individual lender to create and perfect its own security interests. Another advantage of a collateral trust is that the individual lenders will change over time as and when each transfers its participation to other lenders. Quite simply, the trust in this respect obviates the need for each substitute lender to perfect its own security. Still another advantage of the use of the trustee is that it allows all lenders to enforce their security, as discussed below, through one common agent.

Security, in the broadest sense, is enforced in either of two ways: (a) foreclosure through possession; and/or (b) sell-off of the project vehicle or piecemeal liquidation of its assets. Project lenders have to exercise due diligence as to the enforceability of security in the host country because jurisdictions tend to differ largely in this regard. For example, while developed jurisdictions like the US and England have very advanced infrastructure for enforcing security, certain jurisdictions, transition economies of Eastern Europe and Central Asia in particular do not appear to have developed practices in this regard.

Among the enforcement measures that are important from the project lenders' perspective, the following are noteworthy [Section H. *25*, page *557*]:

> Foreclosure by possession. If a project becomes tcoubled, project lenders will consider the option of taking over the management of the company assuming, of course, that foreclosure by possession is permitted in the host country, and direct agreements permit the lenders to take this action through well-defined step-in rights. Possession of the project vehicle and its assets may be desirable under certain circumstances because it provides lenders with the opportunity to operate the project until their loans are repaid. However, Vintner concludes in his 1998 edition of Project Finance:
>
> > ... the step-in rights and purposes of security are easier to achieve in some countries than in others. English law, for example, has long allowed secured lenders to appoint a receiver and a manager over a company's business and assets —harged with the responsibility of running the business with a view to repaying any amounts due to lenders. Other countries may not permit this remedy because it does not exist in that jurisdiction, as is the case with many European countries. Alternatively, the remedy may not be permitted because the host country has a bankruptcy procedure that prohibits secured creditors

from running a debtor's business for their own account as is the case with Chapter 11 proceedings in the United States.[6]

Indeed, Chapter **11** proceedings can provide a borrower with a temporary stay during which a lender may not enforce remedies. US lawyers generally structure around this by taking stock pledges "up the chain" beginning with the shares of the borrower and proceeding up through any intermediate shell companies to a level where the share pledge would be given by an entity with sufficient business interests and assets such that it would be unlikely to be placed into a bankruptcy proceeding. If the borrower seeks protection under Chapter **11** proceedings, the lenders can enforce the stock pledge by taking control of the borrower with the intent to withdraw the Chapter **11** proceedings.'

- Foreclosure by sale of project vehicle **or** its assets piecemeal. The critical issue here is whether the lenders will be permitted in the host country to enforce the security in order to conduct an unencumbered sale of the project vehicle or its assets. In many countries, this is simply not possible. For example, there may be a bankruptcy procedure in effect that has to be followed, the culmination of which involves an intervention by the courts in the sale of assets. Another problem, especially with infrastructure projects, is that there may exist certain restrictions on the ability of the lenders to transfer their rights to a third party. Obviously, any material limitations affecting the lenders' transfer of rights has the effect of severely curtailing the value of the collateral.

  Actions that need to be taken by the lenders in order to enforce the lien in the host country may also have important time, cost or procedural requirements. In some countries, enforcement may take years such as in the case with a number of countries in Asia and Africa. Courts in other countries may impose a different obstacle. For example, they may permit only one remedy to foreclosure, namely, a public auction to sell the assets. In still others, there is also the priority of hidden, or statutory, liens to consider. Priority rules for liens, including hidden liens, must be clearly understood. Certain statutory claims will rank ahead of lenders' liens irrespective of their perfection. In many, if not most countries, these include government claims to tax and employee claims to salary as well as other payments due from the borrower.

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[6] Vintner, Graham D., Project *Finance*, second edition, Sweet & Maxwell, 1998, p. 150.

'Incidentally, this is not an issue that is dependent on choice of US versus English law. In an English law governed transaction, even a minor connection with the US (a US lender, lending office, borrower, or security account held in the US) may allow a borrower vehicle to seek protection under the US bankruptcy laws.

For security to be effective in such a case, legal due diligence conducted by the lawyers in respect of the reconciliation of laws, among other matters, carefully considers the following basic principles:

- While the loan agreement and other finance documents may specify New York State or English governing law, host country law will be relied upon generally for the creation of security for certain types of assets. This includes the project vehicle's real property (land, plant and other fixtures); movable property that is ascertainable (trucks, automobiles, computers); movable property that is not ascertainable (inventories, spare parts, cash); sponsor's ownership position (shares, partnership participation certificates); and rights under contracts (project agreements, permits, consents, authorizations), commonly referred to as onshore assets.

  If the project has additional assets that are located outside the host country (offshore assets), security over those assets must be created under the laws of that country. Examples of offshore assets are deposits located in current accounts outside the host country.
- Security is perfected under the laws of the country selected to have jurisdiction, namely:
  (a) Security created under host country law would require perfection following the required formalities of that country.
  (b) Security created under the laws of any other country would require perfection by observing the formalities appropriate to that jurisdiction.
  (c) The loan agreement, or any other finance document, domiciled under the laws of New York State or England, would require recording in conformance with formalities set forth in either of the selected jurisdictions. To permit itself, or any of its agencies to be sued in foreign court in the event of a breach, government will consent to the use of a foreign law in the loan agreement, a waiver of sovereign immunity, and an explicit promise to abide by judgements that are rendered by the foreign courts as well as tribunals selected to arbitrate any disputes, etc.
- To ensure the validity of their security, lenders will conduct a thorough review of its enforceability. Generally, this review consists of legal opinions rendered by the following parties:
  (a) Lenders' local counsel in the host country where the project is located.
  (b) Lenders' counsel for the money-centre jurisdiction under the law of which the loan agreement and other similar documents are governed.

(c) Offshore counsel in the jurisdiction in which the owner of the project vehicle is incorporated.

There may he other opinions as well, including:

(a) Government's legal advisor, e.g. the Attorney General (AG) or the ministry of law.

(b) External and internal counsels of the EPC contractor.

HOST COUNTRY INSTRUMENTS USED TO CREATE SECURITY

The discussion in this section focuses on the instruments generally available in jurisdictions other than New York State or England with which to create security in a Project Finance deal. The generalizations are more likely to apply to common law than, say, civil law countries where the differences among jurisdictions in respect of security are held to be much greater.

Generally, it is possible in any host country to create some security over (a) real (immovable) property; (h) movable property; (c) project documents entered into by the project vehicle; and (d) shares of the project vehicle. As discussed previously, floating lien over future assets frequently represents a problem. Another common problem, applicable especially to non-ascertainable movable assets, is the absence of a floating charge that "fixes" or crystallizes upon enforcement. Moreover, a special difficulty common to many jurisdictions is the inability under local law to create security over intangible, or intellectual, property. However, a legal framework for the protection of intellectual property may be provided by adherence to international agreements regarding the protection and registration of intellectual property rights.[8]

Mortgage [Section B. 1(a)(i), page 531]

Table 12.2 illustrates the differences between a legal mortgage and an equitable mortgage. Lenders normally will create and perfect a first priority mortgage or pledge over all of the project's real assets, e.g. land that is owned or leased, plant, fixtures and other immovable property. The instrument used for this purpose is a simple or legal mortgage. The significance

[8] **There are several of these including Paris Convention for the Protection of Industrial Property of 1883, Patent Cooperation Treaty of 1970, Madrid Agreement of 1998, and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPPS Agreement) which was negotiated under the auspices of the World Trade Organization (WTO) and came into effect in 1995.**

Table 12.2 **Legal/Equitable** Mortgage Covering Land and Fixed (Immovable) Assets

Created over	How perfected	Functions and enforcement
All real property: land, plant, equipment, fixtures and other immovable property.	Simple (Legal) Mortgage In case of a simple, or legal. mortgage, a deed of mortgage has to be executed and registered with stamp duty or other fees paid. Equitable mortgage In case of equitable mortgage (available only in certain jurisdictions), the following conditions are required to be fulfilled: Deposit of title deeds of the assets with the lenders. • Execution of a memorandum of deposit of title deeds. Issuance of an irrevocable power of attorney to the lenders|the security trustee.	A legal mortgage acts as a constructive notice to the future mortgagees. The secured lender of a legal mortgage ranks ahead of the subsequent unsecured ones upon enforcement. If two mortgagees claim an equitable interest in the secured property, the first claim in order of creation prevails. Secured lenders can repossess the mortgaged property upon default by the borrowers, to sell it to a third party or to use it until loans are fully recovered.

of a simple mortgage is that it creates a legal interest in the mortgage property for the lenders that cannot be overridden by any third party. Under most jurisdictions, a legal mortgage is recorded at a local registry or notary.

Once registered, a simple mortgage cannot be amended or modified subsequently. Any such action requires a new registration, involving further stamp duty or tax. Given the changing nature of project assets, lenders require that the lien should cover all subsequent improvements of the project. From the project vehicle's perspective, compliance with this requirement may be difficult and prohibitive if a legal mortgage has to be executed and perfected with each improvement. This particular problem is mitigated sometimes through recourse to a second type of mortgage, available only in certain jurisdictions, referred to as an equitable mortgage.

An equitable mortgage is different from a legal mortgage in that it does not require perfection by registry nor excessive stamp duty. To complete the equitable mortgage, a memorandum of deposit of title deeds over land (and/or shares, if appropriate) may have to be executed by the project vehi-

cle along with a formal declaration evidencing the borrower's intentions to create security in favour of the lenders.

Generally, however, an equitable mortgage is not viewed to be as desirable as a legal mortgage by lenders because it is not recorded in a public registry, and therefore, cannot serve constructive notice to another creditor of its existence. In the absence of this attribute, a lender holding an equitable mortgage could easily find himself or herself competing with another creditor for the rights of enforcement.

Hypothecation[9] [Section B. 1(a)(ii), page 532]

Lenders require the project vehicle to create security over all movable assets of the project through hypothecation, or similar instrument, as shown in Table 12.3. In many common law jurisdictions, it is an instrument used to create security on movables.[10]

Generally, project lenders require a fixed charge hypothecation over the fixed and ascertainable assets of the project and a floating charge over assets that cannot be ascertained, e.g. cash-in-banks, spare parts, raw materials and inventories or that are highly variable or unidentifiable. When used in the host country, a floating lien "floats" with unascertainable assets, allowing the project vehicle their full use in carrying out the project. However, it crystallizes upon enforcement by the lenders, or on occurrence of such events as agreed to in the deed of hypothecation. These may include, for example, attempts by the project vehicle to create further security interest over the security assets in violation of covenants imposed by the lenders, initiation of any insolvency proceeding, any attempts to wind up or reorganize corporately, and/or all actions that are likely to create a material and adverse change (MAC)to the project.

Taking security over unascertainable movable assets may be difficult in certain legal systems, particularly in the civil law countries, where this form of security is not recognized; or even in common law countries where the courts have limited experience in their enforcement.

Pledge [Section B. 1(a)(iii), page 532]

Project lenders require the project vehicle to pledge its shares as a loan con-

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[9] The term hypothecation comes from the Latin hypotheca and means mortgage or pledge. Under Roman usage, the term means a mortgage or pledge over property that remains in the possession of the debtor.

[10] In Latin American countries, the term hypothecation also applies to the mortgage on real property.

Table 12.3 Hypothecation of Mwable Assets

Created over	How perfected	Functions and enforcement
Ascertainable assets, e.g. trucks, cars and computers (fixed charge).	In order to perfect both fixed and floating charge, a deed of hypothecation is executed and registered at the designated host country registry.	Project vehicle may use the hypothecated ascertainable assets in the ordinary course of business but cannot remove, replace, dispose or sell such assets without the consent of the lenders.
Unascertainable assets, e.g. cash-in-banks. spare parts, inventories and raw materials (floating charge).	An irrevocable power of attorney is also issued by the project vehicle in favour of the security trustee to enforce security following a default.	Project vehicle may use the hypothecated unascertainable assets in the ordinary course of business. The floating charge over these assets is crystallized only upon enforcement by the lenders.
		Once the floating charge is crystallized, project vehicle cannot remove, replace, dispose of or sell the assets.
		Lenders and/or the security trustee may enforce the charge in accordance with the terms agreed to in the deed, e.g. selling the property to a third party.

dition. Pledge of shares is particularly important where lenders, or their advisors, believe that the value of the collateral is insufficient or there is uncertainty about the exercise of "step-in" rights under a direct agreement. As described in Table 12.4, such a pledge provides lenders in most jurisdictions with the right to take control of the project, replace current management or take any other action deemed necessary to safeguard their investment.

Taking a pledge over shares becomes difficult if investors, other than the sponsor(s), hold some of the project shares and are unwilling to pledge these. Moreover, if host country public entities invest in the project, this type of security may not be available at all. Still another consideration is that in certain jurisdictions, directors have to possess minimum qualification share(s) in the company. Requiring them to pledge their qualification share(s) may be void due to the conflicts with background law of such jurisdictions. Where possible, and to circumvent these and other similar issues, lenders require the sponsor(s) to possess a majority of the project shares until the loan is fully discharged.

Table 12.4 Pledge over Shares

Created over	How perfected	Functions and enforcement
Shares of the project vehicle or partnership participation(s).	Pledge of share is executed and usually registered at the joint stock registry, or its equivalent. Share certificates. a memorandum of deposit of share certificates and share transfer forms signed in blank are provided to the lenderslsecurity trustee. The project vehicle issues irrevocable power of attorney to the lenders/ security trustee to take any action they deem prudent to protect their interests.	It entitles lenders to transfer the pledged shares to a third party upon default Upon default, lenders can represent the shareholder in any shareholders and/or board meeting and can exercise such powers conferred upon the shareholders or directors including the exercise of all voting rights in relation to the securities. Lenders can take control of the project replacing the current management in order w sell the same to a third party or w take any such steps necessary to safeguard their loans.

Assignment [Section B. 1(a)(iv), page 532]

Lenders always require the project vehicle to create security by way of an assignment of all project agreements, other key project documents and insurance(s), as described in Table 12.5.

Assignment may be absolute or conditional. In certain legal systems absolute assignment amounts to out-and-out sale, and hence attracts huge stamp duty as well as registration costs, whereas conditional assignment becomes effective, subject to future contingencies, e.g. occurrence of a default. The general rule under New York State or English law is that an absolute assignment of an EPC or other such contract has the effect of transferring the assignor's performance obligations to the assignee. Typically, each of the contracts listed in the first column of Table 12.5 will have a clause that prohibits either the project vehicle, or counter-party, from assigning the contract to third parties throughout its validity period.

An exception to this general rule, however, applies to the conditional assignment of a security interest in a contract, as would be the case when the project vehicle assigns the EPC contract to a lender as collateral for a loan. In this case, the collateral assignment does not necessarily convey any

Table 12.5 Assignment of Project Agreements and Insurance(s)

Created over	How perfected	Functions and enforcement
The following contract incorporating rights and benefits of the project vehicle: • Off-take • Concession • Implementation • Direct(s) • EPC contract • Sponsor(s) support • Insurance(s) • Permits, licences, etc.	The project vehicle executes deed of assignment. The project documents must be signed by enabled organizations and authorized individuals. Written notice is given to the counter-parties of the assignment. In the case of the project documents, the notice requirement is usually satisfied through the direct agreements.	Lenders can: (a) Derive a security interest in the rights and benefits of the project vehicle under project agreements so assigned. without incurring any obligations. (b) Institute proceedings for actionable claims without obtaining consent from the project vehicle.

performance obligations that the project vehicle may have under the terms of the project agreement but rather only the beneficial rights under the contract. Such rights thereby assigned to the lenders would include the ability to compel performance by the contractor, enforce a remedy pursuant to a breach of contract, and require payment of liquidated damages (LDs) and other amounts due. To avoid any confusion on the issue, most project contracts also include a clause that expressly permits the project vehicle to create a security interest in the agreement for purposes of raising the debt funds needed to implement the project.

In addition, however, the lenders may also require the counter-party to each project agreement to separately consent to the collateral assignment of the contract. The direct agreement [Section B. 1(c), page 532] discussed in more detail in Appendix 12.1, has the following additional purposes:

(a) Make the lenders a party to the project agreements.
(b) Suspend the rights a counter-party has with the project vehicle under the terms of a project agreement to terminate its contract pursuant to a project vehicle default.
(c) Enable lenders to take over the operation of the project through a nominated representative (designee or work-out vehicle) to cure any project vehicle default or to exercise remedies under this agreement.
(d) Confirm, clarify or amend, as may be necessary, the true intent of the parties with respect to specific project agreement provisions.

Without the rights that are embedded in (b)and (c)above, the lender would face an immediate decline in the value of the project and be held hostage to the demands of the counter-party.

Lenders, through additional provisions in the direct agreements and certain others in the reserved discretion(s) (RDs) that form part of the common terms agreement (CTA), may also restrict the ability of the project vehicle and its counter-parties to amend the project agreements without lenders' consent. To do so, however, might affect the collateral value of an agreement, or a number of such agreements, to the project at large. For this reason, lenders as secured parties will contract with the project vehicle (through the RDs) and each of the counter-parties (through the direct agreements), restricting them in each case from making amendments or modifications without first seeking the approval of the lenders. (Notwithstanding, we duly note that there could be covenants in the loan agreement with the objective of achieving the same, although not precisely the same, result. Covenants in a loan agreement bind the project vehicle only, whereas provisions in a direct agreement bind the counter-party as well.)

How do the counter-parties feel about these intrusions by lenders on their rights under the project agreements? It has to be presumed that the counter-parties may have at least some objection to the presence of the lenders and their constraints. They do benefit from the direct agreements to the extent that a project materializes. If they do not agree to the direct agreements, the counter-parties, of course, run the risk that the project will never get off the ground.

Review Questions

1. What is meant by the offensive and defensive attributes of security?
2. What is meant by the terms creation, perfection and enforcement of security?
3. What is the difference between a floating lien and a floating charge, as these terms are used in a Project Financing?
4. Why do most lenders prefer the law governing of New York State or England to apply to the loan agreement in a Project Finance deal as well as many of the other finance documents?
5. What general principles are used with regard to the selection of governing law when creating security over a project's assets in a host country other than the US or England? What are the typical instruments used and what assets do they cover?
6. What is a collateral trust and why is it important in a Project Finance context to the perfection and enforcement of security?

7. What are the two ways of foreclosing security if a direct agreement, or a pledge of shares, is part of the security of a project finance deal?
8. What general principles are relied upon to perfect security when a project is located in a host country other than the US or England?
9. What is a hypothecation in a common law country and how does it differ from a mortgage? What are the typical problems with a hypothecation that you would expect to encounter in a developing country?
10. Why is a pledge of ownership shares, or partnership interests, important in a Project Finance deal?
11. Describe the typical commercial issues that are negotiated pursuant to a direct agreement.

APPENDIX 12.1
DIRECT AGREEMENT(S)

During the life of any loan, situations may arise where, in spite of default by the project vehicle or the occurrence of an extraordinary event outside the project vehicle's control, it is in the interest of the parties to avert termination of the project by allowing its continuance under the responsibility of a different project sponsor.

The lenders, whose main security is the going concern strength of the project, would be adversely affected by an interruption or termination of the project prior to repayment of loans. In a default, or other impediment affecting the project vehicle, the lenders will be interested in ensuring that the work will not be left incomplete and that the project will be operated profitably. The ceding authority, too, may be interested in allowing the project to be carried out by a new sponsor as an alternative to its taking over.

Under English law, direct agreements are entered into among the lenders and project vehicle, as well as the major project participants (depending on context, the counter-party or counter-parties) with the objectives of making lenders a party to the project agreements:

- Suspend rights a counter-party has under a project agreement to terminate its contract pursuant to a project vehicle default.
- Create a provision for the lenders to take over the operation of the project through a nominated representative (referred to herein as designee or work-out vehicle) to cure the default or exercise other remedies under this agreement.
- Confirm, clarify or amend, as may be necessary, the true intent of the parties with respect to specific project agreement provisions.
- Acknowledge awareness (by the counter-party) that the project vehicle has assigned its rights under the project agreement to the lenders by way of security.

Under a typical direct agreement, the rights of the counter-party to terminate the contract are suspended or postponed for an agreed period/s (cure period/s) during which the lenders are able to step into the project to determine the circumstances under which the default may be cured. The lenders may cure the default in one of two ways:

- Assist the current sponsor to cure the default after they are convinced that the project under current ownership and operation is only temporarily affected by an extraneous event and, otherwise, is viable.
- Replace the current sponsor with a new sponsor (substitute) and novat-

ing the project agreements. This action may occur subsequent to the lenders creating a work-out vehicle separate from the project vehicle. In such case, the counter-parties will be required under the terms of direct agreements to novate the project agreements with the substitute, provided they are satisfied with its ability to perform under the project agreements.

Under direct agreements, the lenders have the rights to replace project vehicle management and take over control of the project if the project vehicle has caused a default under a given project agreement. In such case, the aggrieved counter-party suspends its rights to declare a default (suspension period), while the lenders attempt to cure the relevant default. The suspension period may be contractually defined to extend for up to four years – generally divided into four phases. A defined procedure is set forth in the direct agreements.

At the occurrence of a project vehicle default, the counter-party provides notice to the lenders that it intends to terminate the project agreement (noticeof intent to terminate). Following its delivery, the project vehicle and the counter-party enter into an initial cure period (normally 45 days for the payment default and 90 days for other default) where the parties decide what steps shall be taken to mitigate the consequences of the relevant default. If the project vehicle succeeds in curing its default during this period, the counter-party may not terminate the contract. The main object of the initial cure period is to give both the parties an opportunity to resolve their differences without intervention by the lenders.

If, on the other hand, the project vehicle fails to cure its default during this time, the lenders are ceded a second cure period (evaluation period) of 30–90 days where they are permitted to evaluate the circumstances surrounding the default to determine what action to take. Generally, the evaluation period ends at the earlier of one of the following events:

- Lenders deliver an election notice to the counter-party and the project vehicle that they have elected to cure the default.
- Lenders pursue the enforcement of their rights and remedies under the finance agreements.
- At the expiration of the allotted evaluation period.

The lenders' cure period (approximately six months to one year in duration) commences upon the delivery of the election notice by the lenders to the counter-parties electing to exercise their step-in rights in order to further consider their options. If the default cannot be cured during this time, the final cure period, extending up to two or three years, may be invoked at the option of the lenders.

Lenders' step-in rights become effective when they, or their designee, take over the control of the project. On and from the date on which the designee is nominated (assumption dare), the designee on behalf of the lenders will be entitled to exercise all rights and discretion(s) of the project vehicle under the project agreements. In such circumstances, all acts and omissions by the designee in dealing with the counter-party and exercising the rights of the project vehicle shall be attributable to the project vehicle as if the designee were acting as its agent. In assuming the rights of the project vehicle under the project agreements, the designee becomes entitled but not always obligated to cure the default that has created the need for the lenders' step-in. However, if the lenders or their designee fail to make diligent attempts to cure the default, the counter-parties may be able to pursue their previously postponed termination rights.

If recruitment of a new sponsor requires novation of the project agreements with the counter-parties and the host government, the new sponsor or substitute will undertake all liabilities of the project vehicle including those unperformed obligations that created the default or EOD in the first place on its assumption of the project (effective date). (See Chapter 8 for discussion on the difference between a ***default*** and an EOD.) It also becomes entitled to exercise all rights and powers of the project vehicle under the project agreements. In effect, the substitute becomes a party to all project agreements in place of the project vehicle and is treated as if it had originally been a party to all agreements.

Under the direct agreements the lenders also hold the rights to step out of the project (the step-out rights) once the default is cured and they are relieved of all obligations thereafter.

Since direct agreements nullify certain contractual rights of the counter-parties, the provisions of these instruments are negotiated avidly. Some key commercial and legal issues need to be addressed during the negotiation of direct agreements.

Commercial Issues

Commercial issues that arise during the negotiation of these agreements include:

- Discharge of past due obligations. If the step-in by lenders has been caused by a project vehicle payment default under a project agreement, the question arises as to whether the breach will be cured immediately. The counter-party, of course, will negotiate arduously for this provision. The lenders, however, will contend that the breach should be cured only after an extended evaluation period. They will support their posi-

tion with the following logic. Since a project vehicle breach under the project agreements is a default under the finance agreements, the event entitles the lenders to enforce their security. If the lenders accelerate pursuant to a liquidation, the counter-party, as an unsecured creditor, would be exposed to the risk of not recovering anything. Hence, a step-in enables the lenders to evaluate how best to regularize the situation. If the project can be salvaged, it is to the benefit of all concerned, including that of the aggrieved counter-party. Moreover, the lenders will contend that any amount past due will accrue default interest during the period it remains outstanding. Therefore, if they are successful in normalizing a project pursuant to a step-in, the counter-party stands a reasonable chance of collecting amounts due with accrued interest.

