

Project Financial Management

Lecture Two: The Project Finance Markets

PMG 615

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INTRODUCTION

- Private-sector project-finance debt has traditionally been mainly provided from two sources—commercial banks and bonds. Commercial banks provide long-term loans to Project Companies; bondholders (typically life-insurance companies and pension funds, which need long-term cash flows) purchase long-term bonds (tradable debt instruments) issued by Project Companies. Recently these non-bank lenders have also begun to make direct loans to projects, and participate in debt funds. Other types of private-sector finance are sometimes also used in projects.
- Although the financial and legal structures and procedures are different, the criteria under which debt is raised in each of these markets are much the same. (So ‘lender’ is used in this book to mean either a bank lender, bondholder, non-bank lender or debt fund.)

A debt fund is a Mutual Fund scheme that invests in fixed income instruments, such as Corporate and Government Bonds, corporate debt securities, and money market instruments etc. that offer capital appreciation. Debt funds are also referred to as Fixed Income Funds or Bond Funds.

COMMERCIAL BANKS

Commercial banks are the largest providers of project-finance—nearly 90% of the private-sector project finance debt raised in 2012. In North Africa and the Middle East, project finance is used for petrochemical, LNG, power-generation and desalination projects, and tends to fluctuate from year to year based on relatively few large projects.

Table 4.2 Top 20 Lead Arrangers of Bank Project-Finance Loans, 2000*.

Lead Arranger	Country	Amount (\$ millions)	Number of Loans	Average Loan (\$ millions)
Citigroup	U.S.A.	11,927	51	234
Société Générale	France	9,616	30	321
Bank of America	U.S.A.	9,370	33	284
ABN AMRO	Netherlands	7,875	31	254
JP Morgan	U.S.A.	7,472	24	311
Credit Suisse First Boston	U.S.A.	6,719	10	672
Westdeutsche Landesbank	Germany	6,716	37	182
Deutsche Bank	Germany	6,487	22	295
BNP Paribas	France	3,712	24	155
Barclays Capital	Britain	3,423	23	149
Dresdner Kleinwort Wasserstein	Britain	3,155	24	131
Merrill Lynch & Co Inc	U.S.A.	2,631	4	658
Bank of Nova Scotia	Canada	2,165	6	361
Mizuho	Japan	1,976	14	141
Goldman Sachs	U.S.A.	1,832	3	611
HSBC Bank	Britain	1,464	1	1464
Crédit Lyonnais	France	1,339	9	149
Bank of Tokyo-Mitsubishi	Japan	1,272	7	182
Abbey National	Britain	1,200	7	171
Bank of Montreal	Canada	1,040	5	208

Source: As for Table 2.1.

*These are banks which arranged and underwrote loans (cf. §5.2), sub-underwriters and participating banks are not included; loans with more than one original lead arranger are divided *pro rata*.

Table 4.3 Top 20 Lead Arrangers of Bank Project-Finance Loans, 2012.

Lead Arranger	Country	Amount (\$ millions)	No. of Loans	Average Loan (\$ millions)
Bank of Tokyo-Mitsubishi UFJ	Japan	11,618	96	121
State Bank of India	India	10,948	32	342
Sumitomo Mitsui Banking Corp.	Japan	7,576	68	111
Mizuho Financial	Japan	6,234	51	122
Korea Development Bank*	Korea	5,411	27	200
HSBC	Britain	4,394	34	129
Crédit Agricole	France	4,159	36	116
Société Générale	France	4,084	35	117
BNP Paribas	France	3,793	35	108
Banco Bilbao Viscaya Argentaria	Spain	3,521	45	78
Lloyds TSB	Britain	3,251	25	130
Commonwealth Bank of Australia	Australia	3,158	21	150
Standard Chartered	Britain	3,035	19	160
ING	Netherlands	2,946	29	102
National Australia Bank	Australia	2,920	20	146
ICICI	India	2,796	13	215
UniCredit	Italy	2,789	29	96
IDFC	India	2,679	22	122
Axis Bank	India	2,645	9	294
ANZ	Australia	2,457	19	129

Source: As for Table 2.1.

*Cf. §16.4.2.

COMMERCIAL BANKS

Traditionally there has been an inner circle of some 20 major banks that put together project finance transactions as lead arrangers on a worldwide basis, with reasonably large project-finance operations concentrated in key locations around the world. At a minimum, a leading international project-finance bank would have one project finance office in the United States (covering the Americas), one in Europe (covering Europe, the Middle East, and Africa), and one in Asia/ Australasia, and perhaps 50 professional staff (at least) in these offices.