The issue is rarely a deal-breaker. The lenders may ultimately agree to some compromise where they are given a reasonable time period within which to evaluate the project's viability prior to being obligated to cure the breach.

- Continuing ability of the project vehicle to perform. Apart from the issue described above, other concerns of the counter-party will relate to the ability of the project vehicle to continue to perform under its contract during the step-in period and beyond. The counter-party will take the position, usually successfully, that it must not be expected to suspend its rights to terminate a contract if the project vehicle is unable to meet its obligations, including payment obligations, during the step-in period. Under most circumstances, this would appear to be a reasonable request. While a fuel supplier may agree to suspend its rights of termination as a result of a step-in by lenders pursuant to a payment breach, it is unlikely to continue to perform if it is not paid for such service.
- Counter-party rights to approve substitute. A counter-party may require the right under a direct agreement to approve the substitute if the project is sold pursuant to a step-in by the lenders. In this case, the counter-party will take the position that it should be permitted to conduct its own due diligence as to whether the proposed substitute has the necessary technical expertise and adequate capital structure to operate the project. The lenders, generally, will not deny the counter-party this right.

Counter-party pre-emptive rights. In addition, a counter-party may seek pre-emption rights under the direct agreement enabling it to purchase the project outright by matching that price offered by the substitute. Lenders generally dislike rights of pre-emption because it may discourage prospective bidders from submitting serious offers for a distressed

project, particularly one that has not yet been commissioned. Hence, they are unlikely to agree to cede such rights. However, lenders take a different position in cases where the counter-party is located in a developing country and is government-owned. For such projects, lenders require a buyout provision from the government-owned counter-party, the host government, or both, in the event that there occurs a breach by the counter-party or host government.

- Broad vs narrow step-in rights. The project vehicle may adopt a position that the lenders should not be permitted to exercise step-in rights unless they are prepared to accelerate their loans pursuant to a default. Lenders, on the other hand, will want broader rights to step in for payment, or non-payment, defaults under the project agreements, including those cases where they are not inclined or prepared to enforce their loans immediately. Unless the borrower has unusual negotiating strength, this issue is resolved usually in favour of the lenders.

Legal Issues

The provisions of a direct agreement may often conflict with the established laws:

- Enforcement of provisions related to the suspension of remedies. Some view the enforceability by lenders of provisions related to the suspension of remedies by a counter-party as questionable. The reason is that the project vehicle and counter-party are executors to a project agreement, and therefore the interference by the lenders through the direct agreement with the provisions of the contract may be construed to be unnecessary and unenforceable in the courts. To create preconditions for enforceability, lenders will require the counter-party to assign and acknowledge the direct agreement along with other project agreements. Such assignment and acknowledgement by the counter-party may act as a waiver to any objection to a provision thereof in a future proceeding.
- Length of the cure period. Any claim for damages needs to be instituted within the time prescribed under the relevant statute of limitation. Under many common law jurisdictions, for example, the limitation period for institution of a suit for damages pursuant to a breach of contract is three years commencing from the date of the breach. In contrast, under direct agreements, the counter-parties' right to take termination action is suspended for a period that may be longer than the statutory limitation. The question may arise as to whether the suspension period is condonable under the statute. Normally, the statue of limitation pro-

vides for certain events, which if proved, give grounds for the condonation of delay to enforce a remedy including the institution of a suit. A claim becomes time-barred only if the defendant can establish that the claimant has not taken any action or made any attempt to enforce its claim during the limitation period.

- Ceding authority's step-in vs the lenders' step-in. Under certain jurisdictions the ceding authority may have statutory step-in rights. Generally, this would be the case if the ceding authority is under statutory obligations to render the concerned service at all times. For example, in many countries the government or its agencies are the sole service providers of utility services, e.g. water and electricity. If the project vehicle fails to deliver the required service, the ceding authority may take over the project temporarily to ensure that the service does not continue interrupted. Hence, in that special circumstance, lenders' rights to step in may be defeated through exercise of similar rights by the ceding authority.

  Lenders may feel uncomfortable to lend into a country whose domestic laws authorize the ceding authority's step-in rights. There may exist some apprehension on the part of the lenders that the ceding authority may abuse this right to take control of the project assets, which would defeat lenders' security. However, provisions related to compensation in the event of early termination of the off-take or implementation agreement (IA) may mitigate this risk. Under the IA, the ceding authority may remain obligated to pay adequate compensation if it wants, or is forced, to take over the project permanently.

  Contingent liability of the designee. Under English law receivership, the designee cannot escape contingent liability for actions, or omissions, if its intervention is not structured properly. It becomes subject to such liabilities if it remains a party to a contract for more than 14 days.[11] The lenders circumvent this problem by requiring the project vehicle to consent to (a) assign the designee as its agent; and (b) assume liability for any act or omission of the designee during the step-in period. For this contract, the project vehicle becomes the principal in such an arrangement and the designee, its agent. In a principal-and-agent relationship, the principal assumes all responsibility of the agent even where the latter discharges improperly its obligations.
- Conflicts between background laws and control of management by lenders.

  Under English law, a secured creditor is entitled to appoint a re-

[11] *Powdril* ***vs Watson*** [1995] All E.R. 65.

ceiver or designee to run the business of a particular company until the debts are repaid. Such an enforcement remedy is not available in all jurisdictions. For example, the US has developed bankruptcy procedure (Chapter 11 proceedings) that does not allow the creditor to run the business of the debtor for recovery of its loans. Under such a law, the borrower has the right to take shelter under bankruptcy protection to reorganize its business. Therefore, lenders' remedy under the direct agreement, if not carefully structured, may be defeated by such provision. However, in the US, as discussed in this chapter, US lawyers structure around this by taking stock pledges "up the chain" beginning with the shares of the borrower and proceeding up through any intermediate shell companies to a level where there exists a pledge by an entity with sufficient business interests and assets such that it is unlikely to be placed in a bankruptcy scenario. The stock pledges allow the lenders to take control over the project and eventually to withdraw the Chapter 11 proceedings.

- Restriction on sale of assets by lenders. Direct agreements provide lenders rights to sell, transfer, or otherwise dispose of, the secured assets of the project vehicle as enforcement. Under English law, lenders can exercise such rights upon enforcement. However, sale of the project's assets upon enforcement attracts the question of self-dealing, for example, selling of a mortgaged property by the mortgagee is void unless it is fairly and properly priced.

  Under the same law, the lenders become shadow directors if they take security over the shares of the project vehicle. They also assume quasi-directors' role on enforcement and become subject to fiduciary duties related to "care and due diligence". As mentioned above, the US law provisions in this regard may defeat the direct agreements.
- Dispute resolution. A dispute resolution clause is an integral part of the direct agreement. This clause provides for procedures to be followed when any dispute arises in connection with the project agreements. Generally, each project agreement possesses a clause as to what jurisdiction and laws the agreement will be governed by. Investors and lenders of a Project Financing would prefer the governing law and forum to be neutral, efficient, conversant and predictable to deal with investment-related issues.

  At the same time, the sponsor(s), lenders and major participants in a Project Financing dislike undue dependence on litigation to resolve all investment-related disputes especially when the project has a long life. Therefore, some alternative dispute resolution (ADR)mechanisms (mediation, arbitration, mini-trial, early neutral evaluation, etc.) are desig-

nated to resolve disputes. However, the host country, may not have the standard ADR infrastructure to provide acceptable services. Consequently, the lenders will require contractual arrangements that designate a particular venue and specific ADR rules to employ when a dispute arises. The counter-parties, in contrast, may prefer disputes to be resolved through resort to national courts to take advantage of "home turf", including familiar laws, lawyers and court procedures.

OUTLINE OF COMMON TERMS SHEET

A. EQUITY SUPPORT

1. Initial Ownership

The Sponsor will hold, indirectly through wholly owned subsidiaries (the Shareholders), all share capital in the Project Vehicle as at Financial Close.

2. Base Equity

(a) The Sponsor will commit to provide (through the Shareholders) base equity funding (Base Equity) to the Project Vehicle in an amount at least equal to ___% of Budgeted Project Costs up to a maximum aggregate amount of ___% (such commitment being the Base Equity Commitment) in accordance with the following provisions.

(b) ___% of Base Equity will be provided before the First Drawdown Date. The remainder of the Base Equity will be contributed at least three Business Days before the date of each subsequent drawdown under the Facilities in an amount necessary to comply with Section E. 2(f).

3. Contingent Equity

The sponsor will commit to provide contingent equity funding (Contingent Equity) to the project vehicle in a maximum amount of % (such commitment being the Contingent Equity Commitment) in accordance with the following provisions:

(a) If, at any time prior to project completion, the amount of Available Funding is insufficient to meet project costs which have become due and payable or will become due and payable within 30 days (each such shortfall being a Shortfall Amount), then the sponsor will, upon notice in writing from the Project Vehicle or, failing it, the Inter-creditor Agent, pay an amount equal to the lesser of (i) the Identified Contingent Equity Requirement at that time; (ii) the remaining Contingent Equity Commitment (if any); and (iii) that Shortfall Amount.

(b) If contingent equity is contributed to fund a project cost and at that time either:

(i) The Project Vehicle is entitled to make, or has made, a claim for general or liquidated damages against the Construction Contractor or a Government Authority; or

(ii) The Project Vehicle is entitled to make, or has made, an insurance claim, which in each case has not been paid and which would, if paid, have funded the project cost, that contingent equity shall be contributed by way of a bridging loan which shall be repaid from the recoveries in respect of such claims, save that repayments of any such bridging loan after the date of project completion may only be made if, at the time of the repayment, each Debt Service Reserve Account is fully funded to its required balance. The Finance Documents will include provisions to secure to the Sponsor a first priority claim to such recoveries.

4. Acceleration of Ease Equity

(a) If an Event of Default has occurred and is continuing but the loans have not been accelerated the Project Vehicle or the Inter-creditor Agent may require any remaining Base Equity Commitment to be contributed in advance of the loans, as and when required to fund Project Costs.

(b) If an Event of Default has occurred and is continuing but the loans have been accelerated, any remaining Base Equity Commitment shall be paid, on demand by the Inter-creditor Agent, to the Inter-creditor Agent for application to outstanding indebtedness under the Facilities.

5. Restoration Support

If, at any time after the Commercial Operations Date, the Project Vehicle must undertake a Restoration in accordance with the Implementation Agreement (IA), the Sponsor will undertake to procure that Restoration is completed in accordance with the IA, provided that the Sponsor's liability under this paragraph shall not exceed the Threshold Amount agreed to under the IA.

6. Maintenance of Ownership

The Sponsor will undertake to maintain, in the period before the ___ anniversary of the Commercial Operations Date, directly or indirectly through wholly owned subsidiaries, legal and beneficial ownership of, and the power to vote, 100% of the ordinary shares of the project vehicle.

7. Sponsor Representations and Warranties

The Sponsor will give the following representations and warranties:

(a) Corporate status. It is a limited liability project vehicle, duly incorporated and validly existing under the laws of ___.

(b) Powers and authority. It has the power to enter into and perform, and has taken all necessary action to authorize the entry into, performance and delivery of, the Transaction Documents to which it is a party and the transactions contemplated by those Transaction Documents.

(c) Enforceability. Each Transaction Document to which it is or will be a party constitutes, or when executed in accordance with its terms will constitute, its legal, valid and binding obligation enforceable against it in accordance with its terms (subject to limitations on enforcement caused by bankruptcy, insolvency, liquidation, reorganization and other similar laws of general application affecting the rights of creditors).

(d) No conflict. The execution, delivery and performance by it of, and the transactions contemplated by, the Transaction Documents to which it is or will be a party do not and will not violate or conflict with (i) any law, rule or regulation or Governmental approval or judicial or official order to which it is subject; (ii) its constitutional documents; or (iii) any document which is binding upon it or any of its assets to an extent, in each case, which is reasonably likely to have a Material Adverse Effect.

(e) Authorizations and consents. All material authorizations and licences required by it in connection with the entry into, performance, validity and enforceability of the Transaction Documents to which it is a party and the transactions contemplated by the Transaction Documents to which it is a party have been obtained or effected on or before the date they are required in order to perform its obligations under those Transaction Documents, are in full force and effect and, so far as the Sponsor is aware, no steps have been taken to revoke or cancel any authorization or licence obtained or effected.

(f) Improper payments. It has not and to the best of its knowledge and belief neither the Project Vehicle nor any of the Project Vehicle's or its officers, employees or agents has paid or received any unlawful commission, inducement, bribe, pay-off or kickback directly or indirectly in connection with the Project.

(g) Share capital. It owns, legally and beneficially, 100% of the share capital of the Project Vehicle.

8. Undertakings

The Sponsor will undertake the following, for so long as the Sponsor

has undischarged obligations under the Equity Support Agreement (ESA):

(a) Financial information. Provide its audited annual accounts as soon as the same are available.

(b) Accounting policies. Maintain accounting records in accordance with US generally accepted accounting principles (GAAP), consistently apply the principles and ensure that its financial statements supplied under paragraph (a) above are so prepared and fairly present its financial condition as of the dates specified therein and the results of its operations for the periods specified therein.

(c) Authorizations. Promptly:

(i) Obtain, maintain and comply with the terms of; and

(ii) Supply certified copies to the Inter-creditor Agent of; all material Governmental approvals, licences and consents that, under all applicable laws, may from time to time become necessary in connection with the execution, delivery, validity, enforceability and performance by or against the Sponsor in accordance with the terms of the Transaction Documents to which that Sponsor is a party.

(d) Maintenance of status. Do all such things as are necessary to maintain its corporate existence.

(e) Abandonment. Ensure that the project is not abandoned.

9. Equity Support Agreement – Miscellaneous Provisions

The ESA will also contain, in respect of the Sponsor's payment obligations under the ESA:

(a) A prohibition against the Sponsor exercising rights of setoff.

(b) A currency indemnity provision.

(c) A tax gross-up provision.

(d) A default interest provision (applying the same rate of default interest as applying to the Project Vehicle and excluding any double counting of liability for default interest against the Project Vehicle and the Sponsor).

B. SECURITY

1. Security Interests

(a) First-ranking security interests will be created over the assets of the Project Vehicle in favour of the Security Trustees (on behalf of the Finance Parties). This security will comprise:

(i) A simple or legal mortgage over the Project Vehicle's lease interest in the site and all fixtures, plant and machinery attached thereon.

(ii) A hypothecation or fixed charge over all moveable assets of the Project Vehicle located in ___.

(iii) A floating charge over all assets of the Project Vehicle not subject to the security under paragraphs (i) to (ii) above (including the Project Vehicle's stock and receivables, its rights in the Secured Accounts located in ___ and its business as a going concern).

(iv) An assignment of the Project Vehicle's rights under all contracts executed by the Project Vehicle and other contracts which become Project Documents in the future.

(v) An assignment of the Project Vehicle's rights under the insurance policies entered into by the Project Vehicle, and the rights of the insurer under the reinsurance policies assigned to the Project Vehicle, and all benefits accruing to the Project Vehicle under those policies.

(vi) Fixed and floating charges, over the Project Vehicle's assets not subject to the security under paragraphs (i) to (v) above (including the Secured Accounts (but not including the Restricted Payments Account and any account into which recoveries are paid pending repayment of Sponsor Bridging Loans to the Sponsor) and other assets located outside of ___).

(b) A pledge, governed by ___ law, over 100% of the shares in the Project vehicle at all time.

(c) The Direct Agreements.

2. Credit Support for Construction Contractor

The Project Vehicle will benefit from the Contractor Performance Bond from The Export-Import Bank of ___ or other bank acceptable to the Inter-creditor Agent (acting reasonably) covering ___% of the contract price under the Construction Contracts and which will remain in force (if not encashed) until issuance of the Takeover Certificate (as defined in the Construction Contracts).

C. ACCOUNTS STRUCTURE

1. Accounts

The Project Vehicle will establish and maintain, with the relevant Account Bank(s), the following accounts prior to the First Drawdown Date:

Account	Currency	Location
Proceeds Account	Local/US dollar	Offshore and Onshore (US dollar) and Onshore (Local)
Operating Account	Local/US dollar	Offshore and Onshore (US dollar) and Onshore (Local)
Debt Service Payment Account	US dollar	Offshore
Debt Service Reserve Account	US dollar	Offshore
Compensation Account	Local/US dollar	Offshore and Onshore (US dollar) and Onshore (Local)
Major Maintenance Reserve Account	US dollar	Offshore
Restricted Payments Account	US dollar	Offshore
Petty Cash Account	Local	Onshore
Disputed Payments Account	Local/US dollar	Onshore

2. Proceeds Account
All advances under the Facilities, proceeds of Base Equity, Contingent Equity and all Project Revenues shall be paid into the Proceeds Account. The Project Vehicle will be permitted to make withdrawals from the Proceeds Account only to make payments in connection with the Project and transfers to other Accounts in accordance with the Order of Priority.

3. Operating Accounts, Petty Cash Account and Disputed Payments Account
The Project Vehicle may make transfers from the Proceeds Account to the Operating Accounts in respect of Operating Costs and Project Taxes provided that the aggregate amount transferred in any Semi-annual Period shall not exceed the Six-Month Transfer Amount as defined below.

4. Debt Service Payment Account
Subject to the Order of Priority and the availability of funds, the Debt Service Payment Account will be funded each month during any Semi-annual Period in which an instalment of Debt Service falls due, in order to meet the following target balance (expressed as a fraction of the instalment of Debt Service due at the end of that Semi-Annual Period):

Month	Target Balance
1	1/6
2	2/6
3	3/6
4	4/6
5	5/6
6	6/6

The Project Vehicle will only be permitted to make withdrawals from the Debt Service Payment Account to meet Debt Service and to fund Permitted Operating Costs to the extent that funds are not available in the Operating Accounts and the Proceeds Account.

5. Debt Service Reserve Account

The Project Vehicle will establish and maintain a balance on the Debt Service Reserve Account at least equal to the Debt Service estimated to accrue during the next six months save that the initial required balance of the Debt Service Reserve Account shall include an amount in respect of Financing Principal due under the Facilities on the First Repayment Date notwithstanding that the First Repayment Date may not occur within the next six months. The initial funding of the Debt Service Reserve Account shall be made as a Project Cost on or before the end of the Availability Period. Thereafter, transfers will be made at monthly intervals in accordance with the Order of Priority, subject to the availability of funds, in an amount (if any) to ensure the Debt Service Reserve Account is funded to its required balance.

The Project Vehicle may provide an irrevocable standby letter of credit, in a form acceptable to the Lenders' Agent (acting reasonably), from a bank with respect to its long-term unsecured and unsubordinated debt covering the cash balance on the Debt Service Reserve Account and may then withdraw that amount from the Debt Service Reserve Account.

The letter of credit must be for the account of the Sponsor. If there is a drawing under the letter of credit, there is no obligation to provide a replacement letter of credit in respect of the amount drawn.

6. Compensation Account

All proceeds of insurance claims, performance liquidated damages under the Construction Contracts, all other claims arising upon termination of the Project Agreements, all compensation for the cost of any Restoration from Government of ___, the Sponsor or any third party, and all compensation received by the Project Vehicle for an Expropria-

tion Event which also constitutes a Government of ___ Event of Default will be paid into segregated sub-accounts of the Compensation Account. Such amounts will be applied in accordance with the Accounts Agreement (AA).

7. Major Maintenance Reserve Account

(a) Subject to the Order of Priority and the availability of funds, transfers to the Major Maintenance Reserve Account will be made at six monthly intervals after the Commercial Operations Date to meet the target balances. The Project Vehicle will be permitted to make withdrawals from the Major Maintenance Reserve Account to meet Major Maintenance Costs and to fund Operating Costs identified in the latest Operating Budget to the extent that funds are not available in the Operating Accounts and the Debt Service Payment Account for this purpose. The Project Vehicle must ensure that an amount equal to the amount withdrawn is paid to the Major Maintenance Reserve Account within 12 months of the withdrawal.

(h) The Project Vehicle may provide an irrevocable standby letter of credit, in a form acceptable to the Inter-creditor Agent (acting reasonably), from a reputable bank with respect to its long-term unsecured and unsubordinated debt covering the cash balance on the Major Maintenance Reserve Account and may then withdraw that amount from the Major Maintenance Reserve Account. The letter of credit must he for the account of the Sponsor. If there is a drawing under the letter of credit, there is no obligation to provide a replacement letter of credit in respect of the amount drawn.

8. Flow of Cash Revenues

Cash balances in the Proceeds Account will (subject to the right of the Project Vehicle to deal with Recoveries be applied in the following order (Order of Priority):

- First, Project Costs, Other Permitted Pre-completion Payments, repayments of Sponsor Bridging Loans and funding of the Operating Accounts.
- Second, transfers to the Major Maintenance Reserve Account.
- Third, Debt Service.
- Fourth, transfers to the Debt Service Reserve Account.
- Fifth, voluntary prepayments under the Facilities and any other amounts payable to the Finance Parties under the Finance Documents not referred to above in the Order of Priority.

- Sixth, other capital expenditure, repayments to Government of ___ or any other person in respect of advances by Government of ___ or that person in relation to the cost of any Restoration under the IA and payments in relation to Sponsor Restoration Loans.
- Seventh, transfers to the Restricted Payments Account in respect of Restricted Payments or any other account required by the Sponsor.

9. Withdrawals during a Default

If an Event of Default has occurred and so long as it is continuing, the Required Lenders may instruct the Inter-creditor Agent to give notice to the Account Banks (with a copy to the Project Vehicle) that the Inter-creditor Agent is to be the sole signatory on the Secured Accounts and to apply all amounts in the Secured Accounts in or towards repayment of the Facilities and such other liabilities of the Project Vehicle as the Inter-creditor Agent may elect. After delivery of such notice, no amount will be payable to the Project Vehicle, or may be withdrawn by the Project Vehicle, with respect to the Secured Accounts.

10. Permitted Investments

Cash balances held in the Accounts may be invested in the following authorized investments, subject to detailed procedures to be set out in the AA:

FOREIGN

Instrument	Minimum Rating	Maximum Maturity
Term deposits	A1 and P1	1 year
___% commercial paper	A1 and P1	1 year
Government bills	AAA	1 year
Certificates of deposit (if available)	A1 and P1	1 year

LOCAL

Instrument	Maximum Maturity
Treasury bills	1 year
Treasury/Government bonds	1 year (remaining)
National Savings Certificates	1 year (remaining)

11. Monitoring of Operating Costs

(a) During each Semi-Annual Period after the Commercial Opera-

tions Date, the Project Vehicle may not incur Operating Costs in excess of the amount equal to:

(i) Resource Costs which become due and payable under the Resource Supply Agreement (RSA) in that Semi-Annual Period.

(ii) Operating Costs (other than Resource Costs) which do not exceed 110% of the budgeted amount for those Operating Costs for that Semi-annual Period in the latest Operating Budget.

With effect from the Commercial Operations Date, the Project Vehicle will provide to the Lenders a semi-annual statement of all Operating Costs incurred in the last Semi-annual Period.

D. COMMON PAYMENT TERMS

1. Prepayment

(a) Voluntary prepayment. The Project Vehicle will be permitted to make voluntary prepayments under the Facilities at any time, subject to the payment of any applicable breakage costs and other fees and charges referred to in the Schedules to this term sheet but otherwise without penalty, on ___ days' written notice. For any one prepayment, the amount prepaid under the Facilities must exceed an aggregate of ___% or the balance of the Facilities if less.

(b) Mandatory prepayment. Each Facility will be prepaid pro rata using:

(i) The proceeds of any performance liquidated damages received by the Project Vehicle from the construction Contractors under the Construction Contracts.

(ii) Insurance proceeds for physical damage or loss received by the Project Vehicle or the relevant loss payee:

If the amount of such proceeds is greater than ___% (or its equivalent) in respect of a single incident unless (I) or (11) applies:

(I) Within __ days of the relevant incident, the Project Vehicle provides a reinstatement plan to the Inter-Creditor Agent for the reinstatement of the damaged Project Facilities to a state at least necessary to achieve a level of performance of the Project equal to the Level of performance immediately before the relevant incident or, if less, the level of performance reflecting the technical

assumptions used in compiling the First Forecast and the Required Lenders (acting reasonably and in consultation with the Project Vehicle, the Technical Advisor and the Insurance Advisor) are satisfied that:

- The proposed reinstatement will at least achieve that level of performance; or
- the Project Vehicle has sufficient available funds (taking into account the relevant insurance proceeds) to undertake that reinstatement.

(II) A Forecast (which shall be compiled at the time) shows that no Event of Default would arise under Section H. 21 at any time in the future if such reinstatement were to take place, and provided further that, in both cases, if the relevant insurance proceeds received by the Project Vehicle exceed the actual cost of the agreed reinstatement, the surplus shall be applied in prepayment of the Facilities (pro rata).

(iii) The proceeds of compensation for an Expropriation Event if such event is also a Government of ___ Event of Default (as defined in the LA).