COMMERCIAL BANKS

These banks built up a strong position through their relationships with foreign investors, their structuring skills, and using their experience from other markets. Another factor favoring the international project-finance banks is that in some Asian markets raising a loan in \$ and then swapping into the local currency produces a lower cost of finance than direct lending in that local currency.

COMMERCIAL BANKS

Bearing in mind that modern project finance was largely invented by American banks, it is surprising to see that although prominent in 2000, by 2012 they had disappeared from the list. There seem to be two main reasons for this—firstly that project finance is expensive in staffing terms, with an unpredictable income stream (income comes in lumps as projects are signed, rather than a steady stream), and secondly because U.S. banks are not natural long-term lenders, which is a key requirement for project finance.

COMMERCIAL BANKS

It can also be seen that while European banks formed a large part of the market in 2000, their involvement was reduced by 2012. This reflects the major funding problems which these banks had after 2008. Apart from the French banks, the most consistent players in the market over this period have been the Japanese, who continue to benefit from a strong market in Asia.

Not surprisingly, the big new players on the block are the Indian banks. However, it should be noted that State Bank of India, by far the largest of these, is a majority state-owned bank. So, although it is a commercial bank it is questionable if it should be on this list as compiled by Project Finance. Similarly, given the size of the Australian market, it is not surprising to see that two Australian banks are in the top 20.

COMMERCIAL BANKS

It is usually preferable for a project in a particular country to raise its funding from banks operating in that country, firstly because they have the best understanding of local conditions, and secondly because the funding can be provided in the currency of the country, so avoiding foreign exchange risks. Thus in developed countries projects are normally financed by local banks or foreign banks with branch or subsidiary operations in the country concerned. Such financing constitutes the largest proportion of the project finance market.

COMMERCIAL BANKS

In some developing countries, however, this approach may not be possible. There may be no market for long-term loans in the domestic banking market, or the domestic banks may have no experience in project finance. Loans in foreign currency may not be feasible. In some developing countries (such as India and Brazil), there are public-sector development banks that can help to fill the gap if the local commercial banks are not able to provide the funding needed, but their capacity is also limited.

COMMERCIAL BANKS

Other banks participate in the project-finance market at the next level down as sub-underwriters or participants in syndicated loans. These generally participate in syndications of domestic loans in their own countries, though others may join a wider range of loans around the world originally arranged and underwritten by the larger players in the market, however, loan syndication has greatly reduced in the Americas and European markets.

BONDS

A bond issued by a Project Company is basically similar to a loan from the borrower's point of view, but it is aimed mainly at the non-banking market and takes the form of a tradable debt instrument, originally evidenced by a paper certificate, but now generally superseded by electronic registration. agrees to repay to the bond holder the amount of the bond plus interest on fixed future installment dates.

BONDS

Buyers of project-finance bonds are investors who require a good long-term fixed-rate return without taking equity risk, e.g. insurance companies and pension funds, which have matching long-term liabilities. The market for project-finance bonds is far narrower in scope than that for bank loans, but significant in certain countries. Pricing is usually based on the yield on government debt for the same term, plus a margin for extra risk.

BONDS

Bonds may either be public issues (i.e. quoted on a stock exchange and— at least theoretically—quite widely traded), or private placements, which are not quoted and are sold to a limited number of large investors. It is possible for a private placement to take place without the intervention of an investment bank (i.e. the Sponsors deal directly with bond lenders), although this is not common.

3. Exchange and Over-the-Counter Markets

Financial instruments such as foreign exchange contracts, bonds, equities, commodities, and derivatives are traded on either regulated financial markets, called exchanges, or the over-the-counter markets. An exchange is a centralized marketplace where brokers and traders meet and, on behalf of their customers or on their own account, buy and sell standardized financial instruments such as equities, bonds, commodities, options, and futures.

For any financial instrument to be traded on an exchange, it must meet both regulatory requirements imposed by the exchange's regulator and listing requirements imposed by the exchange itself.

For instance, many stock exchanges impose listing requirements on the listed company regarding the number of shareholders, the stability of earnings, and the size of the company's assets. Futures exchanges list standard contracts that first must be approved by a regulatory body. Any changes to the contract's terms must also be approved.

Whether the transaction takes place on the trading floor of an exchange or in an electronic marketplace owned by an exchange, the parties to the transaction operate according to an agreed set of exchange rules, which in many cases requires clearing their trades and transactions through a clearing house that is typically affiliated with the exchange.