(iv) All termination payments under the IA, Power Purchase Agreement (PPA), Gas Supply Agreement (GSA) and/or Land Lease Agreement (LLA).

2. Cancellation

Cancellation of the undrawn portion of the Facilities will be permitted, in whole or in part, upon at least ___ days' written notice without penalty, provided that (a) there is simultaneous pro rata cancellation between all Facilities; and (b) Remaining Project Costs would not exceed Available Funding as a result.

E. COMMON CONDITIONS PRECEDENT

1. Conditions Precedent to First **Drawdown**

The documentary conditions precedent to the initial drawdown under the Facilities shall be the following:

(a) Corporate documents. A certificate (substantially in the form set out in the Common Terms Agreement (CTA) of a director of the Project Vehicle, attaching copies of its incorporation certificates, constitutional documents and evidence of corporate authority (including board resolutions or comparable documents), regarding due authorization and due execution of each document to which

the Project Vehicle is a party required to be delivered under this Section E.

(b) Finance documents. **An** original of each of the following Finance Documents duly executed by the parties:

(i) Each Facility Agreement.

(ii) The CTA.

(iii) The AA (which shall include a notice of the security assignment (and acknowledgement thereof) of the Project Vehicle's rights under the Secured Accounts).

(iv) The Calculations and Forecasting Agreement.

(v) Each Security Document.

(vi) The ESA.

(vii) Each Direct Agreement, which shall each include:

- **A** notice of the security assignment (and acknowledgement thereof) of the Project Vehicle's rights under each Project Document which is the subject of the Direct Agreement; and
- Confirmation from the Project Vehicle and the contract counter-party that Project Document is unconditional and in full force and effect.

(viii) Each Fee Letter.

(ix) Each Hedging Agreement.

(c) Project documents **and** other documents. A certified or, where required for the purposes of perfecting security, an original of each of the following documents duly executed by the parties:

(i) The IA (condition precedent to Financial Close).

(ii) The off-take agreement (condition precedent to Financial Close).

(iii) The RSA (condition precedent to Financial Close).

(iv) The LLA (condition precedent to Financial Close).

(v) Each Construction Contract (condition precedent to Financial Close).

(vi) Each credit enhancement agreement.

(d) Corporate authorities of other major project parties. A copy of a resolution of the board of directors or other governing body of each party to the Project Documents and Finance Documents or a certified extract of the minutes or other documentary evidence authorizing the execution of each document to which it is a party or other evidence of the power and authority of the persons signing on behalf of each such party to bind that party.

(e) Consents. Copies of all Required Approvals listed in ___ of the IA

and the approval of the Board of Investment or, like authority, if any, of ___ to this term sheet and the Finance Documents.

(f) Equity. Evidence that the Sponsor has paid the amount of Base Equity which is required under Section A. **1** to be paid before the First Drawdown Date (which can include a letter from the Project Vehicle's auditors that such amount has been paid).

(g) Security.

(i) Share certificates in respect of 100% of the issued share capital of the Project Vehicle duly noted as to the share pledge along with undated share transfer forms executed in blank.

(ii) Evidence that the share pledge has been registered in the books of the Project Vehicle.

(iii) Evidence that notices of the Security Interests created by the Security Documents have been received, and acknowledged, by each counter-party to a document specified in paragraph (c)above which is not subject to a Direct Agreement.

(iv) Evidence of registration of the mortgage over the site with the relevant Registry of Land in ___ under the Registration Act of ___ within ___ months of the date of execution of the mortgage.

(v) Evidence of registration of the mortgage, fixed charge and floating charge with the Registrar of Joint Stock Companies under the Companies Act of ___ within ___ days of their respective execution.

(vi) Evidence of compliance with all requirements in ___ in relation to the share pledge, as identified in the legal opinions in paragraph (o) below.

(vii) Deposit of the lease deeds (and all related documents) in relation to the leasehold interest in the site.

(viii) Other registrations and perfection of security specified in any legal opinion in paragraph (o) below.

(h) Insurance advisor's report.

(i) The Insurance Advisor's report in relation to the insurances (and all related documents) (condition precedent to Financial Close).

(ii) A certificate of the Insurance Advisor addressed to the Inter-creditor Agent that all construction phase insurances required by the Finance Documents to be in effect on the First Drawdown Date are in full force and effect and all

premiums have been paid and the Lenders have been named as co-insureds under those insurances.

(i) Technical advisor's report. The Technical Advisor's report in relation to the project (condition precedent to Financial Close).

(j) Model.

(i) A letter from the Financial Model Auditor in relation to the review of the computer model in accordance with a scope of work to be agreed between the Project Vehicle and the Lead Arranger before Financial Close (condition precedent to Financial Close).

(ii) An initial Forecast (the First Forecast) showing, until the final maturity of the Facilities:

- a minimum semi-annual Debt Service Cover Ratio of ___; and
- a minimum Loan Life Cover Ratio of more than ___, (condition precedent to Financial Close).

(k) Accounts. Evidence that each of the Accounts has been established.

(l) Financials.

(i) Pro forma statement of the Project Vehicle's assets and liabilities immediately following Financial Close.

(ii) Audited statement from the Project Vehicle's auditors of any costs and expenses paid prior to Financial Close.

(iii) Latest audited financial statements of the Sponsor, Onshore Technical Services Provider (TSA) and each Construction Contractor.

(m) Site.

(i) Legal opinion on project site.

(ii) Evidence of registration of the LLA and the Direct Agreement.

(n) Budget. The first Project Budget (condition precedent to Financial Close).

(o) Legal opinions. Legal opinions from:

(i) The attorney general or other Governmental lawyer in relation to the IA and Government of — Guarantee.

(ii) Lenders' onshore legal advisor in relation to ___ law aspects of the Transaction Documents governed by — law and the due execution by Government of ___, the Off-taker; the Lessor and the resource supplier of all Transaction Documents to which they are a party.

(iii) Internal counsel of each of the Sponsor and the Technical Service Provider, in relation to the due execution by those persons of the Transaction Documents executed by them.

(iv) Internal counsel of each of the Construction Contractors, in relation to the due execution by the Construction Contractors of the Transaction Documents executed by them.

(p) Fees and expenses. Evidence that all fees, costs and expenses due to the Finance Parties and their advisors under the Finance Documents on or before the First Drawdown Date have been paid or shall be paid out of the proceeds of the disbursement due on the First Drawdown Date.

(q) Environment. A certificate from two directors of the Project Vehicle confirming that:

(i) The environmental mitigation measures for the Project contained in the Environmental Impact Assessment will be implemented.

(ii) The Project Vehicle will carry out the monitoring programme included in the Environmental Impact Assessment.

(iii) The Project is in compliance, and will remain in compliance with the applicable environmental laws.

(r) Confirmation from individual lenders. Confirmation from individual Lenders that the conditions precedent to the individual loan facility agreements (ILFAs) have been satisfied or waived.

2. Conditions Precedent to all Drawings

The conditions precedent to all drawings under the Facilities will be the following:

(a) Representations and warranties. The representations and warranties contained in the Finance Documents are true and correct in all material respects.

(b) No default. No Default shall have occurred and be continuing or will occur as a result of the drawdown.

(c) Technical advisor's certificate. The Technical Advisor has provided a certificate substantially in the form agreed to under the CTA.

(d) Unfunded cost overrun. Remaining Project Costs do not exceed Available Funding.

(e) Request. Receipt of a request for disbursement in a form set out in final documentation along with a certificate:

(i) Describing in reasonable detail the Project Costs which the relevant drawing will or is likely to fund and confirming that the Project Costs have become due and payable or will become due and payable within ___ days of the proposed drawdown date (forwhich purpose, no Default or Event of Default will arise solely by virtue of projections in relation to Project Costs made in good faith being incorrect);

(ii) Confirming that there have been no variations or charge orders under the Construction Contracts or that all such variations and charge orders were permitted under the relevant contract.

(f) Base equity contribution. In relation to each drawdown date after the First Drawdown Date, the Sponsor has contributed Base Equity in an amount equal to the lesser of:

(i) The amount necessary to ensure that the ratio of that contribution of Base Equity to the total amount to be drawdown under the Facilities on that drawdown date is at least ___.

(ii) The remaining Base Equity Commitment (if any) at that time.

In relation to the conditions precedent under this Section E. 2, the Inter-creditor Agent will, promptly on receipt of a copy of the relevant drawdown request, confirm to each of Lender X, the Lender Y Guarantee Agent and Subordinate Lender whether or not the conditions precedent have been satisfied. If a condition precedent has not been satisfied or the Inter-creditor Agent decides to seek instruction in relation to that condition precedent:

(i) In the case of the first drawdown only, the Initial Conditions Precedent Instructing Group shall exercise instructing authority in relation to the satisfaction or waiver of that condition precedent.

(ii) In the case of subsequent drawdowns, Lenders representing 60% of the original loan commitments shall exercise instructing authority in relation to the satisfaction or waiver of that condition precedent.

F. COMMON REPRESENTATIONS AND WARRANTIES OF THE PROJECT VEHICLE

The Project Vehicle will give the following representations:

(a) Corporate status. It is a limited liability Project Vehicle, duly incorporated and validly existing under the laws of ___

(b) Powers and authority.

(i) It has the power to own its assets and carry on its business as it is being conducted and perform all its obligations under the Transaction Documents to which it is a party.

(ii) It has the power to enter into and perform, and has taken all necessary action to authorise the entry into, performance and

delivery of, each Transaction Documents to which it is a party and the transactions contemplated by those Transaction Documents.

(c) Enforceability. Each Transaction Document to which it is or will be a party constitutes, or when executed in accordance with its terms will constitute, its legal, valid and binding obligation enforceable against the Project Vehicle in accordance with its terms and, so far as the Project Vehicle is aware, is in full force and effect.

(d) No conflict. The execution, delivery and performance by it of, and the transactions contemplated by, the Transaction Documents to which it is or will be a party do not and will not violate or conflict with:

(i) Any law, rule or regulation or Governmental approval or judicial or official order to which it is subject in any material respect;

(ii) The constitutional documents of the Project Vehicle in any material respect or

(iii) Any document which is binding upon the Project Vehicle or any asset of the Project Vehicle to an extent which is likely to have a Material Adverse Effect.

(e) No Default.

(i) No Default is outstanding.

(ii) It is not, and, so far as the Project Vehicle is aware, no Major Project Party is, in breach of the material terms of any Transaction Document to which that Major Project Party is a party.

(f) Consents.

(i) All material authorizations and licences required by it in connection with the entry into, performance, validity and enforceability of the Transaction Documents and the transactions contemplated by the Transaction Documents have been obtained or effected on or before the date they are required in order to implement the Project, are in full force and effect to the extent required at the relevant time and, so far as the Project Vehicle is aware, no steps have been taken to revoke or cancel any such authorization or licence obtained or effected.

(ii) It has no reason to believe that any such authorization or licence will not be renewed as and when required and without imposing any further material restrictions or conditions thereto.

(iii) It has not received any notice that any such authorization or licence not yet required but that will be required will not be obtained or effected at the time it is required.

(g) Taxes on payments. All amounts payable by it under the Finance Documents to the Finance Parties as at Financial Close may be made free and clear of and without deduction for or on account of any tax.

(h) Assets. It has good title to, or freedom to use in accordance with any applicable laws and has acquired and/or has vested in it access to the site and all easements to implement the Project.

(i) Immunity. It is and will not be entitled to claim immunity from suit, execution, attachment or other legal process in any proceedings taken in —— in relation to any Transaction Document to which it is a party.

(j) Choice of law.

(i) Its irrevocable submission to the jurisdiction of the English courts (where it has been chosen).

(ii) Recognition of the choice of English law in the Transaction Documents (where it has been chosen).

(iii) Agreement not to claim any immunity to which it or its assets may be entitled, are legal, valid and binding under the laws of ——.

(k) Accounts.

(i) Its latest audited financial statements most recently delivered to the Inter-creditor Agent have been prepared in accordance with —— consistently applied and fairly represent its financial condition as at the date to which they were drawn up and the results of its operations for the period then ended.

(ii) There has been no Material Adverse Change in its financial condition since the date to which those accounts were drawn up.

(l) Proceedings. No litigation, arbitration or administrative or other proceedings are current or, to its knowledge, pending or threatened, which could reasonably be expected, if adversely determined, to have a Material Adverse Effect.

(m) Information. All material information supplied to the Lenders by it or the Sponsor was true and accurate in all material respects on the date it was supplied.

(n) Project documents. The copies of the Project Documents which it has delivered to the Inter-creditor Agent are true and complete copies of those contracts and there are no other material agreements to which it is a party as at Financial Close.

(o) Intellectual property. It has available to it, prior to the date upon which it is required for the Project, all material intellectual property of every description.

(p) Status **of** security. Each Security Document confers the Security Interests it purports to confer over the Security Assets and those Security Interests are not subject to any prior or pari passu Security Interests (other than any Permitted Security Interests).

(q) Insurances. All Kev Insurances are in full force and effect and no event or circumstance has occurred, nor has there been any omission to disclose a fact, which would in either case entitle any insurer to avoid or otherwise reduce its liability under any policy relating to the Key Insurances.

(r) No other business. It has not engaged in any business or activities.

(s) No force majeure. No event of force majeure as defined in or contemplated by any Project Document has occurred and is continuing for the purposes of that Project Document.

(t) Taxes. The Project Vehicle has filed, or procured the filing of, all tax and informational returns that are required by any law or regulation applicable to it to have been filed by it in any jurisdiction, and has paid or discharged all taxes due and payable from it or against its assets.

(u) Budgets. The first Project Budget and the First Forecast, are consistent with the orovisions of the Transaction Documents in all material respects, and have been prepared in good faith and with due care.

(v) Options. No person has any right to call for the issue or transfer of any share capital or loan stock in the Project Vehicle other than the Sponsor.

(w) Environmental matters. It has complied with all environmental requirements.

(x) Improper payments. The Project Vehicle has not and to the best of its knowledge and belief neither the Sponsor nor any of the Project Vehicle's or the Sponsor's officers, employees or agents has paid or received any unlawful commission, inducement, bribe, pay-off or kickback directly or indirectly in connection with the Project.

(y) Share capital. 100% of its share capital is legally and beneficially owned by the Sponsor.

G. COMMON COVENANTS

The covenants of the Project Vehicle will be the following:

1. General covenants

(a) Provision of information. The Project Vehicle shall supply to the Inter-creditor Agent in sufficient copies for all the Lenders, the financial information set out under CTA.

(b) Access.

(i) The Project Vehicle shall procure that each of the Lenders and their agents be allowed (at their own risk and liability) reasonable access to inspect the Project Faciliries, the tech-

nical and statistical data, accounting books, records and other data in the possession or control of the Project Vehicle with respect to the Project Facilities as they may reasonably require and so as not unreasonably to interfere with the operations of the Project Vehicle and any Major Project Party for the purposes of performing their respective duties.

(ii) The Project Vehicle shall keep and maintain up to date in accordance with good business practice and all applicable laws all statutory books, hooks of account, bank statements and other records of the Project Vehicle.

(c) Required approvals. The Project Vehicle shall promptly obtain, maintain and comply in all material respects with the terms of, and supply certified copies to the Inter-creditor Agent of, each Required Approval.

(d) Negative pledge. The Project Vehicle will not create or permit to remain outstanding any Security Interest over its present and future assets other than Permitted Security Interests.

(e) Transactions similar to security. – Other than Permitted Security Interests, the Project Vehicle shall not (i) sell, transfer or otherwise dispose of any of its material assets on terms whereby it is or may be leased to or re-acquired or acquired by it or any of its related entities, or (ii)sell, transfer or otherwise dispose of any of its receivables on recourse terms, except for the discounting of bills or notes in the ordinary course of business, in circumstances where the transaction is entered into primarily as a method of raising finance or of financing the acquisition of an asset.

(f) Financial indebtedness. The Project Vehicle will not incur Financial Indebtedness except Permitted Financial Indebtedness.

(g) Loans and credits. The Project Vehicle shall not make any loans or provide credit except for:

(i) Credit provided pursuant to any Project Document.

(ii) Loans or credit approved in writing by the Required Lenders.

(h) Disposals. The Project Vehicle shall not either in a single transaction or in a series of transactions, whether related or not and whether voluntarily or involuntarily, sell, transfer, grant or lease or otherwise dispose of all or any substantial part of its assets.

(i) Change of business. The Project Vehicle shall not engage in any business or activities other than the Project and activities reasonably incidental thereto.

(j) Mergers and acquisitions. The Project Vehicle shall not enter into any amalgamation, demerger, merger or reconstruction.

(k) Project Works. The Project Vehicle shall use all reasonable endeavours to procure that the Project Works are constructed, completed, tested, commissioned, equipped and maintained in accordance with the Construction Contracts and the requirements relating to the Project Works in any other Project Document.

(l) Operations and maintenance.

(i) The Project Vehicle shall diligently operate and maintain, or procure the operations and maintenance of the Project Facilities, in a safe, efficient and business-like manner and in accordance with good industry practice and all material requirements of the Project Documents.

(ii) The Project Vehicle shall between 120 and 90 days before the start of each year with effect from the Commercial Operations Date (or part thereof in relation to the period from the Commercial Operations Date until the end of the year), provide to the Inter-creditor Agent a draft annual operating budget for that year (or part thereof), showing likely expenditure to be incurred in each month during that year.

(iii) The Project Vehicle shall maintain adequate working capital in accordance with good industry practice.

(m) **Project** Documents.

(i) The Project Vehicle shall comply with its obligations under the Project Documents in all material respects and the Project Vehicle shall not, without the prior written consent of the Required Lenders, agree to any material amendment, or the termination or abandonment of, or waive compliance with any material provision of, any **Project** Document.

(ii) The Project Vehicle shall not, without the prior written consent of the Required Lenders, amend its constitutional documents.

(iii) The Project Vehicle shall not request or agree to any variations to any part of the Project Works except variations which it is contractually obliged to agree to or make under the Construction Contracts.

(n) Material contracts. The Project Vehicle shall not without the consent of the Required Lenders enter into any contracts with third parties.

(o) Compliance with laws and payments of taxes. The Project Vehicle shall comply in all material respects with all laws and regulations

applicable to it and the Project Vehicle shall pay all its taxes when due.

(p) Environmental matters. The Project Vehicle shall:
  (i) Ensure that the environmental management plan stated, and the environmental mitigation and monitoring measures recommended, in the Environment Impact Assessment are followed in design, construction, implementation and maintenance of the Project.
  (ii) Comply with all applicable Environmental Laws.
  (iii) Take all necessary mitigation measures specified in the Environmental Impact Assessment to minimize the environmental impact of the Project.

(q) Share capital. The Project Vehicle shall not purchase, cancel or redeem any of its share capital or issue any further voting capital. The Project Vehicle will not register transfer of shares in the Project Vehicle in breach of Section ___.

(r) Investments. The Project Vehicle shall not acquire any share or loan capital of any corporate body or other investments except permitted investments using cash balances in the Secured Accounts.

(s) Dismbutions. The Project Vehicle will not make any Restricted Payment or make any transfer to the Restricted Payments Account (other than in respect of Recoveries) before the date of Project Completion or at any time thereafter, unless each of the following conditions has been met:
  (i) No Default has occurred or is occurring or will occur as a result of making that payment or distribution.
  (ii) The first repayment instalment under the Facility Agreement shall have been paid in full by the Project Vehicle.
  (iii) The Historic Debt Service Cover Ratios for the previous Semi-annual Period is at least ___.
  (iv) Each of the Major Maintenance Reserve Account and the Debt Service Reserve Account is fully funded to its required balances.
  (v) The Inter-Creditor Agent shall confirm satisfaction of the above conditions before a Restricted Payment is made or a transfer is made to the Restricted Payment Account.

(t) Insurance. The Project Vehicle will maintain agreed insurances (which will be specified in final documentation to reflect the advice of the Insurance Advisor) in full force and effect.

(u) Abandonment. The Project Vehicle will not abandon the project.

(v) Improper payments. The Project Vehicle will not pay or receive

and will use all reasonable endeavours to ensure that any of its officers, employees or agents will not pay or receive any unlawful commission, inducement, bribe, pay-off or kick back directly or indirectly in connection with the Project.

(w) Maintenance **of** security.

(i) The Project Vehicle shall undertake all actions reasonably necessary to:

- Maintain the Security Interests under the Security Documents to which it is a party in full force and effect at all times.
- Preserve and protect such Security Documents and protect and enforce the Project Vehicle's rights and title to the Security Assets and the rights of the Finance Parties to such Security Interests.

(ii) If the Project Vehicle shall at any time acquire any interest in property not covered by the Security Documents to which it is a party or enter into an additional Project Document, promptly upon such acquisition or execution, the Project Vehicle shall execute, deliver and record a supplement or addition to the Security Documents, satisfactory in form and substance to the Inter-creditor Agent, ensure that such Security Interest will be a valid and effective interest.

(x) Scope **of** business. The Project Vehicle shall not engage in any business or activities, either alone or in partnership or joint venture with any other person, other than those contemplated by the Transaction Documents.

2. Hedging

(a) The Project Vehicle will manage its exposure to interest rate fluctuations so as to ensure that:

(i) Between the First Drawdown Date and the date of Construction Completion, 100% of its interest rate exposure is fixed or capped.

(ii) Thereafter, at least ___% of its interest rate exposure is fixed or capped.

(b) All the hedging arrangements shall be evidenced by Hedging Agreements between the Project Vehicle and respective counter-parties. Amounts owing under Hedging Agreements will be secured pari passu with the debt under the Facilities by the Security Documents.

H. COMMON EVENTS OF DEFAULT

1. Non-Payment
   The Project Vehicle or the Sponsor does not pay on the due date any amount payable by it under the Finance Documents at the place at and in the currency in which it is expressed to be payable and such failure is not remedied.
2. Breach of other obligations
   The Project Vehicle or the Sponsor does not comply with any provision of the Finance Documents and such non-compliance is not remedied within ___ days of that person becoming aware, or being made aware.
3. Misrepresentation
   A representation or warranty by the Project Vehicle or the Sponsor made or repeated in any Finance Document is incorrect in any material respect when made or deemed to be made or repeated and which, if capable of remedy, has not been remedied within ___ days of that person becoming aware.
4. Cross-default
   (a) Any of the Project Vehicle, the Sponsor or a Construction Contractor (forso long as they remain Major Project Parties) (each a Relevant Person) fails to pay when due any Financial Indebtedness and such failure is not remedied within the period of ___ days or, if shorter any originally applicable grace period.
   (b) Any Financial Indebtedness of any Relevant Person becomes prematurely due and payable or is placed on demand as a result of an event of default (howsoever described) under the document relating to the financial indebtedness.
   (c) Any event of default (howsoever described) occurs under any document relating to Financial Indebtedness of any Relevant Person.
   (d) Any security interest securing Financial Indebtedness over any asset of any Relevant Person becomes enforceable.
5. Insolvency
   (a) Any of the Project Vehicle, the Sponsor or a Construction Contractor is, or is deemed for the purposes of any law to be, unable to pay its debts as they fall due or to be insolvent, or admits inability to pay its debts as they fall due.
   (b) Any of the Project Vehicle, the Sponsor or a Construction Contractor suspends making payments on all or any class of its debts or announces an intention to do so, or a moratorium is declared in respect of any of its indebtedness.

6. Insolvency Proceedings
   (a) Any insolvency proceedings is taken by the Project Vehicle, the Sponsor or the Construction Contractor.
   (b) A meeting of any of the Project Vehicle, Sponsor or a Construction Contractor is convened for the purpose of considering any resolution for (or to petition for) its winding-up or for its administration.
   (c) Any person presents a petition for the winding-up or for the administration of the Project Vehicle and such petition is not discharged or dismissed within ___ days of its presentation.
   (d) Any person presents a petition for the winding-up or for the administration of the Sponsor or a Construction Contractor and such petition is not discharged or dismissed within ___ days of its presentation save if the Required Lenders are satisfied that the petition has been presented for frivolous or vexatious reasons.
   (e) An order for the winding-up or administration of the Project Vehicle is made.
   (f) An order for the winding-up or administration of the Sponsor or a Construction Contractor is made and such order is not discharged or dismissed within ___ days of its date.
7. Appointment of Receivers and Managers
   Any liquidator, trustee in bankruptcy, judicial custodian, compulsory manager, receiver, administrative receiver, administrator or the like is appointed or requested to be appointed in respect of the Project Vehicle or any part of its assets.
8. Creditors' Process
   Any attachment, sequestration, distress or execution affects any material asset of the Project Vehicle and is not discharged within ___ days.
9. Cessation of Business
   Any Major Project Party (except Government of ___) ceases, or threatens to cease, to carry on all or a substantial part of its business and which, in the case of a threatened cessation, the Inter-creditor Agent determines (acting on the instructions of the Required Lenders) that such threatened cessation has a Material Adverse Effect.
10. Project Documents and Direct Agreements
   (a) Any party to a Project Document or a Direct Agreement does not comply with any provision of that Project Document or Direct Agreement and such non-compliance is not remedied within ___ days of the Project Vehicle becoming aware, or being made aware, of the same and:

(i) If an Event of Default has occurred and is continuing by virtue of such non-compliance, either:

(A) The Required Lenders determine that such non-compliance has a Material Adverse Effect; or

(B) That Event of Default is not remedied during the cure period which ends on the date on which a party may serve a Termination Notice.

(ii) If no Event of Default has occurred and is continuing by virtue of such non-compliance, the Required Lenders determine that such non-compliance has a Material Adverse Effect.

(b) Any of the following:

(i) Project Document or Direct Agreement is repudiated or is or becomes void or unenforceable (other than, in relation to a Direct Agreement only, by virtue of the breach by a Finance Party of the terms of that Direct Agreement) and such event has a Material Adverse Effect.

(ii) Obligation expressed to be assumed by a party under a Project Document or Direct Agreement is not or ceases to be a valid and binding obligation of, or is repudiated by, that party or becomes void or unenforceable or it becomes unlawful for any party to that Project Document or Direct Agreement to perform any of its material obligations in a Project Document or Direct Agreement and, in each case, such event has a Material Adverse Effect.

(iii) Project Document or Direct Agreement or any provision thereof is required by any law or regulation having the force of law to be waived, amended modified or abandoned and such event has a Material Adverse Effect.

(iv) Project Document or Direct Agreement terminates or is or becomes capable of being terminated (provided any applicable cure period under paragraph (a)(i)(B) has expired), in each case otherwise than by reason of full performance of the agreement or expiry of its term.

Save that, in relation to any Project Document except the IA, PPA, GSA or LLA, it will not be an Event of Default if, within ___ days of the Project Vehicle becoming aware, or being made aware of the same, the Project Vehicle has:

(A) Supplied to the Inter-creditor Agent a replacement contract (which shall become a Project Document) in form and substance satisfactory to the Required

Lenders and with an appropriately qualified and creditworthy contractor approved by the Required Lenders; or

(B) Agreed alternative arrangements in relation to the matters addressed in that Project Document which are satisfactory to the Required Lenders.

11. Illegality, etc.

(a) It is or becomes unlawful for any person (other than a Finance Party) to perform any of its material obligations under the Finance Documents.

(b) Any Finance Document or any material provision thereof is required by any law or regulation having the force of law to be waived, amended, modified or abandoned.

(c) Any Finance Document is repudiated or is or becomes void or unenforceable against the Project Vehicle or the Sponsor.

(d) The Lender Y Guarantee is not, or ceases to be, in full force and effect, in each case otherwise that by virtue of the breach by Lender Y Guaranteed Lender of its obligations under the Lender Y Guarantee.

12. Effectiveness of Security

Any Security Document is not effective or is alleged by the Project Vehicle or the Sponsor to be ineffective for any reason.

13. Equity Investment

(a) The Sponsor ceases to comply with its minimum ownership covenants in Section A. 6.

(b) The Project Vehicle registers the issue or transfer of any of its share capital:

(i) In circumstances where that issue or transfer was made in breach of any provision of the ESA; or

(ii). To a shareholder or transferee which has not entered into a share pledge over its shares in the Project Vehicle in accordance with the terms of the Security Documents and a deed of accession to the ESA in accordance with the ESA.

14. Completion

(a) Construction Completion has not occurred by the date — months after Financial Close.

(b) Construction Completion has not occurred by the date — months after Financial Close and at any time thereafter until Construction Completion occurs, a Forecast shows that the Project Vehicle is unlikely to meet all payments scheduled to fall due under the Facilities on the First Repayment Date.

(c) At any time, the progress of the Project Works is ___ days or more behind the progress contemplated by the Milestone Payment Schedules (as defined in and set out in the Construction Contract) and the Technical Advisor, acting reasonably and following consultation with the Inter-creditor Agent, the Project Vehicle and the Construction Contractors, concludes that there is no reasonable prospect of Construction Completion occurring on or before —— months after Financial Close.

15. Abandonment

The Project Vehicle abandons all or a material part of the Project Facilities.

16. Total Loss

All or a significant part of the Project Facilities are lost, damaged or destroyed, in each case, beyond economic repair or reinstatement or declared by the relevant insurer(s) to be a constructive total loss, provided that (for the avoidance of doubt) an Event of Default shall not occur under this paragraph 16 if the Required Lenders have approved a reinstatement plan in respect of such loss, damage or destruction under Section D.1(b)(ii)(I).

17. Government Action

(a) Any Government Authority takes any expropriation action.

(b) Any Required Approval is revoked, cancelled, not renewed, modified or amended and such event has a Material Adverse Effect.

18. Insurance

Any Key Insurance which the Project Vehicle or a Construction Contractor is required to effect under the Finance Documents is not, or ceases to be, in full force and effect or (at the time it is required to be effected) is unavailable, or is avoided or any insurer is or will be entitled to avoid or otherwise reduce its liability under any policy relating to that Key Insurance.

19. Project Events

(a) The Project Facilities are not available for operations for a continuous period in excess of —— days or for consecutive periods which periods, in aggregate, exceed ___ days in any 12-month period otherwise than by reason of:

(i) The scheduled maintenance contemplated in the PPA;

(ii) Force majeure; or

(iii) For the duration of the applicable indemnity period only, any other event which the Insurance Advisor (or the relevant insurer) confirms to the Inter-creditor Agent is an insured event under the Key Insurances.

(b) Construction of the Project Facilities is not commenced within ___ days of the date of the first drawdown under the Facilities.

20. Unfunded Cost Overrun

At any time before the date of Construction Completion, Remaining Project Costs (excluding for the avoidance of doubt, any funding of the Debt Service Reserve Accounts) exceed Available Funding at that time.

21. Ratios

(a) The Historic Debt Service Coverage Ratio is less than ___ for any two consecutive Semi-annual Periods with effect from the Commercial Operations Date.

(b) The Loan Life Cover Ratio on any Semi-annual Date in relation to which a Forecast is produced is less than ___.

22. Environmental Matters

(a) There is a change in applicable environmental law which would be likely to result in the imposition of any material liability in relation to the Project on any Finance Party.

(b) There is a change in environmental law which might cause the rights of any person in relation to any claim against the Project Vehicle in relation to non-compliance with an environmental law or Required Approval relating environmental protection to rank ahead of the rights of any Finance Party against the Project Vehicle.

23. Material Adverse Change

Any other event or series of events occurs which has a Material Adverse Effect provided that such event or series of events shall only be an Event of Default if:

(a) Following notice from the Inter-creditor Agent of the occurrence of such event or series of events, the Project vehicle does not within ___ Business Days enter into consultations with the Inter-creditor Agent (for such period as may reasonably be requested by the Inter-creditor Agent) as to possible steps of mitigation or remedy that may be taken; or

(b) After such consultation such event is not remedied or mitigated to the reasonable satisfaction of the Required Lenders within ___ days of the original notice from the Inter-creditor Agent to the Project Vehicle.

24. Construction Contractor

(a) References to a Construction Contractor in paragraphs 4–10 shall apply for so long as it remains a Major Project Party.

(b) If an event occurs in relation to a Construction Contractor which

causes a Default to arise under paragraphs 4–10 inclusive, an Event of Default shall not occur if within —— days of the Project Vehicle becoming aware, or being made aware of the same, the Project Vehicle has:

(i) Supplied to the Inter-creditor Agent a replacement contract (whichshall become a Project Document)in form and substance satisfactory to the Required Lenders and with an appropriately qualified and creditworthy contractor approved by the Required Lenders; or

(ii) Agreed alternative arrangements in relation to the matters addressed in that Project Document which are satisfactory to the Required Lenders.

25. Remedies upon an Event of Default

Upon the occurrence of an Event of Default, the Lenders may exercise one or more of the following remedies:

(a) Cancellation or suspension of the loan commitments.

(b) Acceleration of the loans.

(c) Acceleration of Base Equity and/or Contingent Equity subject to and in accordance with Section A.

(d) Enforcement of the security under the Security Documents.

(e) Enforcement of remedies under the Direct Agreements.

(f) The giving of notice regarding the payment of insurance proceeds.

(g) Lock-up of the Accounts (except the Restricted Payments Account) in accordance with Section C.

If the Lenders exercise their rights under a Direct Agreement to have an Agent or a Project Vehicle owned by the Lenders accede as a party to a Project Document at a time when an Event of Default has occurred, then provided the Project Vehicle has not breached its obligations, or an Event of Default has not arisen, under that Project Document or the Lenders are not enforcing the security under the Security Documents (excluding the exercise of such rights under that Direct Agreement), the Lenders shall not agree or instruct an Agent or that project vehicle to agree to any amendments to that Project Document without the consent of the Project Vehicle.

I. TERMS OF SUBORDINATION FOR LENDER Z SUBORDINATED FACILITY

1. Subordination and Inter-creditor Agreement

Subordinate Lender in its capacity as provider of the Subordinated

Facility will enter into the Subordination and Inter-creditor Agreement to be governed by English law in respect of the matters set out in this Schedule.

All references to Subordinate Lender in this Schedule are to it in its capacity as provider of the Subordinated Facility, unless otherwise stated.

2. Subordination

All indebtedness under the Subordinated Facility (the Subordinated Indebtedness) will be subordinated to the indebtedness under the Senior Facilities (the Senior Indebtedness) in accordance with the terms of this Schedule ___.

Senior Indebtedness will only include new moneys advanced by the Senior Lenders, in excess of the stated principal amount of the Senior Facilities in Section A of this term sheet, only if approved by Subordinate Lender.

Subordinate Lender will benefit from the Lenders' security and sponsor support package but may not enforce that security or support unless in accordance with this Schedule ___.

3. Undertakings by the Company

The Company will undertake not to make payments to Subordinate Lender unless permitted under this Schedule and to otherwise comply with the terms of the subordination set out in this Schedule ___.

4. General Undertakings by Subordinate Lender

Save as specifically permitted in this Schedule, Subordinate Lender will undertake not to do any of the following:

(a) Demand or receive payments of Subordinated Indebtedness.

(b) Permit the Subordinated Indebtedness to benefit from any security, guarantee or other assurance other than as contemplated under the Security Documents or the ESA.

(c) Exercise, or instruct anyone else to exercise, any remedy (including rights of acceleration and enforcement of security) exercisable upon an Event of Default under the Subordinated Facility.

(d) Set off the Subordinated Indebtedness against any amount payable by it to the Company.

(e) Take, or instruct anyone else to take, any action of whatsoever nature against the Company to recover the Subordinated Indebtedness, including:

(i) Court process to enforce compliance with the terms of the Subordinated Indebtedness.

(ii) Winding-up, liquidation or similar proceedings.

(iii) The levying of distress, execution or other creditors' proc-

ess against the Company or its property in respect of the Subordinated Indebtedness.

(iv) Amend the terms of the Subordinated Facility.

5. Permitted Subordinated Payments

The Company may pay and Subordinate Lender may receive the payments of Subordinated Indebtedness on or after their due date provided that there are sufficient funds in the Proceeds Account, the Subordinated Debt Service Payment Account and/or the Subordinated Debt Service Reserve Account on the date of payment having first applied the Order of Priority (as set out in Section C of this term sheet).

6. Subordinated Debt Service Reserve Account

The Company will establish and maintain a Subordinated Debt Service Reserve Account to hold an amount equal to the next instalment of principal and interest due under the Subordinated Facility. The account will be funded in accordance with Section C. For the avoidance of doubt, the funding of each Debt Service Reserve Account from Project Costs shall be pro rata (calculated with respect to the original loan commitments) from funding available under the Facilities, Base Equity and Contingent Equity.

The Subordinated Debt Service Reserve Account will be exclusively dedicated to Subordinated Indebtedness (including upon the acceleration of the Facilities or liquidation of the Company).

7. Voting under the Senior Facilities

Section J. 3 sets out the voting regime under the Senior Facilities. Subordinate Lender (in its capacity as provider of the Subordinated Facility) will not have voting rights under the Senior Facilities.

8. Amendments of Terms of the Senior Facilities

The Senior Lenders may not amend the terms of the Senior Facilities without the prior written agreement of Subordinate Lender if the amendment would have the effect of:

(a) Increasing the amount of a principal repayment instalment under a Senior Facility.

(b) Increasing the rate of interest, default or overdue interest, guarantee fee, or other fees under a Senior Facility.

(c) Bringing forward the date for any payment referred to in (a) and (b) above.

(d) Varying the amount of a Senior Lender's commitment under a Senior Facility.

(e) Granting a security, surety or other support in favour of a Senior Lender other than previously existing under the Security or Equity Support Agreement and the other Finance Documents.

Subject to agreement between the Senior Lenders, Subordinate Lender and the Company, final documentation may also specify an exhaustive list of other amendments which could be prejudicial to Subordinate Lender and which therefore would require Subordinate Lender's consent.

9. Amendments of the **Terms** of the Subordinated Facility

Subordinate Lender may not amend the terms of the Subordinated Facility without the prior written consent of all Senior Lenders where the amendment would have the effect of:

(a) Increasing the amount of a principal repayment instalment under the Subordinate Lender's Facility.

(b) Increasing the rate of interest, default or overdue interest, guarantee fee, or other fees under the Subordinated Facility.

(c) Bringing forward the date for any payment referred to in (a) or (b) above.

(d) Varying the amount of Subordinate Lender's commitment under the Subordinated Facility.

(e) Granting a security, surety or other support in favour of Subordinate Lender other than previously existing under the Security Documents or the ESA and the other Finance Documents.

Subject to agreement between the Senior Lenders, Subordinate Lender and the Company, final documentation may also specify an exhaustive list of other amendments which could be prejudicial to the Senior Lenders and which therefore would require the Senior Lenders' consent.

10. Assignments and Sell-Downs

(a) The Senior Lenders may transfer their rights and/or obligations under the Senior Indebtedness, in accordance with Section J. 2(a):

(i) During primary syndication of the Senior Facilities, without restriction;

(ii) Thereafter until the end of the Availability Period, to banks or financial institutions which meet credit rating criteria to be specified in final documentation; and

(iii) Thereafter, without restriction, provided in each case the transferee accedes to the Subordination and Inter-creditor Agreement and the CTA.

(b) The Subordinate Lender may transfer its rights and/or obligations under the Subordinated Indebtedness, in accordance with Section J. 2(b):

(i) If the transfer is made after the Availability Period and does not involve more than ___% of the principal amount outstanding under the Subordinated Facility and, after the transfer, Subordinate Lender can continue to exercise effective control over acceleration of the Subordinated Facility and other remedies permitted under paragraph 12 below; or

(ii) Otherwise with the consent of the Senior Lenders, provided in each case the transferee accedes to the Subordination and Inter-creditor Agreement and the CTA.

Both the Senior Lenders and Subordinate Lender may enter into sub-participations in respect of the Senior Indebtedness and the Subordinated Indebtedness without restriction.

11. Satisfaction of Conditions Precedent and Rights of Drawstop
As per Section E.

12. Permitted Enforcement Action by Subordinate Lender
If:

(a) A payment default occurs under the Subordinated Facility; and

(b) Payment default and any subsequent payment defaults have not been remedied in full within ___ months of the date of the original payment default; and

(c) The total defaulted amount under the Subordinated Facility exceeds U S $m before the eighth anniversary of Financial Close or US$___ m thereafter; or

(d) The Senior Lenders accelerate the Senior Indebtedness after an Event of Default, Subordinate Lender may, so long as the payment default is continuing, at its option accelerate the Subordinated Indebtedness and may also enforce other remedies which it is otherwise prevented from enforcing under paragraph 4 above.

Any amounts received by virtue of the acceleration or other action under this paragraph **12** will be applied in accordance with paragraph 13 below.

13. Application of Proceeds
The proceeds of all Security will be applied:

First, to all costs and expenses of enforcement incurred by the Security Trustee.

- Second, to all costs and expenses of enforcement incurred by the other Senior Finance Parties.
- Third, to the Senior Indebtedness in such order as the Senior Lenders may agree in the CTA.

- Fourth, to all costs and expenses of enforcement incurred by Subordinate Lender.
- **Fifth,** to the Subordinated Indebtedness in such order as Subordinate Lender may determine.
- Sixth, to the Company or as the Company may otherwise direct.

14. Subordination upon Insolvency

Upon insolvency of the Company, the Subordinated Indebtedness will be subordinate to the Senior Indebtedness. save that balances remaining in the Subordinated Debt Service Payment Account and Subordinated Debt Service Reserve Account shall be exclusively dedicated to the Subordinated Indebtedness.

15. Other Provisions

The Subordination and Inter-creditor Agreement will contain other customary provisions for a subordination of this nature including:

(a) An undertaking by each Lender to turn over any payments received in breach of the terms of the Subordination and Inter-creditor Agreement.

(b) Provisions relating to the filing of claims and other matters relating to the insolvency of the Company.

J. MISCELLANEOUS COMMON FINANCING TERMS

1. Miscellaneous

Usual clauses relating to increased costs, gross up, market disturbance, illegality, reimbursement of stamp duties and legal and other out of pocket expenses (including as referred to in the Lead Arranger's mandate letter), breakage costs, etc.

2. Assignment

(a) Subject to Subordinated Lender's rights of consent set out in Schedule ___, Lender Y Guaranteed Lender or a Lender Y Participant (subject to the terms of the Lender Y Participation Agreement) may, at any time, assign, transfer or novate any part of its commitment and/or any of its rights and/or obligations under the Finance Documents to another bank or financial institution specified in a list to be agreed between the Lead Arranger and the Sponsor before Financial Close or otherwise with the consent of the Company (not to be unreasonably withheld or delayed).

(b) Subject to the Senior Lenders' rights of consent set out in Schedule ___, Subordinated Lender may assign, transfer or novate any part of its commitment and/or any obligation under the Finance Docu-

ments to another bank or financial institution following consultation with the Company.

(c) Subject to Subordinated Lender's rights of consent set out in Schedule ___ and the terms of the Lender Y Participation Agreement, Lender Y may assign, transfer or novate any part of its commitment and/or any obligation under the Finance Documents (except the Lender Y Guarantee) to another bank or financial institution following consultation with the Company.

(d) The Company may not assign or transfer its rights or obligations under the Finance Documents.

(e) Nothing in this paragraph 2 or Schedule ___ shall prevent a Lender or Lender Y Participant entering into sub-participations in respect of its rights and/or obligations under the Finance Parties.

3. Decision-making among the Finance Parties

3.1 General

The following decision-making arrangements shall subsist between the Finance Parties and all references to "Required Lenders" in this term sheet shall be construed in accordance with this paragraph **3.** Nothing in this paragraph 3 shall override anything in Schedule ___.

3.2 Satisfaction of Conditions Precedent and Rights of **Drawstop**

(a) Section E sets out the decision-making in respect of the satisfaction or waiver of all conditions precedent.

(b) No Lender will be obliged to Lend if a drawstop is in effect under any Facility.

3.3 Amendments and Waivers

(a) Subject to paragraphs (e) and (f) below:

(i) any term of, or matter dealt with under, the CTA and any other Finance Document (other than a Finance Document referred to below in this paragraph **3.3)** may be amended or waived or supplemented with the agreement of the Company and the Majority Senior Lenders.

(ii) Any term of, or matter dealt with under, the Facility Agreement for the Lender Y Principal Loan (other than terms of the CTA incorporated into that Facility Agreement) may be amended or waived or supplemented with the agreement of the Company and Lender Y.

(iii) Any term of, or matter dealt with under, the Facility Agreement for the Lender Y Complementary Loan

(other than terms of the CTA incorporated into that Facility Agreement) may be amended or waived or supplemented with the agreement of the Company and (subject to the terms of the Lender Y Participation Agreement) Lender Y.

(iv) Any term of, or matter dealt with under the Facility Agreement for the Lender Y Guaranteed Facility (other than terms of the CTA incorporated into that Facility Agreement) may be amended or waived or supplemented with the agreement of the Company and (subject to Lender Y's rights of consent under Schedule ___) the Majority Lender Y Guaranteed Lenders.

(v) Any term of, or matter dealt with under, the Facility Agreements for the Subordinated Lender Senior Facility and the Subordinated Facility (other than terms of the CTA incorporated into that Facility Agreement) may be amended or waived or supplemented with the agreement of the Company and Subordinated Lender.

(vi) Any term of, or matter dealt with under, the Subordination and Inter-Creditor Agreement may be amended or waived or supplemented with the agreement of the Company (except in relation to certain clauses mutually agreed between the Company and the Finance Parties in final documentation), all Senior Lenders and (except in the case of the Clause dealing with pro rata sharing among Senior Lenders and other clauses mutually agreed between the Company and the Finance Parties) Subordinated Lender.

(vii) Any term of, or matter dealt with under, a Hedging Agreement may be amended or waived or supplemented with the agreement of the Company, the hedge counter-party and the Majority Senior Lenders.

(b) Any term of, or matter dealt with under, the Lender Y Guarantee may only be amended, waived or supplemented with the agreement of Lender Y and each Lender Y Guaranteed Lender. The Facility Agreement for the Lender Y Guaranteed Facility will also contain restrictions on the Lender Y Guaranteed Lenders right to agree amendments and waiv-

ers under the Lender Y Guarantee where such amendments and waivers could reasonably prejudice the interests of the Company.

(c) Any term of, or matter dealt with under, the Lender Y Direct Agreement may only be amended, waived or supplemented with the agreement of Lender Y and the Company (subject also to the Majority Lender Y Guaranteed Lenders' rights of consent under Schedule ___).

(d) Any term of, or matter dealt with under, the Government of ___ Counter Indemnity may only be amended, waived or supplemented with the agreement of Lender Y and the Government of ___.

(e) Any amendment or waiver which relates to:

(i) The definition of Majority Senior Lenders or the definition of Required Lenders.

(ii) Any change to the date for, or change in the amount of, or change in the currency of, any payment to a Senior Lender.

(iii) Any increase or decrease in a Senior Lender's commitment under a Senior Facility (otherwise than by a transfer in accordance with the terms of the Finance Documents) or an extension to its availability or the imposition on a Senior Lender of an additional obligation to Lend money or provide any other form of credit.

(iv) Any change in the interest rates or fees payable to a Senior Lender.

(v) A term of a Finance Document which expressly requires the consent of each Senior Lender or each Lender.

(vi) The clause of the Subordination and Inter-Creditor Agreement governing amendments and waivers.

(vii) The release of any asset from the security interests created by any of the Security Documents.

(viii) The clause of the Finance Documents covering the order of distribution on partial payment by the Company of amounts due on the relevant due date.

(ix) The covenants relating to:

- the negative pledge [Section G. 1(d)]
- disposals of assets [Section G. 1(h)]

- investments [Section G. 1(r)]
- restricted Payments [Section G. 1(s)]
- improper payments [Section G. 1(v)]

may not be effected without the consent of each Senior Lender. If any of the above Sections specifically contemplate action being taken with the consent of the Required Lenders, any such consent will constitute a waiver of the covenant.

(f) Any amendment or waiver which relates to:

(i) The definition of Required Lenders.

(ii) A term of a Finance Document which expressly requires the consent of each Lender or Subordinated Lender.

(iii) The release of any asset from the security interests created by any of the Security Documents.

(iv) The clause of the Finance Documents covering the order of distribution on partial payment by the Company of amounts due on the relevant due date.

(v) The covenants relating to:

- Controls on the level of Operating Costs [Section C. 11].
- The negative pledge [Section G. 1(d)].
- Financial Indebtedness [Section G. 1(f)].
- Disposals of assets [Section G. 1(h)].
- Change of business [Section G. 1(i)].
- Mergers and acquisitions (Section G. 1(j)), save for arrangements relating to a voluntary reorganization of the Company, the terms of which have been agreed between the Company and the Majority Senior Lenders and which could not reasonably prejudice Subordinated Lender's position as a Subordinated Lender (and without prejudice to Subordinated Lender's rights under applicable law to approve the arrangement).
- Amendments and waivers to Project Documents [Section G. 1(m)] where the relevant amendment or waiver (i) could reasonably put the Company in a worse financial position (including where the amendment or waiver has the effect of reducing the amount due from a contract counter-party upon termination of a Project Document) or im-

pose materially more onerous obligations on the Company or materially and adversely affect the performance of the Power Station; or (ii) arises under the PPA. (For avoidance of doubt, the Majority Senior Lenders shall exercise all rights of the Required Lenders under the Finance Documents to consent to, or direct, termination of the Project Documents but shall not agree, or permit or direct the Company to agree, to waive any claim for any amount of a termination sum or compensation due from the relevant contract counterparty as expressly provided in the relevant Project Document.)