A **clearinghouse**, often referred to as the central counterparty (CCP), becomes the buyer to each seller and the seller to each buyer, effectively standing in the middle of the transaction to guarantee the financial performance of the trade as agreed by the parties to the transaction. Each clearinghouse or central counterparty has its own rules, regulations, and conventions, which may differ across the different types of financial instruments that are traded on the same exchange that the clearinghouse or central counterparty clears.

While exchanges offer standardized products, price transparency, clear rules that govern the transactions between the buyers and sellers, and collateral support through the clearinghouse, they do not offer the flexibility many sophisticated investors need, as such investors must individually structure the trades that they want for hedging or other purposes. These transactions are executed in the over-the-counter markets instead, where both the flexibility and the ability to customize trades and transactions exist.

The over-the-counter or OTC market does not have a physical location for its marketplace. However, there has been a major drive toward requiring the trading of OTC transactions through a centralized electronic marketplace to allow for greater transparency around the OTC marketplace, and a perceived increase in safety as it would relate to counterparty default.

In the OTC market, the buying and selling of financial instruments takes place directly between the two parties to the transaction through the use of phones or computer networks, with each party directly assessing and taking on the risk of the creditworthiness of the other party to the transaction. Most notably, foreign exchange, derivatives, bond, and commodity trading, and some equity trading activities are conducted in the OTC markets. Due to the general need and/or desire in the market to customize instruments and to match as closely as possible the needs and desires of the two parties to the transaction, the OTC market is significantly bigger than the exchange marketplace.

The use of collateral in the OTC market is not regulated or standardized, as it is in the exchange-traded markets. When parties to an OTC transaction demand collateral from each other, they negotiate to determine the size and quality of the specific type of collateral they would be willing to accept to ensure that performance will occur as agreed. In some limited instances, standardized OTC transactions will move to an exchange marketplace for the primary reason of using a clearinghouse to guarantee the transaction. The movement of these transactions to an exchange for this purpose of ensuring counterparty credit is developing rapidly, reflecting the interest from market participants to extend the protection offered by central clearinghouses to OTC transactions. Figure 6.10 is a general comparison.

	Over-the-Counter Market	Exchange-Traded Market
Contract terms	Separately negotiated	Standardized
Size of a trade	Parties to the transaction agree on the size.	Set by the exchange, depends on the product and standardized specifications. May need to purchase multiple contracts, depending on how much of the product is required.
Price	Parties determined price through negotiation.	Generally reflects the value market participants trade at. Price is disseminated by price-reporting services.
Legal requirements	Separately agreed and documented between the parties, although form “master agreements” are usually set forth in general terms with annexes used to customize the agreement.	Parties agree to abide by the rules of the exchange, which are legally binding.
Transparency	Little if any transparency	Highly transparent
Counterparty risk	Each party determines the risk of its counterparty and limits its transactions according to its own risk appetite for that counterparty.	Exchange clearinghouses guarantee the transaction, eliminating the need to consider the counterparty’s risk profile. However, should look at exchange guarantee system to ensure comfort with exchange clearinghouse guarantee system and risk.
Collateral	Individually negotiated and held by the party demanding the collateral.	Broker requires collateral from its customer, which is calculated on the exchange’s margin requirements, although the broker may ask for more from the customer than the exchange may require. The broker transfers the margin to the exchange to cover all its customer positions at that exchange. The broker’s margin requirement is tied directly to the exchange’s margin requirements.

FIGURE 6.10 A General Comparison between OTC and Exchange Markets

BONDS

Since project-finance bonds are a natural fit for insurance companies' and pension funds' businesses, as well as private investors investing through bond funds, this relative lack of development perhaps seems strange. But project-finance bonds have a number of disadvantages for such investors:

- Usually a 20-year bond is repaid in one amount at the end of 20 years; a 20-year project-finance bond is repaid in irregular installments over the 20-year period, beginning at the end of the project's construction phase of say 2 years, which makes it a less attractive investment to an investor who is looking for a long-term return. (This irregular cash flow also makes it difficult to compare one bond with another).

BONDS

- Analyzing the credit risks in a project-finance bond, as well as monitoring the project's performance, is complex, and if project-finance bonds only form a small part of the investor's portfolio, it is not cost-effective for the investor to pay for qualified staff to do this.