- Amendments to constitutional documents [Section G. 1(m)(ii)].
- Variations to the Construction Contracts where the relevant variation could reasonably put the Company in a worse financial position or impose materially more onerous obligations on the Company or materially and adversely affect the performance of the Power Station.
- Investments [Section G. 1(r)].
- Restricted Payments [Section G. 1(s)].
- Abandonment of the project [Section G. 1(u)].
- Improper payments [Section G. 1(v)].
- The undertakings relating to required hedging [Section G. 2(a)].

(vi) The clause of the Subordination and Inter-Creditor Agreement governing amendments and waivers, may not be effected without the consent of Subordinated Lender. If any of the above Sections specifically contemplate action being taken with the consent of the Required Lenders, any such consent will constitute a waiver of the covenant.

3.4 Consents

Subject to paragraph 3.5 below, in granting any consent (e.g. in relation to a reserved discretion identified in Schedule ___) or exercising any discretion, the Inter-Creditor Agent shall (if no instructing body is specified) be fully protected if it acts in accordance with the instructions of the Majority Senior Lenders, provided that:

(i) In relation to the reserved discretions in Schedule , Part ___, Subordinated Lender shall have equal rights of consultation with the Senior Lenders.

(ii) In relation to the reserved discretions in Schedule ___, Part ___.

(A) The Majority Senior Lenders shall consult with Subordinated Lender and consider in good faith Subordinated Lender's views before directing the Inter-Creditor Agent to exercise rights under Schedule ___, Part ___; and

(B) The Majority Senior Lenders shall not direct the Inter-Creditor Agent to give consent for the Company to agree to:

(I) Any assignment of rights or obligations of the contract counter-parties under the Project Documents;

(II) Opt for contract price abatement rather than the payment of liquidated damages under the Construction Contracts;

(III) Consent to the appointment of another contractor to complete the works under Clause ___ of the Installation, Erection and Commissioning Contract and the Supply Contract;

(IV) Approve a financial institution which does not meet the specified credit rating for issuance of performance security under Clause ___ the guarantee and coordination agreement referred to in the definition of "Construction Contract"; or

(V) A settlement or compromise of any claim exceeding US$___ m under Schedule ___, Part ___, paragraphs, without the consent of Subordinated Lender; and

(iii) In relation to the reserved discretions in Schedule ___, Part ___, the Majority Senior Lenders shall consult with Subordinated Lender and consider in good faith Subordinated Lender's views before directing the Inter-Creditor Agent to exercise rights under Schedule ___, Part ___

Any right of the Required Lenders to reject a draft Operating Budget under Section G. 1(l)(ii) shall be exercised by Subordinated Lender and the Majority Senior Lenders.

3.5 Protections for Lender Y Guaranteed Lenders

(a) Each Finance Party will agree in the Subordination and Inter-Creditor Agreement that:

(i) The Lender Y Guaranteed Lenders will be entitled to exercise their rights under the Lender Y Guarantee without restriction by the other Finance Parties;

(ii) If requested by the Lender Y Guarantee Agent (acting on the instructions of the Majority Lender Y Guaranteed Lenders), the Inter-Creditor Agent shall instruct the Company (pursuant to Schedule ___, Part ___) to:

(A) Make a demand under the Government of ___ Guarantee (Clause ___ Government of ___ Guarantee); and

(B) Provide a signed certificate (Clause ___ Government of ___ Guarantee); and/or

(iii) If the Lender Y Guarantee Agent (acting on the instructions of the Majority Lender Y Guaranteed Lenders) has instructed the Inter-Creditor Agent to give a direction to the Company to take action or refrain from taking action which the Inter-Creditor Agent is permitted to give under the Finance Documents (including the exercise of positive and negative reserved discretions under Schedule) and such action or restraint of action is a stated precondition to the Lender Y Guaranteed Lenders making a demand under the Lender Y Guarantee or otherwise preserving their rights under the Lender Y Guarantee, the Inter-Creditor Agent shall forthwith inform each of Lender Y and Subordinated Lender and shall, no earlier than five Business Days after such notification, give such a direction to the Company.

(b) If the Inter-Creditor Agent is instructed to take action under paragraph (a)(ii) or (iii) above, the Lender Y Guaranteed Lenders shall be solely responsible for indemnifying it in respect of such action.

(c) For the avoidance of doubt, any subrogation to the rights of the Lender Y Guaranteed Lenders by Lender Y under the terms of the Lender Y Guarantee shall not affect or alter the rights of the Lender Y Guaranteed Lenders under this paragraph **3.5.**

3.6 Action under the Government of ___ Counter Indemnity
Nothing in this paragraph *3* shall restrict or prevent Lender Y from enforcing or preserving its rights under the Government of ___ Counter Indemnity in such manner as it sees fit.

3.7 Enforcement
The remedies available to the Lenders under Section H. 25 shall be exercised upon the instructions of the Majority Senior Lenders.

3.8 Repayment of the Senior Lenders
Following the irrevocable and unconditional discharge of all liabilities owed by the Company to the Senior Lenders under the Finance Documents, Subordinated Lender shall exercise all remaining rights under the Finance Documents, including under this Section J.

4. Other Inter-Creditor Arrangements
The Finance Documents will contain terms relating to the appointment of Agents, sharing of Security and application of the proceeds of Security, pro rata sharing, reflecting among other things (i) Lender Y's right of subrogation under the Lender Y Guarantee in accordance with paragraph ___ of Schedule ___; and (ii) Lender Y's status as preferred creditor under the treaty establishing the Lender Y. [If, following termination of the IA, Lender Y is liable to pay the Shortfall Amount (as defined in Schedule, paragraph ___) in instalments in accordance with Schedule ___, paragraph ___, then the Company shall be liable to pay to the Lender Y Guaranteed Lenders, by way of liquidated damages, upon acceleration of the Lender Y Guaranteed Facility (which shall be permitted in such circumstances notwithstanding anything to the contrary in Section J. *3)* an amount equal to the net present value (computed using a discount rate to be agreed in final documentation) of the aggregate amount the Lender Y Guaranteed Lenders would have received if, during the period between termination of the IA and the scheduled final maturity date of the Lender Y Guaranteed Facility, interest would have accrued on the outstanding Shortfall Amount at the rate of ___% per annum. The Lender Y Guaranteed Lenders' claim for such amount shall rank ahead of any other claim for interest (including default interest) and principal by the Lenders.]

5. Documentation
In form and substance satisfactory to the Company and the Lenders.

6. Governing Law and Jurisdiction
English, save where specified in Section B or as otherwise agreed between the Lenders and the Company in final documentation.

GLOSSARY

Abandon
To withdraw unilaterally from a project.

Acceleration
Acceleration is one of the remedies typically provided to a lender following the occurrence of a breach of the finance documents. Acceleration causes the indebtedness to become immediately due and payable in full, provided the lenders are willing to declare an event of default, without regard to the schedule of payments otherwise applicable to the indebtedness.

Account bank
Either the onshore account bank or the offshore account bank identified in the accounts agreement where the project accounts are maintained.

Accounts
Accounts which the project vehicle is authorized by the lenders to maintain under the accounts agreement (AA). In a developing country context, examples of permitted accounts, currency and location are shown in Section C. 1, page 533.

In an industrialized country, the number and types of accounts would be similar but all would be maintained in one currency within the country.

Accounts Agreement (AA)
The agreement to be entered into by the borrower, the account banks and the intercreditor agent in relation to the accounts to be maintained.

Accreting swaps
In an accreting swap, the notional principal increases over the early life of the swap, particularly during the construction period of a greenfield project where several disbursements are made during the loan availability period.

Accrued interest
The interest earned or accruing daily on a loan, or note, between two interest payment dates. Market dealings in notes normally take place on an accrued interest basis so that, when a note is sold, the purchase price payable is equal to the aggregate of the principal amount of the note and any interest which has been earned hut not paid.

Acid test ratio
This ratio is also known as the Quick Ratio. This ratio nets out all current asset items which have low levels of liquidity such as inventories. It is a measure of how quickly a borrower can pay off its short-term obligations without relying on the

sale of relatively illiquid assets. It is arrived at by taking current assets, less inventories and dividing this numerator by current liabilities.

Acquisition finance
A type of financing, derived from project finance, which is used to acquire companies.

Administrative agent
The arranger of a syndicated transaction.

Advance payment guarantee
An arrangement under which (a) the sponsor(s) provides funds to a contractor to cover purchase of equipment and early organizational expenses needed to get the construction underway; and (b) the contractor provides a guarantee of repayment for this advance payment in the event of its non-performance.

Advanced payments (for oil, gas or mineral reserves)
Advanced payment, or forward purchase, agreements involve the purchase and sale of oil, gas or other commodity prior to its production.

Affiliate
A related company.

Agency agreement
A legal agreement entered into by the borrower, the lenders and the agent, governing the rights and responsibilities of the agent(s) in the transaction. An agency agreement is needed for a syndication, or when a group of lenders enters into an arrangement with a security trustee or an inter-creditor agent.

Agency fee
An annual fee calculated as a lump sum per bank, per annum, payable by the project to compensate the agent for the logistic and operational work performed under the loan agreement.

Agent
A person who acts on behalf of another person (principal). In a syndicated loan, for example, the agent is the bank which is responsible for administering the loan, collecting and distributing all payments. See ***Security trustee*** or ***Inter-creditor agent.***

All-in cost
The overall cost of the transaction to the borrower including the impact of upfront fees and commitment fees.

A-loan
Loan funded with a multilateral institution's own resources. See B-loan.

Alternative interest rate clause
A clause usually incorporated in financing documents making provision for interest to be calculated on a different basis (usually the lenders' own cost of funds) in the event that the chosen index (e.g. LIBOR) cannot be determined due to a market disruption.

Amendment and waiver agreement
An amendment and waiver agreement is entered into among the lenders and the

project vehicle to incorporate amended and waived conditions precedent (CPs) to first and subsequent disbursements.

Amortization
Reduction of the loan amount outstanding according to the repayment schedule contained in the loan agreement.

Amortized repayment
The individual loan facility agreements (ILFAs) provide for an amortization schedule defining the frequency of repayment and the amounts payable at each repayment date. In most cases, the project vehicle starts repaying loans (principal plus interest) in semi-annual instalments, starting six months after the completion of the availability period.

Amortizing swaps
An amortizing swap is used for a loan that has scheduled repayments of principal over the tenor of the loan, rather than a bullet repayment structure. In this case, the swap's notional principal decreases over the life of the swap. See *Notional principal.*

Annual report
A report to shareholders prepared each year by a corporation which contains financial statements (balance sheets, income statements, sources and uses of funds, etc.), auditor's opinion, president's letter and other information about the operations of the corporation.

Approval notice
A notice delivered by the project vehicle to seek lenders' consent on a given issue.

Arrangement fee
A fee paid to a mandated bank, or group of banks, for arranging a transaction. It includes fees to be paid to participating hanks.

Arranger
A bank or other financial institution responsible for originating and syndicating a transaction. The arranger always has a senior role, is often the agent and usually participates in the transaction although not always at the most senior level.

Asian Development Bank (ADB)
A multilateral institution that has 36 Asian states and 16 industrialized countries as members. Its private sector window offers equity, debt and R-loan syndications.

Asset
The physical project and its associated contracts, rights, and interests of every kind, in the present or future, which can be valued or used to repay debt.

Assignment
A transfer of legal title to an asset often effected for security purposes.

Audit
An independent examination of the financial statements of a project vehicle; also, the conduct of project studies/projections.

Availability period

The availability period is defined as that period, under the terms of the common terms agreement (CTA) or the individual loan facility agreement (ILFA), that the project vehicle has been given to draw down fully the loan proceeds subject to its meeting the related conditions precedent (CPs).

Available funding

During construction, the term is used to define the sum of the following:

- The undrawn and uncalled lenders' debt commitments.
- The then aggregate amount of undrawn sponsor's base and contingent equity commitment.
- The amount standing to the credit of proceeds account, petty cash account and other sub-accounts of the compensation account that may be utilized to pay remaining project costs.
- Where an insurable event has occurred and the relevant insurer confirms that the proceeds of any delay in start-up will be received by the project vehicle before the project completion.

Amount in excess of the base and contingent equity that the inter-creditor agent agrees has been committed unconditionally by the sponsor to the project vehicle for meeting remaining project costs.

Average loan life

Average maturity for all repayments, usually weighted by amounts outstanding.

Avoided cost

Avoided cost is the state-of-the-art term originally used to define the difference between the price offered by independent power producers (IPPs), under US Public Utilities Regulatory Policies Act (PURPA) guidelines, to generate power for sale to a given utility net of the latter's cost of producing the same power. The term is now used more generically to include other types of infrastructure projects such as bulk water supply.

Back-to-back letter of credit

A letter of credit (L/C) issued on the strength of another letter of credit (backing credit). It is therefore an extension of the terms and conditions of the backing credit. To qualify as a back-to-back letter of credit, the terms must he identical to those of the backing credit except for any or all of the following features: the name of the beneficiary, the account party, the amount which cannot be more than that contained in the backing credit, the validity date and the insurance amount.

Balance sheet

An accounting statement that presents the assets, liabilities and equity of a borrower.

Balloon payment

The final payment in cases where a term loan is amortized in equal periodic instalments of principal except for the final payment which is substantially larger than the other payments.

Base equity

The monetary commitment made by the sponsor(s) to the project vehicle for the purposes of covering an agreed percentage/level of budgeted project costs. The amounts, through agreement with the lenders, that can be made in the form of equity or shareholders loans. See Project costs.

Basis point

One-hundredth of a percent (i.e., 0.01%), typically used in expressing rate or yield differentials.

Basis rate

The rate used as a basis for the calculation of interest under a loan facility.

Basis rate swaps

Unlike the standard swap (one leg fixed, the other variable), both legs of a basis rate swap are variable. However, the variable legs of such a swap are defined in terms of two distinct interest rate indices, e.g. US prime rate versus LIBOR.

Best efforts arranger

A bank, or other lender, willing to organize a syndication of the project's debt but unwilling to guarantee the results by making up the balance between the debt sought and actually placed.

Bid bond

A financial guarantee given in support of the obligation of a bidder to sign a contract, if it is awarded the bid.

B-loan

A loan arranged, or syndicated, by a multilateral institution with participation from private financial institutions, e.g. under the B-loan programme, the International Finance Corporation (IFC) is the lender of record relative to the project vehicle and the host government. At financial closing, or shortly thereafter, IFC syndicates its B-loan exposure to third-party financial institutions. By maintaining its identity as "lender of record" in any given transaction, IFC bestows on the participating financial institutions its preferred lender status. It should he duly noted that the B-loan is not a formal guarantee in any sense. See *International* Finance Corporation and A-loan.

Bond

A negotiable note or certificate which is evidence of indebtedness. It is a legal contract sold by one party (the issuer) to another (the investor) promising to repay the holder the face value of the bond plus interest at future dates. Bonds are also referred to as notes or debentures. The term note, however, usually implies a shorter maturity than a bond. Bond issues can be secured by a mortgage on a specific property, plant or piece of equipment.

Book value

The value at which an item is reported in financial statements. See ***Hidden*** value.

Bootstrapping

Bootstrapping is the process of creating a theoretical spot-rate curve for coupon securities.

Borrower
An institution or individual that raises funds in return for contracting an obligation to repay those funds, together with payments of interest, at determined payment periods over the life of a facility.

Break funding
Break funding is referred to as the penalty the project vehicle has to pay to the lenders if it prepays, or cancels, loans.

Breakeven analysis
Analysis, the purpose of which is to identify that level of sales at which expenses and revenues are equal.

Bridging loans
In Project Finance, this term usually refers to loans provided by the sponsor(s) to cover certain project costs which otherwise would have been payable through liquidated damages (LDs) or insurance. Bridging loans are repaid to sponsor(s) immediately once recoveries of LDs or insurance is effected provided no default has occurred, or is continuing, and the Debt Service Reserve Account (DSRA)is paid up. In the US and other industrialized countries the term can refer to loans provided by a construction lender, replaced upon a successful commissioning by permanent lenders.

Build-and-Transfer (BT)
See Appendix **1.1.**

Build-Lease-Transfer(BLT)
See Appendix **1.1.**

Build-Operate-Transfer (BOT)
See Appendix **1.1.**

Build-Own-Operate (BOO)
See Appendix **1.1.**

Build-Transfer-Operate (BTO)
See Appendix **1.1.**

Bullet repayment
Repayment of a debt in a single instalment at its final maturity.

Business day
In a project finance agreement, a business day means a day (other than a Saturday or a Sunday) on which banks are open for business in London and New York and the country where the project is located.

Buydown
A once-off payment by the engineering, procurement and construction (EPC) contractor out of liquidated damages (LDs) to reflect future cash flow losses from anticipated and sustained underperformance. The LDs are often used to "buy down" the project finance loan.

Buyer credit
An arrangement under which a bank in the supplier's country lends to the buyer, or

a bank, in the buyer's country to enable the buyer to make payments due to the supplier under a contract to supply goods and/or services.

Calculations and forecasting agreement
The agreement to be entered into between the borrower and the inter-creditor agent (on behalf of all the lenders) in relation to the periodic calculation of relevant financial ratios such as the debt service cover ratio (DSCR) and loan life cover ratio (LLCR) to determine whether the borrower may pay dividends.

Call
An option to purchase an asset at a set price at some particular time in the future.

Call money
Interest-bearing bank deposits that can be withdrawn on 24-hour notice.

Call option
The right, but not the obligations, to buy from the writer of an option over a specified period, a specified property or amount of securities at a specified price. See ***Put*** option.

Call procedure
An indenture provision preventing a security (usually a bond or preferred stock) from being redeemed earlier than a certain time after its issue.

Call **swaption**
A call swaption gives the buyer the right, but not the obligation, to enter into an interest rate swap during a specified period, at which time the buyer agrees to pay a variable rate calculated on an agreed notional principal and receive a fixed rate on the same amount. If the option is exercised, the writer of the option agrees to pay a fixed rate to the buyer and receive a variable rate calculated on the notional principal. The buyer of the call pays the writer a premium for this right. See ***Put*** swaption.

Cap
An agreement between two parties whereby one party, for an upfront premium, agrees to compensate the other at designated times if the underlying designated price or rate is greater than the strike level.

Capacity contracted based pool
In a capacity contracted based pool, all distributors and large users contract directly with the generators for the purchase of capacity. They are allowed to buy in the spot market only the difference between their contracted capacity and, if larger, their anticipated demand during each period.

Capacity price or **tariff**
Generally, capacity price is payable per unit of dependable capacity at a level demonstrated through testing upon commissioning of the facility and not less often than annually thereafter. Capacity price is usually fixed at the time of execution of the power purchase agreement (PPA) (or at the time of bid submission if the capacity is procured through a competitive bidding procedure), but some adjustment in the tariff is required at the time of financial closing and periodically thereafter depending upon testing results. Capacity price is usually structured so as to include

operating expenses, debt service and a return on, and often of, equity. See Energy price.

Capital
The total amount invested in a project.

Capital expenditure
Long-term expenditures for plant and equipment.

Capital lease
The leased asset and the corresponding liabilities are fully disclosed in lessee's balance sheet.

Capital markets
A broad term that encompasses the markets for tradable debt, securities and equity, as distinct from private markets or banks.

Capital structure
The financing mix of a borrower. The more debt in relation to equity, the more financial leverage, or gearing, the firm is said to have.

Carve-out
An exception to a general rule, provision or covenant. This could also refer to a production payment carved out of a specified share of production from a certain oil, gas or mining property.

Cash Available for Debt Service (CADS)
The amount of cash available to service debt after all essential operating expenses are met.

Cash deficiency guarantee
A cash deficiency guarantee requires that the project sponsor(s) contribute additional capital to the project vehicle to the extent cash deficiencies materialize due to pre-agreed causes.

Cash flow
A measure of liquidity consisting of net income plus non-cash expenditures (depreciation, depletion, etc.). In project appraisal analysis, cash flow is analysed to assess the probability that debt repayment commitments can be met without refinancing; that regular dividends will be made in times of decreasing earnings; or that plant and equipment can be modernized, replaced or expanded without affecting adversely the project's viability.

Cash waterfall provisions
The order of priority followed by the project vehicle for the purpose of meeting its obligations under the loan and finance documents. A typical order of priority is as follows:

- Operating expenses
- Major maintenance reserve
- Senior debt service
- Senior DSRA
- Subordinated debt service

- Subordinated DSRA
- Restricted payments

CDC

Commonwealth Development Corporation, a British development finance institute similar to the US Overseas Private Investment Corporation (OPIC).

Ceding authority

A public, or private, agency or enterprise, authorized to award a large contract.

CEND

An acronym representing certain political risks such as confiscation, expropriation, nationalization and deprivation (collectively, CEND perils).

Certificate of Deposit (CD)

A negotiable, interest-bearing instrument evidencing a time deposit with a commercial bank on which the bank pays principal at maturity. Interest may be paid at intervals or at maturity.

Charge

That document evidencing mortgage security. **A** fixed charge refers to a defined set of assets and is usually registered; a floating charge refers to security over other assets which are variable, e.g. cash in bank and inventory, which crystallizes only upon a default.

Civil law

Civil Law or Code Civil is the code which embodies the civil law of France as promulgated in 1804. See footnote 5, Chapter 12.

Clawback guarantee

A clawback guarantee, when provided by project owners (including project sponsor(s) and any passive equity investors), requires that these parties return to the project vehicle any dividends received if there is a shortage of funds to meet defined operating expenses such as capital improvements, debt service and similar needs.

Club

A group of underwriters who do not need to proceed to syndication.

Co-generation

Besides electricity, another energy is produced and sold from the waste heat of a power plant, e.g. steam, hot air and refrigeration.

Collateral

Assets pledged as security under a loan or lease to assure repayment. See Security.

Combined cycle

The cycle by which the waste heat from an electric generation unit is recovered as steam, which is then used to generate more electricity through a steam turbine.

Commercial bank

A bank that both accepts deposits and grants loans.

Commercial Operations Date (COD)

The date on which the independent engineer (IE) certifies that the facility has com-

pleted all required performance tests and/or is built to the specifications outlined in the engineering, procurement and construction (EPC) contract.

Commercial paper
An unsecured promissory note with a fixed rate and maturity of not more than 270 days. Commercial paper is normally sold at a discount from its face value.

Commitment fee
A commitment fee, usually ½–¾% per annum, calculated over the undisbursed balance which the lenders are committed to lend, is payable throughout the availability period. This fee is intended to cover the administrative and other costs associated with relevant loans.

Commodity indexed notes
A debt hybrid bond that combines a debt issue with an option on a commodity.

Common Terms Agreement (CTA)
The agreement to be entered into by the borrower and the finance parties in relation to the common loan terms for all of the loan facilities in a project finance deal.

Common Terms Sheet (CTS)
The common terms sheet sets forth the basic terms and conditions of the lender's loans. This document evolves over many meetings separately among the lenders, as well as jointly with the sponsor(s). The CTS is the basis for drafting the common terms agreement (CTA) and the other finance documents.

Compensation account
An account which, under the terms of an account agreement (AA), houses all insurance process, liquidated damages (LDs), and/or termination payment made by government pursuant to an early termination.

Completion guarantee
A completion guarantee provided by sponsor(s) covers the risk that the facility will be fully built according to specifications, on time and on schedule, and at its proposed cost.

Under this arrangement, the sponsor(s) commits to one of the following actions should the project vehicle run into difficulty during the construction period:

- Committing the additional capital needed by the project vehicle to arrive at project completion date, a date that is reached once the facility achieves certain tests of a financial and technical nature. The sponsor(s) will also commit to infuse the project, as necessary, with the full complement of working capital needed to maintain its debt service cover, as originally forecast in the lenders base case.
- Repaying project debt if it decides not to complete the project.

Completion risk
Completion risks are those associated with the financial consequences of (a) a failure to complete the project at all; (b) a construction delay and/or a cost overrun; (c) failure of the project to perform to technical specifications resulting in shortfalls in expected capacity, output, efficiency, etc.; (d) shortfalls in expected resources (oil, gas, mineral reserve projects); (e) occurrence of a force majeure (FM) event

leading to a construction delay and cost overrun; and (f) unavailability of qualified staff, managers and reliable subcontractors with which to construct and commission the facility.

Compulsory subordination

Compulsory subordination occurs in a number of jurisdictions and situations, where creditors, including lenders otherwise treated as senior lenders, may be forced into a mandatory subordinated position in connection with a borrower's insolvency or bankruptcy proceeding. The subordination, depending on the jurisdiction, may be in relation to (a) amounts due to the tax authority; (b) unpaid compensation due to workers or employees; (c) deposits made by savers or current account holders, if the borrower is a bank; (d) policies held by insured parties, if the borrower is an insurance company; and (e) other claims given preference by applicable laws.

Concession agreement

A concession agreement is a licence issued by a ceding authority, usually a public sector institution, often requiring a concessionaire to build, or expand, a new facility under defined terms and conditions, including the delivery of a defined service at a defined price to the general public. Because the service is offered on monopolistic, or quasi-monopolistic terms, the concessionaire's operation is regulated either by contract, independent regulation, or both.

Conditions Precedents (CPs)

A set of preconditions to be satisfied by the project vehicle that satisfies the obligation of the lenders to disburse under their loans.

Construction completion

Construction completion is defined differently for projects with off-take agreements relative to those that do not have off-takes. In projects without off-take agreements, construction completion may consist of two elements, physical and financial completion. Tests related to physical completion, for example, will involve a judgement by the independent engineer (IE) that the project has been completed satisfactorily along with confirmation that the takeover certificate has been issued, or may be issued. This test is exactly the same, or similar, for projects with and without off-take agreements.

Projects without off-take agreements, however, are exposed to additional test related to financial completion. Often, this test requires the project to arrive at its financial breakeven before the project is regarded as "complete" in both its technical and financial aspects.

Consauction contract

Construction contract means the engineering, procurement and construction (EPC) contract entered into between borrowers and contractor. Lenders prefer a single EPC contract because it gives them a single-point responsible party for all construction contractors and activities. Occasionally, however, two separate contracts by two affiliated parties are used to define the construction arrangements: (a) an installation, erection and commissioning contract with one contractor; and (b) a supply of equipment contract with another. To achieve the contractual equivalent of

single-point responsibility, each contractor is required by the lenders to cross-guarantee the other's obligations. See Turnkey contract.

Construction contractor

The construction contractor is the entity that builds the project under an engineering, procurement and construction (EPC)contract, the terms of which usually will guarantee the fixed-price, required specifications and schedule of construction and commissioning associated with the facility. The EPC contractor hacks up its guarantees through contractual liquidated damage (LD) provisions in addition to performance bonds, retention bonds and other instruments contractually imposed on the contractor and which can be called upon to remedy any breach thereof.

Contingent equity

In lieu of a completion guarantee, a project sponsor may he required by the lenders to cover the cost overrun risk associated with the construction of a new facility by agreeing to commit a pre-agreed amount of contingent equity. Contingent equity is a standby commitment, involving a specific amount of money, callable by lenders only for the purpose of covering cost overruns any time up to the project commercial operations date (COD).

Contract for Differences (CfD)

In a CfD, a counter-party agrees to guarantee monthly revenue to the independent power producer (IPP), based on a fixed price per MWh of capacity, in return for receiving from the IPP any pool receipts in excess of that fixed price.

Contractual subordination

Contractual subordination is effected by an express agreement between a senior and a subordinated lender where both lenders are lending to the same entity. Negotiation related to the rights and obligations of the parties is set forth in a formal agreement that may he referred to as the subordination and inter-creditor trust deed.

Convertible debt

A financial instrument that can he exchanged for another security, or equity interest, at a pre-agreed time and exchange ratio.

Cost of capital

The rate that a project vehicle must pay to investors in order to encourage them to purchase the borrower's stock and/or debt.

Cost of debt

Yield to maturity on debt, frequently after tax, calculated thus:

$$(1 - \text{Tax rate}) \times (\text{Yield to maturity})$$

Cost-of-servicecontract

A cost-of-servicecontract requires each shareholder to pay its proportionate share of monthly project vehicle costs, in return for a contracted share of project's output. Such a contract typically requires payments to be made on a hell-or-high-water basis whether or not any product or service is delivered. A full cost-of-servicecontract would cover operating, administrative and maintenance expenses, debt service and return on equity capital as well as corporate taxes. A cost-of-servicecon-

tract imposes severe obligations on the shareholders except for the construction period during which time certain risks would be laid off on the contractor. This particular structure might be used whenever there are several companies, or industrial hosts, interested in developing, building and operating a power generating plant, or some other facility, designed to service their needs exclusively. A full cost-of-service contract is generally binding on the shareholders under all circumstances except as may have been noted, and therefore leads to highly predictable cash flow.

Counter-party
The other participant to a project agreement or a swap.

Country risk
When used narrowly, a term that encompasses cross-currency and foreign exchange availability risks. More broadly, it can also include the political risks of doing business in the host country.

Covenant
A loan covenant is an agreement by a borrower to perform certain acts such as the timely provision of financial statements or to refrain from certain acts such as incurring further indebtedness beyond an agreed level. The breach of a covenant may be considered an event of default (EOD).

Credit enhancement
A guarantee issued by a third party assuring the payment, or performance, obligations of a major project participant.

Credit facility
A term used to describe a loan agreement including its terms and conditions.

Credit risk
The risk that the borrower will not be able to pay the lenders. To assess this risk properly, it is necessary to examine the risks associated with the project's sources of revenue, including an assessment, for example, as to whether:

(a) Payments from an off-taker may be interrupted due to an inability or an unwillingness to pay; or
(b) Users of projects that do not have off-take agreements (e.g. a telecommunications facility, container port, toll road, bridge or similar transportation facility) will be willing to pay the posted charges or, from a different perspective, whether the total revenue derived from its collective usage by the consuming public will be below expectation.

Creditworthy
A term used to imply that the risk of default on a debt obligation by that entity is deemed to be low.

Cross-acceleration
A project vehicle default triggered when other creditors actually accelerate their loans.

Cross-border lenders
Off-shore lenders.

Cross-currency risk
The risk that local proceeds lose their value due to depreciation against a particular foreign currency, notwithstanding that such proceeds may still be convertible into foreign currency and transferable abroad and that such reduction ultimately threatens the ability of the project vehicle to service foreign currency debt.

Cross-default
An event of default (EOD)triggered by a default in the payment of, or the actual or potential acceleration of the repayment of, other debt of the same borrower or of related entities.

Cure
Make good a default.

Cure period
Period allowed under an agreement to rectify a default.

Current asset
An asset which will turn into cash within one year.

Current liability
Any liability payable in one year.

Current maturity
Current time to maturity on an outstanding note, bond or other money market instrument.

Current ratio
A ratio used to measure liquidity. It is the current assets divided by current liabilities.

Current yield
Measures the annual income from a particular security. Expressed as an annual percentage, current yield is calculated as follows:

$$\textbf{Current yield (\%)} = \frac{\textbf{Coupon}}{\text{Net price} \times 100}$$

Cushion
The extra amount of net cash flow remaining after expected debt service.

Dangerous substance
Any radioactive emissions and any natural or artificial substance (whether in solid or liquid form or in the form of a gas or vapour and whether alone or in combination with any other substance) capable of causing harm to man or any other living organism or damaging the environment or public health or welfare including but not limited to any controlled, special, hazardous, toxic, radioactive or dangerous waste.

Debenture
An obligation secured by the general credit of the issuer rather than being backed by a specific lien on property.

Debt
An obligation to pay cash or other goods or to provide services to others.

Debt service
Payment of scheduled interest, fees, commissions and principal instalments under a loan agreement.

Debt Service Coverage Ratio (DSCR)
At any time, the ratio of available cash flow to the aggregate of senior debt service and subordinated debt service due (or projected to fall due) in that period.

$$\text{DSCR} = \frac{\text{Cash flow available for debt service (CADS)}}{\text{Debt service (Principal + Interest)}}$$

Debt Service Reserve Account (DSRA)
Either the senior DSRA and/or the subordinated DSRA.

Debt-to-equity ratio
At any time, the ratio of the principal amount outstanding under the credit facilities to equity.

Dedicated reserves
In certain situations where project feasibility is particularly sensitive to input costs, supply or transportation availability, the supplier is required to set aside input reserves for use only by the project. Examples include coal and gas reserves. In such case it is not unusual for the reserves to be purchased in advance.

Deductible
An amount, or period, which must be deducted before an insurance payout or settlement is calculated.

Default
An event which, with the giving of notice, lapse of time, determination of materiality or fulfilment of any other applicable condition (or any combination of the foregoing), would constitute an event of default (EOD) under a loan agreement.

Default interest
An additional interest rate payable after default.

Default premium
The increased return on a security required to compensate investors for the risk the borrower will default on its obligation.

Deficiency agreement
Where cash flow, working capital, or revenues are below agreed levels or are insufficient to meet debt service, then a deficiency or make-up agreement requires that the shortfall be provided by the sponsor or another party, sometimes to a cumulative limit.

Depletion
An income tax deduction figured as a percentage of the gross income received from the sale of natural resources, computed property by property, but not to exceed 50% of net income. This deduction differs for various natural resources.

Depreciation
The historical allocation of the cost of an asset over the period of its useful life.

Derivative
A derivative is an instrument that derives its value from some other underlying asset. A common example of a derivative is an interest rate swap that derives its value from interest due under the floating leg of the swap.

Developing counmes
Developing countries are defined by the World Bank in terms of 1998 gross national product (GNP) per capita: (a)low-income, US$760 or less; (b)lower-middle income, from US$761 to US$3,030; and (c)upper-middle income, from US$3,031 to US$9,360.

Direct agreement(s)
Direct agreements are entered into among the lenders and project vehicle, as well as the major project participants (depending on context, the "counter-party" or "counter-parties"), see Appendix 12.1.

Disbursement
An accounting and financial term used to describe the actual payout of cash, or the drawdowns, under a loan agreement.

Disclaimer
A statement made by the arranger as representative for the underwriting syndicate and contained in offering documents which asserts *inter alia*, that certain information provided in the prospectus was supplied by the borrower, and is not therefore the responsibility of the arranger(s).

Discounted rate of return
The effective periodic rate that would equate the present value (PV) of an investment with the accumulated PVs of a stream of future cash flows, each appropriately discounted by the periodic rate.

Dividend
A return on an investment in stock, usually in the form of cash or stock.

Dividend yield
The annual dividend payment divided by the market price of a share of stock.

Double dip tax lease
A transaction structured to take advantage of depreciation rules in two jurisdictions.

Drawdown
An actual takedown of money under the terms of a loan facility.

Drawdown Cover Ratio (DCR)
A DCR is defined as a numerator consisting of the loan life cover ratio (LLCR) divided by a denominator, defined by the maximum amount that is to be borrowed from the lenders. When used, the inter-creditor agent will ensure that upon each draw, the DCR is checked to ensure that there is no breach of conditions precedent (CPs) to disbursement or covenants related thereto.

Due date
Date on which payment of interest or principal becomes due and payable.

Due diligence
Investigation works done by lenders, and experts recruited by lenders, or the technical, legal, market, environmental, modelling, insurance and other such experts of the project.

Earnings
The excess of revenues over all related expenses for a given period of time. Sometimes used to describe income, net income, profit or net profit.

EBIT
Earnings before interest and taxes.

EBITDA
Earnings before interest, taxes, depreciation and amortization.

Economic assumptions
Means assumptions as to interest, foreign exchange, inflation rate, the discount rate, rate of taxation and any other input, other than technical assumptions, required by the computer model for the preparation of a forecast.

Economic life of property
The estimated period during which the property is expected to be economically usable for the purpose for which it was intended with normal repairs and maintenance.

EDC
Export Development Corporation, Canada's export credit agency (ECA).

EFIC
Export Finance Insurance Corporation, Australia's export credit agency (ECA).

Enclave projects
Discrete projects in poorer countries that generate substantial foreign exchange.

Energy price or tariff
Energy price includes all the variable costs, including a "pass-through" of fuel cost, payable on each unit of energy dispatched by and delivered to the utility. Energy price is paid by the utility at the agreed price for the amount of energy actually delivered. See Capacity price.

Enforcing security
Security may be enforced by any one of the following:
- Taking over the project.
- Selling the collateral in a foreclosure for recovery of loans.

Environmental Impact Assessment (EIA)
An audit of the impact of a project on the environment and population.

Environmental claim
Any claim by any person as a result of, or in connection with, any violation of environmental law or any environmental contamination which could give rise to

any remedy, penalty (whether interim or final) or liability for the borrower or any finance party.

Environmental consultant

An individual expert who completes an environmental and social audit and, on this basis, proposes an environmental and social mitigation plan. The report may be critical to securing the environmental permits necessary to construct a facility.

Environmental contamination

Each of the following and their consequences:

(a) Any release, emission, leakage or spillage of any dangerous substance at or from any site into any part of the environment (see Dangerous substance).

(b) Any accident, fire, explosion or sudden event at any site which is directly or indirectly caused by, or attributable to, any dangerous substance.

(c) Any other pollution of the environment created by the project vehicle.

Environmental law

Any national law or regulation concerning the protection of human health, environment or restricting the use or disposition of any dangerous substances. See Dangerous substance.

Environmental licence

Any authorization required by any environmental law.

Environmental risk

Specifically, environmental risk relates to the failure of the project to comply with environmental and resettlement standards and regulations established by the government or some finance party. Failure to comply could generally result in public outcry, project delay, litigation, and/or imposition of fines and penalties that increase project liabilities and raise lender concerns.

Equitable mortgage

An equitable mortgage is different from a legal mortgage in that it creates only an equitable interest for the lenders that can be overridden by a legal interest.

If two mortgagees claim an equitable interest in the secured property, the first claim in order of creation prevails. See Legal mortgage.

Equity

At any time, the aggregate of:

(a) An amount subscribed for and paid in as capital in the project vehicle by the sponsor(s) and not repaid or otherwise reimbursed except a return of equity or dividends.

(b) The principal amount advanced under all subordinated sponsor loans, calculated in US dollars, or some other currency, as of the date of the advance.

Equity kicker

A share of ownership interest in a borrower, project or property or a potential ownership interest in a borrower, project or property in consideration for making a loan. The kicker may take the form of stock, stock warrants, purchase options, a percentage of profits or a percentage of ultimate ownership.

Equity Support Agreement (ESA)
The agreement to be entered into by the sponsor(s), the project vehicle and the inter-creditor agent in relation to the support that will be provided by the sponsor(s) to the project, especially during the construction period.

Escrow accounts
Accounts set up under a loan agreement into which a borrower is required to make direct payments of receivables and other cash and to which access is restricted. These accounts are usually charged in favour of the lenders.

Eurobonds
Eurobonds are US-dollar-denominated bonds issued outside the US, by US companies.

Event of Default (EOD)
One of a list of events, the occurrence of which entitles the lender under the terms of the relevant credit facility or debt instrument to cancel the facility, declare all amounts owing by the debtor to be immediately due and payable and/or enforce security.

Execute
Formal signing of documentation; or to implement an action required under the documentation.

Export Credit Agency (ECA)
ECAs assist in supporting exports from their country generally through the use of direct loan and guarantee mechanisms provided to importers, including project finance importers. Since the mid-1990s, several ECAs have established project finance divisions, designed to assist exporters to compete in new international infrastructure projects and other types of project financing. Six of the more important of these agencies are US Export-Import Bank (US Eximbank), Export Credit Guarantee Department (ECGD)of the UK, Japanese Bank for International Collaboration (JBIC),Compagnie Francaise d'Assurance pour la Commerce Exterieur (COFACE) of France, and Kreditanstalt fur Wiederaufbau (KfW) of Germany.

Export credits
Credit or guarantee facilities that are made available to foreign buyers to promote the manufacture and export of home country goods and services. See ***Export*** Credit ***Agency.***

Expropriation event
In the context of a project finance agreement, an expropriation event refers to any action by government or its agencies:

(a) Which deprives the project vehicle of the use of all, or any substantial part, of its assets (including the nationalization or expropriation of an asset of the borrower, the release, inhibition, modification, suspension or extinguishment of any rights benefiting the project vehicle or the imposition of any restrictions affecting the loan agreements by such government authority) and such action has a material adverse effect.

(b) Which prevents the borrower from conducting its business or operations, or a

substantial part thereof, in the same manner as at the date of financial close and such action has a material adverse effect.

(c) To revoke or terminate or to refuse to renew any required approval and such revocation or termination or refusal has a material adverse effect.

(d) To impose onerous conditions on or on the renewal of any required approval and such action has a material adverse effect.

Facility

A loan facility. See Common *Terms* Agreement or Individual Loan Facility Agreement.

Facility agreement

Each agreement in a project financing providing for a loan.

Finance documents

Include:

(a) Each facility agreement.
(b) The common terms agreement (CTA).
(c) The accounts agreement (AA).
(d) Each security document.
(e) The equity support agreement (ESA).
(f) The subordination and inter-creditor agreement.
(g) Each direct agreement.
(h) The calculations and forecasting agreement.
(i) Each drawdown request.
(j) Each fee letter.
(k) Each hedging agreement.
(l) Any letter of credit (L/C) provided as a condition to release of moneys from a secured account.
(m) Any other document which the inter-creditor agent and the borrower (both acting reasonably) agree to designate as a finance document.

Fiance party

A senior finance party and subordinated finance party.

Financial close

The date when all finance documents are executed.

Financial indebtedness

Means any indebtedness (without double counting and excluding equity, sponsor(s) bridging loans and sponsor(s) restoration loans) in respect of any one of the following:

(a) Moneys borrowed or debit balances at banks and other financial institutions.
(b) Any liability under any debenture, bond, note, loan stock or other security.
(c) Any liability under any acceptance or documentary credit.
(d) Receivables sold or discounted (other than on a non-recourse basis).
(e) The acquisition cost of any asset to the extent payable before or after the time of acquisition or possession by the party liable where the advance or deferred

payment is arranged primarily as a method of raising finance or financing the acquisition of that asset.

(f) Any lease entered into primarily as a method of raising finance or financing the acquisition of the asset leased.

(g) Any currency swap or interest swap, cap or collar arrangement or any other derivative instrument.

(h) Any amount raised under any other transaction having the commercial effect of a borrowing or raising of money.

(i) Any guarantee, indemnity or similar assurance against financial loss of any person.

Financial model

A computer-driven spreadsheet that processes a comprehensive list of input assumptions and provides outputs that reflect the anticipated real-life interaction between data and calculated values.

Financial model auditor

An individual expert who audits the lenders base case financial model to determine its integrity and issues a report to the lenders. See ***Lenders base case financial model.***

Financial risk

The potential impact of financial developments outside the control of the project is a source of project risk to both lenders and sponsor(s). These include the variability of (a)exchange rates; (b)interest rates; (c)world commodity prices which in turn affect energy supplies and raw materials; (d)decreases in world prices of the product produced by the project; (e) inflation; and (f) international trends in trade, tariffs and protectionism.

Financing costs

Encompasses:

(a) Interest, fees, commissions and costs payable by the borrower under the finance documents.

(b) Amounts payable by the borrower in respect of tax gross-up, market disruption and increased costs.

(c) Stamp duties and indemnities.

(d) Net amounts payable by the borrower under any hedging agreement.

(e) Any value-added or other taxes payable by the borrower in respect of the above.

Firm vs **Interruptible** Resource Supply Contract

A firm contract does not permit the fuel supplier to favour the needs of other contract holders. Although there are differences in cost of feedstock, lenders would generally prefer a "firm" to "interruptible" provision when such arrangement is employed. However, a project vehicle would enter into an interruptible contract and save money if it can (a)stop operations temporarily without paying damages under the off-take; (b)shift to different sources of supply due to abundance of suppliers; or (c) as part of a supply strategy, use this variant in combination with others to create redundancy, and therefore more certainty in supply.

First drawdown date
The date on which the first drawdown under the facilities occurs.

First forecast
That point, usually around First Repayment Date, or in a project with a grace period, the first interest payment date when forecast debt service cover ratio (DSCR) and loan life cover ratio (LLCR) are calculated.

First repayment date
A certain date (as scheduled under the individual loan facility agreements (ILFAs) after financial closing and/or commercial operations date (COD) by which time the borrower is obligated to make its first instalment of principal and interest on its loan.

Fixed amount resource supply contract
A resource supply agreement that involves the supply and/or transportation of fixed amounts of feedstock. Under this contract, the supplier agrees to supply and/or transport a specific amount of the needed input to the project, and the project vehicle agrees to purchase a specific amount at a defined price. This is not a useful contract for a power plant operation, for example, whose dispatch may vary considerably from period to period. Although the contract provides both parties with certainty, it leaves no room for changes to the amount available or required. Because of its lack of flexibility, this arrangement is not in great favour by sponsor(s) or lenders.

Fixed charge
Charge created over fixed or ascertainable assets.

Fixed rate of interest
An interest rate established at the time a loan is made, or liability incurred, that remains unchanged throughout the term of the loan or liability.

Floating charge
A security interest created over highly variable and/or unascertainable assets such as receivables, inventories, spare parts and cash in bank(s).

Floor
An agreement between two parties whereby one party, for an upfront premium, agrees to compensate the other at designated times if the underlying price or rate is less than the strike level.

Force Majeure (FM) Risk
This risk is created potentially by events outside of the reasonable control of the affected party to a contract, which it could not have prevented by good industry practices or by the exercise of reasonable skill and judgement. In a typical project finance deal, provisions with regard to FM typically excuse the affected party from contract performance during the period that it is in effect. However, there may be adverse financial effects on the project nonetheless and mitigation measures are usually negotiated between sponsor(s) and lenders or other third parties.

Foreign exchange availability risk
Inconvertibility risk arises in economies without open foreign exchange markets

where an entity may be unable to convert local currency revenues into "hard" foreign currency.

Forward contract
A forward contract is the same as a futures contract except that it tailored to the requirements of the borrower and is only available over-the-counter.

Forward rate
Current market expectations of the spot price of a security at some future time.

Forward swap
A forward contract on a swap. The terms of the swap are set at the current point in time although the parties agree that the swap will begin at a specified date in the future.

Free Cash Flow (FCF)
FCF is defined as the liquid balances available to the project vehicle after all project vehicle obligations, including debt service, are met.

Front-end fee
A fee, calculated as a percentage of the principal amount which is payable once, generally at the signing of the agreement to the agent for distribution to the banks usually in an amount related to the size of the loan.

Futures contract
A futures contract is an agreement between two parties to buy/sell an asset at a certain time in the future for a certain price. A futures contract is generally executed through a formal exchange, e.g. Chicago Mercantile Exchange or London Metals Exchange.

Genco
Gencos are merchant power plants (MPPs) in the US created from the sale of whole portfolios of generation plants by investor-owned utilities (IOUs), organized under a project vehicle also known as structured corporate.

Goodwill
The intangible assets of a borrower, calculated as the excess of purchase price over book value.

Governing law
The legal jurisdiction to which the terms and conditions of the project documents, financing agreements and other similar documents are subject to.

Grace period
In a loan contract, the period between signing and first repayment of principal.

Greenfield
An installation that is to be built under a project concept.

Guarantee
Guarantees, or performance guarantees, are undertakings by one person (the "guarantor") to be answerable for the payment of some debt, or the due performance of some contract or duty, by another person.

Heat rate
Power purchase agreement (PPA) heat rate is a measure of the fuel consumption efficiency of a fossil fuel-fired power generating plant.

Hedges
Broadly, hedges that are common to project finance include futures, forwards, options, swaps, price ceilings and floors, covering the forward price of interest rates, commodity prices and currency parities.

Hell-or-high-water clause
An unconditional, absolute obligation not subject to defence of non-performance by the other party to the contract.

Hidden value
Hidden value refers to two types of assets that are sold off for the purpose of prepaying acquisition debt without affecting the normal operation of the company: (a) assets of the target company that had been acquired for historical reasons but are no longer essential to the business; and (b) assets of the target company that have a market value well beyond that carried on the balance sheet, e.g. real estate.

Historic Debt Service Cover Ratio (HDSCR)
The HDSCR is defined as a numerator consisting of cash available for debt service (CADS) realized over the previous full year of project operations divided by project debt service, i.e. principal plus interest. By definition, the HDSCR for any project cannot be measured during the first full year of operations. Lenders, however, will frequently require an interim test at the six-month mark.

Horizontal unbundling
Horizontal Unbundling occurs when one or more parallel activities of a monopolist provider are divided among separate companies, which may either compete directly with one another or may be permitted to retain a monopoly over a smaller territory.

Host country law
The law governing the country in which a project will operate.

Hurdle rate
Minimum acceptable rate of return on investment.

Hybrid debt instruments
The purpose of this credit instrument is to couple a debt issuance with a risk-management feature that essentially enhances the ability to borrow by reducing the possibility of default.

Hybrid Merchant Power Plants (MPPs)
MPPs with a power purchase agreement (PPA) – covering a relatively small portion of operating capacity – are hybrid MPPs.

Hypothecation
A mode of security created especially in common law countries over movable as-

Illegality clause
A clause in the loan agreement that excuses a lender from its obligation to maintain unlawful loans.

Immovable assets
All real property: land, plant, equipment, fixtures and other immovable property.

Implementation Agreement (IA)
A contract between a project vehicle and a developing country host government that, among other things, allocates risk in respect of certain political and financial uncertainties in a project financing. An IA is not normally needed in an industrialized country.

Imported content
The value of plant or equipment imported from an industrialized country, and priced in US dollars or some other acceptable hard currency.

Income statement
A report of a borrower's revenues, associated expenses and resulting income for a period of time. Also known as the profit and loss statement.

Indemnity
An agreement to protect a person against financial loss.

Independent Engineer (IE)
A reputable engineering consulting firm that assists lenders in evaluating the "technical" aspects of the project.

Indicative terms
The likely commercial terms upon which a bank will lend subject to its internal credit approval or other conditions. These do not constitute a firm offer to lend or arrange a loan.

Individual Loan Facility Agreement (ILFA)
A loan agreement entered into between a specific lender and the project vehicle in relation to the loan terms for that loan facility.

Industrialized countries
Industrialized countries are defined by the World Bank in terms of 1998 gross national product (GNP) per capita of high-income, US$9,361, or more.

Inefficient tax payer
An entity that needs to use the capital equipment for some express business purpose, is unable to use tax benefits associated with outright ownership, and is therefore willing to lease the equipment.

Initial conditions precedent instructing group
Includes identified lenders, or a percentage of lenders weighted by volume, who must confirm that they are satisfied that all conditions precedent (CP) to first disbursement have been met before the first draw under the loan may take place.

Institutions
A term usually referring to insurance companies, pension funds, trusts, foundations, mutual funds, funds managers and bank investment departments.

Insurance
Insurance is a contract whereby, for a stipulated consideration, one party undertakes to compensate the other for loss suffered on a specific asset, or assets, as a result of perils directly specified. The party agreeing to make the compensation usually is called the "insurer" or "underwriter"; the other, the "insured" or "assured"; the agreed consideration, the "premium"; the written contract, a "policy"; and the events insured against, "risks" or "perils."

Insurance advisor
Insurance advisor is to determine in the context of the project documents what insurance(s) the project should carry. Precise cost of insurance coverage, where and how to place the insurance to maximize coverage at least expense, what methods to use in monitoring and tracking the reinsurance programme to minimize payment risk.

Interbank rate
The rate at which banks bid for and offer deposits to each other.

Inter-creditor agent
Inter-creditor agent is the financial institution selected by the lenders to monitor the project on behalf of all of the lenders and who represents all of the lenders in matters of common concern, especially those that are the subject of the inter-creditor agreement.

Inter-creditor agreement
An agreement between the lenders, or classes of lenders, to a project vehicle as to the rights and obligations of creditors in the event of default, covering such topics as repayment, security and set-off.

Interest
Rent calculated on loan principal outstanding using a fixed-rate or variable-rate basis, paid by borrowers to lenders for use of their money.

Interest rate cap
This is a contract that guarantees a borrower that variable interest rates will not exceed a specified amount, specifically by capping them at some pre-agreed level. This protects the borrower from rising interest rates and at the same time, allows it to enjoy lower rates. Premium for a cap is generally paid in advance.

Interest rate cap and floor
Sometimes, the purchase of an interest rate cap and the sale of a floor are combined in a single contract to hedge both the upward and downward movement of interest. This type of contract contains features of both contracts described above. The lender caps the interest rate at some mutually agreed level in exchange for a mutually agreed interest rate floor. The borrower is protected against a rise in variable rates but in return is limiting the benefit they will receive from a downward movement in interest rates. Usually, the collar is structured so that the premium due under the purchase of the cap is equal to the premium that would be received by the sale of the floor. This is known as a zero-cost collar.

Interest rate floor

This is similar to a cap, except it guarantees a lender that the interest rates will not fall below a specified interest rate. This type of contract protects the lender from declining interest rates while allowing it to take advantage of higher rate environment. In return for the floor, the lender should charge the borrower a lower rate of interest on its loan than otherwise would be the case.

Interest rate swap

An interest rate swap is an agreement between two parties under which each agrees to exchange, or "swap", their respective obligations to make interest payment on their loan contracts on particular dates in future ("payment dates").

Internal Rate of Return (IRR)

IRR, a primary tool used in the evaluation of greenfield projects, is the discount rate which equates the present value (PV)of a project's expected cash inflows to the PV of the project's costs or cash outflows. Practically speaking, it is the rate that makes net present value (NPV) equal to zero.

International Bank for Reconstruction and Development (IBRD)

Established in 1945, IBRD is a member of the World Bank Group and has 181 member countries with cumulative lending of US$349.4 billion as of FY2000.

International Centre for Settlement of Investment Disputes (ICSID)

ICSID, a member of the World Bank Group, helps to encourage foreign investment by providing international facilities for conciliation and arbitration of investment disputes. ICSID also has research and publishing activities in the areas of arbitration law and foreign investment law. This last entity was established in 1966 and now has 131 member countries with 75 registered cases.

International Development Association (IDA)

Established in 1960, IDA is a member of the World Bank Group and has 161 members with cumulative lending of US$120.3 billion as of FY2000. IDA is the World Bank's concession lending arm and provides key support for the Bank's poverty-reduction mission.

International Finance Corporation (IFC)

IFC is a member of the World Bank Group and was established in 1956. It now has 174 member countries with committed portfolio of US$21.7 billion as of FY2000. IFC promotes growth in the developing world by providing equity or debt to private companies as well as technical assistance and advice to governments and businesses.

Inverse floaters

First introduced in 1986, an inverse floater is a debt hybrid bond instrument where the interest rate is structured to vary in an inverse manner to market rates.

Investment bank

The US term for a merchant bank.

Investment grade

The rating level above which institutional investors are authorized to invest.

Investment promotion agencies

Investment promotion agencies, such as the Overseas Private Investment Corporation (OPIC), assist in mobilizing the participation of home country corporations in the economic and social development of emerging market countries as well as the transition economies of central and eastern Europe. Depending on the agency, services provided to home country corporations include some or all of the following:

(a) Insuring private equity investment overseas against a broad range of political risks.[1]
(b) Financing private businesses overseas through loan and loan guarantees.
(c) Mobilizing private investment funds, as a source of third-party equity to private business overseas.

Islamic loan

Interest cannot be charged on an Islamic loan. Rather, the loan is structured using discounts, sale/lease, profit participation or repurchase agreements.

Joint and several liability

Liability under a guarantee that is given by two or more guarantors which gives rise to one joint obligation and to as many several obligations as there are obligors so that each obligor is liable for the payment of all the other obligors.

Joint venture

The legal means of dividing the project vehicle's equity either by shareholdings in a company ("incorporated joint venture") or by way of a contract ("contractual joint venture").

Junk

A high-yield bond of speculative grade.

Keep-well letter

A form of guarantee in which the guarantor agrees to keep the recipient of the guarantee well by injecting capital as needed. Sometimes called a maintenance of working capital guarantee. If properly worded, a keep-well letter is the equivalent of a formal guarantee.

Key insurance

Key construction phase insurance(s):

(a) Construction all-risk insurance covering the risks of physical loss or damage to the contract works until project completion.
(b) Marine all-risk insurance covering the transit of plant and equipment from supplier's premises to the project site.

[1] Cover provided to equity by these agencies would be similar to the political-risk cover provided on loans by export credit agencies. It covers confiscation, nationalization and expropriation; currency inconvertibility (transfer risk) and political violence (loss of assets due to war, revolution, insurrection, or politically motivated strife, terrorism and sabotage).

(c) Insurance covering legal liability for loss or damage to third parties for loss of property, death or bodily injury and/or as specified in the off-take or concession agreement.

Key operational phase insurance(s):

(a) Operator's all-risk insurance covering physical loss or damage to assets, e.g., machinery breakdown caused by sudden and unforeseen mechanical and electrical breakdown.
(b) Insurance covering business interruption following all risks.
(c) Insurance covering liability for loss or damage to third parties for loss of property, death or bodily injury and/or as specified in the off-take or concession agreement.

Land Lease Agreement (LLA)

The land lease covering the site on which the project is to be built and operated.

Legal mortgage

A security document that cannot be overridden by any third party, creating a legal interest in the mortgage property for the lenders. See Equitable mortgage.

Legal opinion

Opinions provided by the legal advisors on the validity and enforceability of all project and finance documents including security documents.

Legal risk

This risk is defined as the (a)inability to enforce security arrangements; (b)absence of adequate protection for intellectual property; (c)inability to enforce foreign judgements; (d) absence of a choice of law; and (e)inability to refer disputes to arbitration or to have a choice with regards to arbitration rules, venue and language. Mitigation measures for most of these risks are not always available and the contractual allocation of these risks to the parties that are most able to control or address them becomes critical.

Lender

A provider of debt to a project under a formal credit agreement such as a common terms agreement (CTA)and/or individual loan facility agreement (ILFA).

Lender liability

Liability that may be imposed on lenders as a result of an action or failure to act such as failing to honour a commitment to make a loan.

Lenders base case financial model

The computer model, stored on computer disc(s), and consisting of algorithms as set out on the print-out from such disc(s), each to be initialled at financial close by the lenders and the project vehicle for the purposes of identification, as may be amended from time to time by agreement between the project vehicle and the inter-creditor agent or, if agreement cannot be reached, in accordance with the recommendation of a firm of accountants acceptable to both the inter-creditor agent and the project vehicle.

Lenders common counsel
Counsel to all the lenders in a project finance transaction.

Lessee
The user who pays lease rentals to the owner/lessor.

Lessor
One who owns and leases a specific asset to another party under a formal lease agreement.

Letter of Credit (L/C)
An L/C is a written undertaking by a bank (issuing bank) given to the seller (beneficiary) at the request and in accordance with the instructions of the buyer (applicant) to effect payment up to a stated sum of money within a prescribed time limit and against stipulated documents.

Leveraged leasing
The lessor raises the funds required to purchase the plant, which will be leased, through the issuance of instruments (debt, subordinated debt, equity, etc.) with different priorities of claim on the asset's residual value and cash flow. The leasing company generally takes an equity position, or last-claim position in the leased asset.

Levelized tariffs
Methodology used to "levelize" uneven tariffs for the purposes of comparing the tariff structure submitted by one bidder with that of another.

Lien
A legal security interest in an asset.

Limited Competitive Bidding (LCB)
LCB is essentially international competitive bidding (ICB) by direct invitation without open advertisement. It may be an appropriate method of procurement where (a) contract values are small; (b) there exist only limited number of contractors with the necessary technical and financial qualifications; or (c) other exceptional reasons justify departure.

Liquidated Damages (LDs)
Damages payable by a person or entity for non-compliance in a contract.

Liquidity
The ability to convert assets into cash.

Liquidity ratio
Any ratio used to estimate a borrower's liquidity such as the acid test or current ratio; a measure of how easily assets can be converted into cash. See *Acid* test ratio and **Current** ratio.

Loan availability period
The period during which a loan commitment is available to draw.

Loan Life Cover Ratio (LLCR)
The ratio of (a) the net present value (NPV) of cash available for debt service (CADS) at a discount rate equal to the weighted average interest rate on the facilities, for

each semi-annual period from the date of calculation up to the scheduled final maturity date of the senior facilities, to (b) the principal amount outstanding under the loan facilities on the date of calculation.

London Interbank Offer Rate (LIBOR)
A commonly used measure upon which loan pricing is based, LIBOR is the rate at which leading banks offer to place deposits with other institutions.

London Interbank Bid Rate (LIBID)
LIBID is the rate at which banks buy deposits in the market.

Long-term debt
On a balance sheet, long-term debt is any debt due for more than one year.

Major maintenance costs
The cost of major maintenance, repair or overhaul identified in the accounts agreement (AA) and the operating budget which is periodically transferred to the major maintenance reserve account.

Major party
The project vehicle, the sponsor(s) (until the release, or payment in full of the contingent equity), the host government, the lessor, a construction contractor (until the issue of the takeover certificate), the off-taker, the resource supplier, etc.

Managing bank(s)
A title assigned to one or more of the banks involved in the syndication. The title, generally, is more reflective of the bank's prominence in the marketing effort than it is to any direct responsibility the bank may have to the project.

Mandate
The formal appointment to advise on, or arrange, a project financing.

Margin
The amount expressed in percentage per annum above the interest rate basis or cost of funds; for hedging and futures contracts, the cash collateral deposited with a trader or exchange as insurance against default.

Market disruption clause
Under this clause, the project vehicle remains obligated to pay the additional costs that lenders may incur as a result of interbank market disruption.

Market expert
A specialist firm assisting the lenders in evaluating the industry that the project will operate in. It is responsible for evaluating the competitiveness of the facility relative to local, regional or international competing facilities.

Marketing risk
Market risk has several components including demand, price, cross-currency, foreign exchange availability and payment risk.

Material Adverse Change (MAC)
See ***Material adverse effect.***

Material adverse effect

The effect of any event or circumstance which:

(a) Is, or is reasonably likely to be, materially adverse to the ability of a major project party to perform or comply with any of its material obligations under the transaction documents to which it is a party in a timely manner.

(b) Is, or is likely to be, prejudicial in a material and adverse respect to the interests of the project vehicle and/or lenders under the finance documents.

Maturity

The date on which a given debt security or any obligation to pay money becomes due and payable to the holder in full.

Merchant Power Plant (MPP)

A power generation plant with a partial off-take agreement or no agreement at all.

Mezzanine financing

This financing can be defined as the "half-way point" between debt and equity in terms of the risk and return associated with it. Often subordinated, this type of financing is convertible into equity and has little security to the lender if the borrower fails.

Minemouth

Usually refers to a coal mine located next to a power generating station. A dedicated coal mine.

Modelling bank

The institution that plays the key role in transforming the model into the lenders base case. See Lenders base case financial model.

Monetary performance guarantee

A guarantor undertakes to pay a beneficiary a stated amount to satisfy the payment liabilities of a major project participant (the "guaranteed party"), but only upon failure of the latter to pay.

Monte Carlo simulation

Simulation relying on the use of random numbers.

Multilateral Investment Guarantee Agency (MIGA)

Established in 1988 as a member of the World Bank Group, MIGA helps encourage foreign investment in developing countries by providing guarantees and insurance to foreign investors against loss caused by non-commercial risks. MIGA also provides technical assistance to help countries disseminate information on investment opportunities. MIGA has 152 member countries.

MW

Megawatts, 1,000 kilowatts (kW) or one million watts.

National Competitive Bidding (NCB)

NCB is the competitive bidding procedure normally used for public procurement and may be the most efficient and economical way of procuring goods or works which, by their nature or scope, are unlikely to attract foreign competition.

Negative covenants
Promises by the borrower in a loan agreement to abstain from undertaking certain other courses of actions. See Positive covenants.

Negative pledge
A covenant whereby a borrower and/or guarantor undertake not to allow the creation or subsistence of secured debt or encumbrances on its assets.

Net Present Value (NPV)
NPV is the present value of a project's future cash flows minus its cost. It is the technique of finding the PV of all cash flows (both inflows and outflows) associated with an investment. Operating firms, acquisitions or divestitures, are appraised generally using the NPV technique.

Non-recourse
The lenders rely on the project's cash flows and security over the project vehicle's assets as the only means to repay debt service.

Notice of borrowing
The request for a loan draw.

Notional principal
In an interest swap agreement, notional principal mirrors the principal outstanding under a loan agreement at any point during loan life. Notional principal never changes hands in an interest rate swap; only interest payments change hands on the designated payment dates.

Off-balance sheet Liability
A corporate obligation that does not appear as a liability on the issuer's balance sheet.

Offering Memorandum (OM)
A document prepared in connection with a proposed credit facility containing details of the borrower, its business and financial condition and a description of the proposed transaction.

It describes the background, site and technical attributes of the project and assesses the sponsor(s) track record, roles and experience of the other major participants, and the risk-sharing structure within the project documents. It also provides financial information including the estimated costs of building the project (project costs); the capital structure; sources and uses of funds; proposed terms of equity and debt; as well as management plans related to mitigation of cost overrun, and other open risks. An OM contains a detailed projection of the project's cash flow with a focus on its revenue, expenses, interest rate and fees, taxes and other items.

Official flows
Official flows encompass grants, credits and other forms of assistance by multilateral and bilateral institutions to developing countries. Some multilateral/bilateral institutions are providers of project finance debt and equity.

Offshore security trustee
A finance party responsible for maintaining the offshore security on behalf of lenders.

Off-take agreement

An off-take agreement is a structured purchase and sale agreement entered into between two parties, one of which delivers a service to the other(s) over a specific period in return for defined payment arrangements. A number of off-take agreement structures are finance-able, including the take-or-pay, and variations thereof, such as throughput, tolling and cost of service agreements.

Off-taker

The off-taker is the name given to the entity that is the single purchaser of all of the project output subject to a formal contract. In some deals, there may he more than one off-taker, but this is relatively uncommon. Other projects may not have any off-takers, or off-take agreements, e.g. a toll road, container port, or a mass transport system.

Onshore security trustee

A finance party responsible for maintaining the onshore security on behalf of the lenders.

Operating budget

Three months before the start of each year with effect from the commercial operations date (COD) the project vehicle provides to the inter-creditor agent a draft annual operating budget for that year (or part thereof), showing likely expenditure to be incurred in each month during that year. If the inter-creditor agent does not reject the draft annual operating budget in writing to the borrower within one month, that draft annual operating budget becomes the operating budget for that year (or part thereof). If the draft annual operating budget is rejected, and the inter-creditor agent and the borrower cannot resolve any dispute by the beginning of the relevant financial year, the operating budget is compiled using items in the previous year's operating budget. See Operating ***costs.***

Operating costs

All costs and expenses incurred or to be incurred by the borrower in connection with the operation, maintenance, repair and reinstatement of the project in the ordinary course of its business including but not limited to:

(a) Operating costs and expenses set out in the then operating budget.
(h) Liabilities of the borrower under the project agreements.
(c) Insurance premia.
(d) Maintenance expenditure (which shall include the funding of the major maintenance reserve account).
(e) Fees, commissions, charges, administrative, legal, management, accounting, other consulting and all other overhead and employee costs.
(f) All other costs and expenses which the inter-creditor agent (acting reasonably) agrees may be classified as operating costs.

Operating lease

A rental-type arrangement where the leased asset remains on the lessor's balance sheet and the lessee derives the economic benefits from the asset and pays periodic rentals. In the operating lease, an off-balance sheet transaction for the lessee, the lease-rental payments are the only related expenses.

Operations and Maintenance (O&M) agreement

The services of the operator in an O&M agreement are usually identified in three phases: mobilization, pre-operations and operations. The agreement apportions operating risk between the operator and the project vehicle for obligations related to training of the workforce; acceptance of the facility; enforcing its warranties; undertaking responsibility for acceptable and efficient performance thereof; drawing up and observing budgets for operations, routine and major maintenance; and ensuring input availability.

Operator

The operator is responsible for the operations and maintenance (O&M) of the project. The operator customarily receives a service fee, which is subject to upward or downward adjustments based on performance results of the project. When a third-party operator is not used in a project, the sponsor(s) may undertake this role. However, if the operator is a shareholder of the project vehicle at the time of contract negotiation or later, a conflict of interest arises in the negotiation and implementation of the O&M agreement between the project vehicle and the operator.

Option

An option is a security that gives its holder the right, but not the obligation, to buy or sell an asset at a specified price within a specified period. The "underlying asset" can be a stock, commodity, a stock index such as the S&P 500, or one of many other similar assets. There are two types of options: calls and puts.

Order of priority

See *Cash* ***waterfall*** provisions.

Organizational documents

Memorandum and articles of association are the organizational document(s) which govern a corporation. All projects have organizational documents as required by the statutes of the host country that they are located in. Depending on requirements, sponsor(s) may wish to supplement these (largely) boilerplate constitutions to incorporate more sophisticated approaches to administration and oversight. Although there is more than one method for supplementation, shareholders agreements are the most common in project finance.

Output

A resource supply contract that requires the supplier to supply and sell to the project all of its production or output, or all of its production or output from a specified source. In effect, the specified source becomes a captive of the project. This may be the case, for example, in a mine mouth project involving a coal deposit and exploitation. Unless an independent study is done relative to exploitable reserves, there is no assurance for the project vehicle, however, that the output will be sufficient to service the requirements for the facility.

Overrun

The amount of funding needed above the original estimate to complete the project.

Pari passu
Equal ranking of security pro rata to the amount owed.

Pari passu clause
A covenant usually included in credit facilities and debt instruments requiring a borrower to ensure that its indebtedness under the relevant facility or instrument would, in liquidation, rank at least equally with all other unsecured indebtedness of that borrower.

Partial Credit Guarantee (PCG)
An instrument developed by the World Bank (and other donors) guaranteeing designated debt service payments against all risks – typically later maturities of an extended term loan.

Partial Risk Guarantee (PRG)
An instrument developed by the World Bank (and other donors) intended to cover commercial loans made to a developing country project against payment defaults arising from breaches by the sovereign of its contractual provisions.

Participation agreement
An agreement whereby one bank agrees to fund another bank's share of a loan on terms under which the seller contracts to repay the funding only if, and to the extent that, it received repayment from the borrower.

Payment block
A term used to mean a discontinuation of debt service, usually to a subordinated lender. See Subordination events.

Payment netting
The exchange of interest payment between two parties in an interest rate swap is executed through payment netting. If, for example, A owes B more interest payment than B owes A on a payment date, only A will make a payment to B equal to the difference between two payment amounts.

Performance bond
A guarantor (or "surety") guarantees the performance of a construction contractor under a contract. If the latter fails to perform, the surety may choose one of two options with which to comply with the terms of the issued instrument: (a) rectify defective work or incomplete construction itself; or (b) obtain a third party to do so.

Performance Liquidated Damages (PLDs)
See Bvydown.

Pledge
A mode of security created over project shares.

Political risk
Broad risks associated with cross-border investment and financing include: (a) existing legislation (e.g. tax, import duty/customs, ownership, transfer, environmental, foreign exchange laws) may change in the future resulting in a negative impact on the project's performance; (b) future administrations decide to nationalize or

expropriate project facilities; (c) permits, licences and other consents from the government are not in place in a timely fashion or are not granted or maintained; (d) provision of project services are necessary for government social objectives but are uneconomic for sponsor(s); (e) restrictions are placed on repatriation of profits and interest payments; (f) controls or restrictions apply on the rate of production of depletion of project's reserves; and (g) war, inconvertibility, insurrection or terrorism occur and adversely affect the viability of the project, etc.

Pool selling price

The price users pay to the pool for each energy unit consumed during each period.

Positive covenants

Promises made under a loan agreement by the borrower to undertake certain courses of actions. See Negative covenants.

Possibility analysis

Possibility theory is based on the premise that all values of the project parameters with a certain range are possible, with the exact value being unknown. In using possibility analysis, the user only needs to determine a possible range, and perhaps the most likely value for each investment parameter, without the estimate of each risk factor's relative frequency.

Possible reserves

Possible reserves, referred to as P3, are those reserves which analysis of geological and engineering data suggest are less likely to be recoverable than probable reserves. In this context, when probabilistic methods are used, there should be at least a 10% probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable reserves plus possible reserves. See Proved reserves and Probable reserves.

Power Purchase Agreement (PPA)

A PPA is an agreement for the sale of power (usually, on the basis of "available capacity" and "net electrical output") between the utility and the project vehicle. This structure serves two important functions:

- It guarantees a market, a cost basis for the power plant and corresponding predictable revenue stream for the power to be produced by the project (thereby allowing the facility to be financed on affordable payment terms and with a reasonable tariff).
- It defines in reasonable detail the rights, responsibilities and obligations of the project vehicle and the purchasing utility through the financing, construction and operational phases of the project.

Preferred creditor status (also preferred lender status)

Preferred lender status is a designation given to IMF, all World Bank Group institutions and many of the regional multilateral banks. According to their respective charters, these institutions are only able to lend to member countries if there is recognition that, in the event of a foreign exchange crisis, the preferred lenders have first call on available foreign exchange.

Prepayment

A repayment of any principal amount of a loan prior to the scheduled repayment date.

Present Value (PV)

Present value, in simplest terms, is the discounting of future cash flows, CF_t, using an appropriate discount rate, r, for the purpose of evaluating an investment. The following expression defines it:

$$PV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t}$$

where

CF_t = forecasted cash flows at period t

n = project life

r = opportunity cost of capital or the equilibrium rate of return on securities issued by a project with characteristics and risks equivalent to the project being valued

Price ceiling

A price ceiling is an instrument that creates a maximum price to which the purchaser of the instrument may be exposed. Below the ceiling price the purchasing party will pay the spot (floating)price.

Price collar

A price collar is an instrument that combines a price cap and a price floor, in effect creating a collar around a band of price risk that a party, or its lenders, are willing to accept. A party seeking the protection of a price collar, whether a seller or buyer, is essentially trading potential market upside for a limitation on potential market downside. The collar is structured so that the premium due under the purchase of the cap is equal to the premium that would he received by the sale of the floor. This is known as a zero-cost collar.

Price floor

A price floor is an instrument that creates a minimum price to which a selling party (the writer of the instrument) may be exposed. Above that minimum price, the writer will receive the spot (floating)price.

Price swap

A price swap exchanges the prices paid by two parties for a commodity, one of whom pays a fixed price while the other pays a specified index or floating price. Only net payments change hands. No actual exchange of commodities takes place.

While long-term swaps insulate a project from price increases and provide the maximum form of stability, such contracts do not provide the project with the opportunity to take advantage of falling prices. Consequently, swaps are regarded by some as an expensive form of hedging.

Prime rate

The rate at which US banks lend US dollars to their most creditworthy customers.

Principal

Sum on which interest accrues in a loan agreement; par value or face amount of a loan, exclusive of any premium or interest; the basis for interest computation.

Private flows

A term that refers generally to capital flows originating from private entities located in developed countries to private or public entities located in developing countries.

Private placement

A private placement occurs when the issue is purchased by insurance companies, pension funds and other institutional investors. Disclosure requirements for private placements are less stringent than for a public placement.

Probability analysis

Probability analysis is a valuation technique that utilizes "Monte Carlo simulation" to model combined effect of numerous risk factors according to their relative frequencies.

Probable reserves

Probable reserves, referred to as P2, are those reserves which analysis of geological and engineering data suggest are more likely than not to be recoverable. In this context, when probabilistic methods are used, there should be at least a 50% probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable reserves. See ***Proved reserves*** and ***Possible reserves.***

Proceeds account

The account into which all advances under the facilities, proceeds of base equity and contingent equity and all project revenues are paid. The borrower is permitted to make withdrawals from the proceeds account only to make payments in connection with project costs and transfers to other accounts in accordance with the order of priority.

Production loans

A production loan is usually structured as a non-recourse revolving line of credit intended to complete construction of a well or mine and/or provide working capital to the owner of an oil, gas or mineral property during development. The maximum amount of the loan is defined by a pre-agreed percentage, say 75%, of proved reserve values in the ground as verified by the lender's independent petroleum engineer or geologist.

Production payment

A mineral production payment is a right to a specified share of the production from a certain mineral property (or sum of money in place of production). The payment is secured by an interest in the minerals in place. Payment is dischargeable only out of runs of oil or deliveries of gas or minerals accruing to certain property charged with the production payment.

Production payment loan
A loan typically made to a project vehicle, secured by an assignment of future production of oil, gas or a mineral commodity. According to US practice, the project vehicle assigns to the lenders free of costs of production a specified undivided share of the commodity in the ground coupled with the right to extract the commodity if the operator should fail.

Project
A proposed facility, including the preparatory work such as project origination, contract negotiation, engineering, procurement, permitting, legal, siting and financial undertaking in anticipation of construction.

Project agreements
The project agreements contain the key technical, commercial and economic understandings related to the project. Generally, the contractual foundation of a project consists of three classes of agreements: (a)project agreements, including the concession, or off-take, agreement around which all contracts revolve; (b) finance documents; and (c)security documents. A key purpose of all project agreements is to allocate obligations and associated risks of the project to the project vehicle, or its counter-parties, in a legally enforceable manner.

Project appraisal report
A formal assessment of the viability of the proposed undertaking and, particularly, the robustness and predictability of revenue generation relative to its cash needs, particularly its operating expenses and proposed debt service schedule.

Project budget
See Operating budget.

Project completion
Generally, project completion occurs when defined technical and financial tests have been met, as stipulated in the finance documents.

Project costs
Project costs are those budgeted expenditures, as agreed by sponsors and lenders, needed to build and operate the project until it arrives at some pre-agreed milestones that define completion or the start of the commercial operations date (COD). Project costs include a variety of expenditures under: (a)engineering, procurement and construction (EPC)contract; (b)other construction-related expenses; (c) costs of developing and financing the project; and, usually, (d)any additional amounts needed to fund debt service reserve accounts (DSRAs).

Project development
The process of preparing a new project for commercial operations. The process occurs in three distinct phases:

(a) Origination of a project, usually a capital-intensive facility, by securing a conditional right from a ceding authority pursuant to a tendering process or alternative means to build and operate the facility.
(h) Negotiating and formalizing the needed project agreements with major project

participants that serve the purpose of defining the technical, economic and commercial outlines of the project.

(c) Mobilizing required financing through own resources, or jointly with lenders, as well as supervising management organization, construction and successful commissioning of the facility.

These tasks define three distinct stages in the process, referred to as "pre-bid stage", "contract negotiation stage" and the "money-raising stage" of project development.

Project documents

See Project agreements.

Project Finance

A Project Finance transaction involves the mobilization of debt, equity, contingent equity, hedges and a variety of limited guarantees through a newly organized company, partnership or contractual joint venture for the purpose of building a capital-intensive facility and operating a discrete business activity. In such a transaction, lenders look to the assets of the project vehicle as collateral and its projected cash flow for full recovery of their loans.

Project Life Cover Ratio (PLCR)

PLCR is defined as the net present value (NPV)of the project's cash available for debt service (CADS)over its defined life to bank debt outstanding on any given day. In this case, the numerator would consist of project CADS over all of the project's life, as defined by the project agreements, discounted by the average cost of debt in the project debt plan. In an infrastructure financing, defined life consists of the period from financial closing to the end of the concession, or off-take, period. In contrast, in oil and gas field developments, defined life is the date from financial closing to that date when 25% of the original reserves of the field in question will remain in the ground given projected levels of extraction. In this case, the CADS are calculated up to, but not beyond, that date. A similar concept might be applied to the financing of any mineral extractive project, such as a gold mine. For both extraction and infrastructure projects, the denominator is simply the principal outstanding as of any given date.

Project taxes

All taxes payable, or to be payable, by the borrower.

Project vehicle

Sponsor(s) generally form a special purpose (incorporated or unincorporated) vehicle that is registered to do business in the host country for the purpose of implementing and operating the project. Where a corporate joint venture or limited partnership is used, the rights and obligations in terms of funding, administration, profit sharing, transfer of interests, termination and other issues are defined in a shareholders or joint venture agreement. Sponsor(s) are required to make capital investments in the special-purpose vehicle according to the terms of their agreement. Within each of these structures, there is usually a designated lead sponsor(s). In the case of a corporate joint venture, the lead sponsor(s) is the leader of the consortium

and in the case of a partnership, it is the dominant party under the venture arrangements.

Project works
The design, development and construction of the power station and any other works contemplated by the construction contracts.

Projected Debt Service Cover Ratio (PDSCR)
The PDSCR is defined as a numerator consisting of projected cash available for debt service (CADS) over the following full year of operations divided by project debt service, i.e., principal plus interest.

Pro-rata sharing
An agreement by syndicate banks to share pro rata, according to commitments/ outstandings, all amounts received from a borrower,

Proved reserves
Proved reserves, usually referred to as P1, are those quantities of natural gas, which by analysis of geological and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under current economic conditions, operating methods, and government regulations. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. See Probable reserves and Possible reserves.

Punch list
Contains items that are outstanding to the mechanical completion of the facility, usually prepared by the lenders' independent engineer (IE).

Put option
A put option provides the option holder (the buyer) with the right (but not the obligation) for a specified period to sell a specified quantity of a commodity at a specified price. The selling party (the writer of the put) is obligated to perform if the right is exercised.

Put swaption
This type of swaption gives the buyer the right, but not the obligation, to enter into an interest rate swap during a specified period, at which time the buyer will pay a fixed rate calculated on an agreed notional principal and receive a variable rate on the same amount. If the option is exercised, the writer of the option agrees to pay a variable rate to the buyer and receive a fixed rate in return calculated on the notional principal. The buyer of the put pays the writer a premium for this right.

Quick ratio
See *Acid* test ratio.

Range notes
Range notes typically pay interest at an above-market interest rate if LIBOR stays within a predefined interest rate ceiling and floor, i.e., defined by collar. If LIBOR moves above or below the ceiling, the interest rates reduce to predetermined levels.

Rating
An evaluation provided by a rating agency to a borrower's or security's creditworthiness.

Rating agencies
Agencies that study the financial status of a borrower, and then assign a quality rating to securities issued by that borrower.

Real options analysis
Real options analysis is built upon Option Pricing Theory originally developed by Fischer Black and Myron Scholes (1973)and elaborated by Robert Merton (1973). It is the application of option pricing theory to investment in real assets. Real options analysis is the analysis of the investment options embedded in real assets, e.g. mineral resources and investment in research and development (R&D), hence the term real options analysis.

Recourse
In the event that the project vehicle (and its associated escrows, sinking funds or cash reserves/standby facilities) cannot service the financing, or completion cannot be achieved, then the lenders have recourse to either cash from other sponsor/corporate sources or other non-project security.

Recruiting bank
The institution that recruits the experts needed to assist the lenders during due diligence for the evaluation of key technical, legal, market, insurance, environmental, modelling and other similar issues.

Rehabilitate-Operate-Transfer (ROT)
See Appendix 1.1.

Rehabilitate-Own-Operate (ROO)
See Appendix 1.1

Representation
A representation under a loan agreement is a statement of historical, or current fact that induces the lenders to enter into the contract. See Representation and warranties.

Representations and warranties
A series of statements of law and/or fact made by the borrower of a credit facility on the basis of which the banks agree to enter into the facility. The representations will typically cover such matters as the legality and enforceability of documentation, the financial condition of the borrower and the absence of any material litigation or other proceedings against the borrower. Material inaccuracies in the representations will normally constitute default under the loan agreements.

Reserve account
A separate amount of cash, or letter of credit (L/C), to service a payment requirement such as debt service or maintenance.

Reserved Discretion(s) (RDs)
Reserve discretion(s) are rights of the project vehicle under the project agreements

which it agrees to share with lenders as part of the conditionality associated with their loans.

Resource Supply Agreement (RSA)
A resource supply agreement is executed between an input supplier and the project vehicle for the sale of all of the project's requirements for inputs consistent with its obligations to deliver outputs under the off-take agreement. The input can pose a serious risk during the operating period because each key risk, e.g. price, transportation, availability and quality, irrespective of its magnitude, presents a competing demand on the cash flow of the project vehicle.

Restoration loans
If at any time, after the commercial operations date (COD) of an infrastructure project, the project vehicle undertakes a restoration of the facility that was made necessary by the occurrence of political force majeure (FM), the sponsor(s) will be required to restore the facility to its previous performance level. However, the sponsor's liability for restoration will not exceed normally a pre-negotiated threshold.

Restricted actions
Inter-creditor provisions usually restrict the actions of both the subordinated lender and the borrower in order to provide comfort to the senior lender that neither the subordinated lender nor the borrower will take any action adversely affecting the senior lender's financial interests.

Restricted payments
Any:

(a) Dividend or other distribution (in cash or in kind) in respect of the share capital of the borrower.

(b) Payment in respect of subordinated sponsor(s) loans.

Return on Assets (ROA)
Net profits after taxes divided by assets. This ratio helps a borrower determine how efficiently it generates profits from available assets.

Return on Equity (ROE)
Net profits after taxes divided by shareholders' equity.

Return on Investment (ROI)
Net profits after taxes divided by investment.

Revenue bonds
As the name implies, a revenue bond finances a revenue-generating project and is backed solely by the project and its cash flow prospects. A revenue bond is not backed by the full-faith and credit of the municipality.

Revenues
Sales and/or royalty proceeds.

Revolving credit agreement
Also known as a revolver, a revolving credit agreement is a legal commitment on the part of a bank to extend credit up to a maximum amount for a definite term. The notes evidencing debt are short-term, such as 90 days. As notes become due,

the borrower can renew the notes, borrow a smaller amount or borrow amounts up to the specified maximum throughout the term of the commitment. The borrower is usually required to maintain compensating balances against the commitment and pay a commitment fee on the average unused portion of the revolving credit. The term of a revolving credit agreement is generally two years or longer.

Risk sharing
Refers to the term and conditions under which sponsor, project vehicle and the major project parties agree to share risks associated with an undertaking.

Roller coaster swaps
A roller coaster swap accommodates the characteristics of both amortizing and accreting swaps. In this case, the outstanding principal increases during the construction period and then declines during the operating period with scheduled repayments of interest and principal.

Samurai bonds
Samurai bonds are public issues denominated in yen placed in Japan, relied on by large and very creditworthy borrowers such as multilateral organizations and foreign governments.

Samurai lease
Samurai lease involves a Japanese lessor, a foreign lessee, and a lease denominated in dollars. The leased equipment under a Samurai lease shows up as an importation for Japan because the Japanese-leasing companies are the formal owners of the equipment.

Securities and Exchange Commission (SEC)
Securities and Exchange Commission which regulates disclosure and practices for companies and public issues of debt and equity in the US.

Secured account
An account except the restricted payment account. See Accounts.

Security
Collateral consisting of all the assets of the project vehicle.

Security document
The following are security documents of a projecr:

- Deed of mortgage.
- Memorandum of deposit of title deeds.
- Hypothecation of movables, and floating charge over intangible assets of the project.
- Share pledge or equitable mortgage of shares.
- Assignment of project documents.
- Offshore security document.
- Direct agreements.
- Powers of attorney.
- Security trust and inter-creditor deed.

Security trustee
The security trustee is the third-party bank appointed by the lending banks to perform certain agency functions related to the security. This would include holding the security, registering, perfecting, releasing and/or enforcing it, as necessary, and generally following the instructions of those lenders authorized by the agency agreement to make related decisions. See Offshore security *trustee* and Onshore security *trustee*.

Senior debt
Senior debt is defined as those claims on the project vehicle and its assets identified in the financing documents as having priority rights with respect to payment and security.

Sensitivity analysis
Analysis of the impact on project cash flow of a change in one of the input variables.

Setoff clause
A clause which permits one party to set off any cash deposits made with it by another against amounts owing to it under the loan agreement.

Several liability
A legal term that conveys the meaning that non-performance by one entity of its obligations will not affect or alter the obligation of the other parties.

Shareholders agreement
A shareholders agreement is the generic term for any contract between two or more shareholders governing their conduct in relation to the corporation, or partnership, in which they own shares and in the range of corporate activity permitted to them.

Shibosai bonds
Shibosai bonds are instruments denominated in yen that are placed in the Japanese capital market privately.

Shogun lease
Shogun lease involves a foreign lessee, a Japanese lessor and a lease denominated in yen.

Site
The site on which the project facilities will be located, as described in the land lease agreement (LLA).

Solicited proposal
A ceding authority issues a call for proposals from interested private bidders to compete with each other usually under well-defined procedures for the rights to build and operate a specific infrastructure facility. See Unsolicited proposal.

Sovereign Credit Rating (SCR)
Generally, the international financial markets require substantial and reliable country-specific information in order to assess the risks of doing business and/or incurring exposure in any country. A sovereign credit rating efficiently supplies this information to numerous financial market participants with potentially widespread benefits to users of capital and the economy at large.

Sovereign immunity
A doctrine in law under which a sovereign government may not be sued in an international forum without its consent or a sovereign government is not obligated to enforce a foreign judgement or arbitral award.

Special Purpose Vehicle (SPV)
A borrower established for a particular purpose such as obtaining off-balance sheet or tax treatment advantages or to isolate the other assets of the sponsor(s) from the creditors of the project borrower. See Project vehicle.

Sponsor(s)
A project sponsor(s) may consist of an individual but more often is organized as a company, limited partnership or unincorporated joint venture responsible for the development of a project. It usually has some previous experience in the field. For example, the sponsor(s) of a power project is usually an existing independent power producer (IPP) or power utility. For a road project, the sponsor(s) would be a toll road operator or a construction company experienced in building and operating toll roads. In both cases, the sponsor(s) must demonstrate that each possesses a previous track record and relevant experience in the implementation and operation of the facility that is to be built and/or operated. Often, but not always, sponsor(s) have their headquarters in industrialized countries.

Spot
Current market price.

Spot price based pools
In spot price based pools, all market clearing prices are set on a spot basis. Under this kind of arrangement there is no capacity payment.

Standby letter of credit
A letter of credit that provides for payment to a beneficiary when that beneficiary provides certification that certain obligations have not been fulfilled. For example, if the construction borrower does not complete its work on time, the beneficiary (generally the sponsor(s)) can recover payment from the bank issuing the standby letter of credit.

Stranded costs
Stranded costs arise when there are old contracts to purchase electricity. The rates for that contract are higher than present market prices but they have to be honoured.

Step-up provision
Step-up provisions are intended to enhance agreements in cases where there are multiple purchasers of the output (or multiple users of the facility). A step-up provision is often included in the purchase and sale contracts. It obligates all the other purchasers to increase their respective participation, thereby taking up the slack, if one of the other purchasers goes into default. In effect, each of the purchasers co-insures the obligations of the others.

Structural subordination
Occurs when a bank or other institution lends to a holding company that uses the

loan proceeds to infuse capital, in the form of equity or deeply subordinated shareholder loans, into one or more newly purchased operating companies. The holding company lender is structurally subordinated in right of payment relative to third-party lenders that may be extending credit directly to the operating subsidiaries because (a) the holding company lender only has a right to receive payment from the holding company; (b) the holding company's only source of funds typically are dividend payments from the operating subsidiaries; and (c) those dividend payments are contractually subordinated in right of payment to debt service owed by the operating subsidiaries to their direct lenders.

Structured corporate
Also known as Genco.

Subordinated loan
Subordinated debt is defined as those claims on the project vehicle and its assets that rank junior to the claims of senior debt in priority.

Subordinated sponsor(s) loans
All loans provided by the sponsor(s) to the borrower except:

(a) Sponsor(s) bridging loans (unless re-designated as subordinated sponsor(s) loans).
(b) Sponsor(s) restoration loans.

Subordination events
Agreed events that trigger the blockage of debt service due to a subordinated lender.

Subrogation
The subordinated lender should have the ability to assert the rights of the senior lender – i.e., to be subrogated to the rights of the senior lender – to the extent of payments received on the subordinated debt by the subordinated lender but turned over to the senior lender pursuant to the subordination agreement. From the perspective of the borrower, amounts paid to the subordinated lender and then turned over to the senior lender are credited against the debt owed to the subordinated lender.

Subsequent conditions precedent group
Usually lenders committing ***66-75%*** of the total loan commitments at the time of a subsequent disbursement.

Subsidiary
An entity from time to time of which a person has direct or indirect control, or owns directly or indirectly more than ***50%*** of the share capital or similar right of ownership.

Suppliers credit
An arrangement under which a supplier agrees to accept deferred payment terms from the sponsor(s) and finances itself by discounting or selling the sponsor's bills or promissory notes with a bank in its own country.

Syndicated credit facility
A syndicated credit facility is one in which a number of banks undertake to provide a loan or other support facility to a sponsor(s) on a pro rata basis under identical

terms and conditions evidenced by a single credit agreement. These facilities are generally variable rate in nature, with or without amortization and the pricing will normally consist of a fixed spread over a short-term base rate (which is adjusted periodically during the life of the loan), with commitment fees, agency fees, management fees, offsetting balances, security, etc.

Syndicated loan
A commercial banking transaction in which two or more banks participate in making a loan to a borrower.

Synthetic leases
The Financial Accounting Standards Board (FASB)approved treatment for certain qualifying leases. Lessee is able to account for the transaction as an operating lease for the purposes of reporting to shareholders and a capital lease for the purpose of tax filing.

System marginal price
The price set by the highest bid resource, dispatched in any given period (sometimes referred to as "market clearing price").

Take-and-pay
If the project's output is deliverable and can be taken, it will be paid for.

Take-or-pay
In the event the project's output is not taken, payment must be made whether or not the output is deliverable.

Take-out
A financing to refinance or take out another, **e.g.** a construction loan.

Takeover
A takeover may have the following meaning in the finance documents:

(a) Mechanical completion of the project has been achieved.
(b) Commercial operation tests of the project were successful.
(c) The facility has satisfactorily completed its all performance tests.
(d) The engineering, procurement and construction (EPC) contractor is released from obligations.

Tax gross-up clause
A clause in a loan agreement providing that all payments to the lenders under the finance documents shall be made without any deduction. If any tax is deducted from any amounts paid to the lenders, the project vehicle has to pay such additional amounts as may be necessary to ensure that the relevant lender receives the scheduled amount.

Tenor
The number of years a loan is outstanding; the loan term.

Term loan
A loan with a fixed drawdown period and repayment schedule where the principal is repaid with equal quarterly or semi-annual instalments.

Term sheet
A document which is not generally intended to be legally binding until it forms part of a formal offer, setting out the main agreed terms and conditions of a transaction between a borrower and lender.

Throughput agreement
A throughput agreement is used in connection with an oil or natural gas pipeline financing. Under a throughput, an oil/gas company will be transporting the commodity via pipeline from its source to some destination where it is further treated, or sold to a third party. The project vehicle that is organized to own the pipeline will enter into an agreement with its parent, the oil/gas company, to transport the commodity each month, at a specified price. A throughput requirement may be augmented by a cash deficiency agreement, also called a keep-well agreement. It obligates the oil/gas company shareholder(s) to advance funds to meet obligations if, for any reason, the project vehicle does not generate sufficient cash to meet its operating expenses or debt service.

Tolling agreement
In a tolling agreement, the project vehicle levies tolling charges for processing raw materials usually owned and delivered by several project sponsor(s). At a minimum, the total tolling charges for such a project vehicle will be equal to the total operating costs and fixed charges, including debt service, taxes and profit. The tolling charge payable by each shareholder is generally equal to its proportionate share of the total expenses incurred by the project. A tolling contract is similar in structure to a cost-of-service contract. The structure is sometimes used to mobilize finance for merchant power plants (MPPs).

Transaction document
A finance document or a project agreement. See **Finance** documents and Project agreements.

Transfer risk
Transfer risk arises where an entity is able to convert local proceeds into foreign currency but is restricted by local authorities from transferring such foreign currency abroad.

Trust deed
In a loan, a contract defining the obligations of the borrower and appointing a trustee to represent the interests of lenders.

Trustee
A bank or other third party which administers the provisions of a trust agreement. In financing transactions, these may relate to a loan.

Turnkey contract
Three general types of construction contracts exist: (a) engineering; (b) procurement; and (c) construction. A fourth is an EPC contract covering all three phases of construction, sometimes referred to as a turnkey contract. Because it encompasses all phases of construction, a turnkey provides single-point responsibility for its execution. Under its terms, the contractor accepts full responsibility for delivering to

the project vehicle a fully operational facility with agreed specifications ("on-spec") by a certain date ("fixed schedule") and at a specified price ("fixed price").

Underwriter

An underwriter, an investment or commercial bank that assumes the mandate to become the financial advisor to the project vehicle and, pursuant to a successful negotiation of terms and conditions, is willing to guarantee that the debt being sought will be successfully placed. The underwriter takes the risk of a successful syndication by making up whatever shortfall there is between debt being sought and that successfully placed.

Unsecured loan

A loan made on the general credit of the borrower. The lender relies on the borrower's balance sheet and the capability of the borrower's management to manage its assets and produce cash flows sufficient to repay the debt. No assets are pledged.

Unsolicited proposal

Prepared under the initiative of a private entity and directly submitted to a ceding authority. Quite simply, the private firm(s) foresees an undeserved market in the host country and proposes a specific project with defined attributes to address its perceived needs.

Unwind

To reverse a swap or hedge.

Variable margin

A margin which varies during the term of a loan, often in relation to the credit rating of the borrower.

Variable rate of interest

An interest rate which fluctuates during the term of a loan and which is adjusted upwards or downwards during the term of a loan in accordance with an agreed index. See ***Fixed rate*** of ***interest.***

Vertical unbundling

Occurs when upstream activities are separated from downstream ones. For example, in the power sector, the generation of power may be separated from the transmission and distribution functions.

Waiver of sovereign immunity

A waiver of sovereign immunity is a contractual affirmation made by the government agreeing to be treated as a commercial party for purposes of resolving legal issues. See ***Sovereign immunity.***

Warranty

Warranty is a guarantee that a given fact will exist at some future date, as warranted.

Working capital

Cash required to fund inventories and accounts receivable. Accounting definition is

current assets less current liabilities. It is recovered entirely when the project ceases.

Working capital maintenance agreement

An undertaking, usually given by a parent, to creditors of its subsidiary to ensure that the subsidiary has sufficient working capital to meet its commitments in accordance with financing and project documents.

Works

The design, development and construction of a facility and any other works contemplated under the engineering, procurement and construction (EPC) contract.

Yankee bonds

Yankee bonds are the designation given to long-term debt instruments that are issued in the US capital markets by foreign issuers. A major factor in the more favourable reception was the adoption of Rule 144A by the Securities and Exchange Commission (SEC) in 1990. The SEC permits the purchase of foreign unregistered securities by US qualified institutions with at least US$100 million under management as well as the subsequent sale of these securities to other qualified institutional buyers without the requirement for a minimum holding period.

Yield

The rate of return on a loan, expressed as a percentage and annualized.

Zero coupon swaps

In a zero coupon swap, there is only one fixed payment to be made by the fixed-rate payer vis-h-vis a series of variable payments received on each payment date during the life of the swap. Generally the fixed payment takes place on the maturity date of swap, when the zero coupon instrument is redeemed.

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