Credit risk is the possibility of a loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Traditionally, it refers to the **risk** that a lender may not receive the owed principal and interest, which results in an interruption of cash flows and increased costs for collection.

BONDS

- Project-finance bonds are normally rated at the bottom end of investment grade, which is too risky for many bond funds.
- The latter disadvantages were overcome in some countries by bond insurance, this is now difficult to obtain.

BONDS

1. The U.S. Bond Market:

There is a long history of issuing bonds for infrastructure (much longer than the history of bank project finance), but the U.S. bond market has been the main model for the development of today's project-finance bond markets. The U.S. market is by far the world's largest.

It is worth noting that bonds account for 53% of U.S. corporate debt, and bank loans 47%, compared to the Eurozone and Britain, where bank loans account for 85% of corporate debt.

BONDS

There are two categories of bonds in the U.S. which are relevant to project finance—the **municipal bond market**, whose investors until recently often relied on insurance to cover credit risks **and the corporate bond market** (which in this context includes private-sector project-finance bonds), the latter being similar to bond markets for raising project finance in other countries.

BONDS

- The U.S. municipal bond (‘muni’) market is more than a century old, **Municipal bonds** are debt securities issued by states, cities, counties and other governmental entities to fund day-to-day obligations and to finance capital projects such as building schools, highways or sewer systems. By purchasing municipal bonds, you are in effect lending money to the bond issuer in exchange for a promise of regular interest payments, usually semi-annually, and the return of the original investment, or “principal.” A municipal bond’s maturity date (the date when the issuer of the bond repays the principal) may be years in the future. Short-term bonds mature in one to three years, while long-term bonds won’t mature for more than a decade.

- Generally, the interest on municipal bonds is exempt from federal income tax. The interest may also be exempt from state and local taxes if you reside in the state where the bond is issued. Bond investors typically seek a steady stream of income payments and, compared to stock investors, may be more risk-averse and more focused on preserving, rather than increasing, wealth. Given the tax benefits, the interest rate for tax-exempt municipal bonds is usually lower than on taxable fixed-income securities such as corporate bonds with similar maturities, credit qualities and other items.

BONDS

Muni bonds are divided into two main categories:

- **General Obligation Bonds:** are issued by states, cities or counties and not secured by any assets. Instead, general obligation are backed by the “full faith and credit” of the issuer, which has the power to tax residents to pay bondholders. Obviously, these do not provide a project-finance form of financing.
- **Revenue Bonds:** These are backed only by the revenue of the issuing entity, which may be an education board, water and sewage utility, transportation authority, and so on (*i.e.* a public-sector entity). These are akin to corporate bonds in risk rather than project-finance based since the borrowers often already have an established cash flow. But it is also possible for a new project, *e.g.* a toll road, to issue Revenue Bonds, in which case the buyer of the bond is taking a project finance-type risk on a specific public-sector project.

BONDS

•A sub-set of Revenue Bonds, which are important for private-sector project finance, especially Public-private partnership (PPP) projects, are Private Activity Bonds (‘PABs’). These are revenue bonds issued through a public-sector entity but on-lent to a private-sector Project Company, relying only on the project’s cash flows for repayment. Municipal bonds are classified as PABs under section 141 of the IRS Code if:

- more than 10% of the bond proceeds are used to support private business activities; and
- more than 10% of the bond debt service is secured by payments from private business.

A **public–private partnership (PPP, 3P, or P3)** is a **cooperative** arrangement between two or more **public** and **private sectors**, typically of a long-term nature. In other words, it involves government(s) and business(es) that work together to complete a project and/or to provide services to the population. Public–private partnerships have been implemented in **multiple countries**, are primarily used for **infrastructure** projects, such as the building and equipping of schools, hospitals, transport systems, and water and sewerage systems.

Wrapped Bonds

- A key element of the muni bond market until recently was that a large proportion of the bonds, including PABs, were ‘wrapped’, or guaranteed by ‘monoline’ insurance companies. These insurers are called monolines because they specialize in bond insurance (*i.e.* they have only one line of business).
- With monoline-insurance cover, bondholders needed to pay little attention to the background or risks of the borrower or (if relevant) the project itself—at least theoretically—and could rely on the credit rating of the insurance company itself. This deals with the problem of private investors not having the capacity to assess the risks on individual bond issues. Before 2007 around half of all munis were monoline-insured.

- However, the monoline insurers also became heavily involved in insuring ‘sub-prime’ mortgage bonds in the U.S., and incurred such heavy losses on this after 2008 that most of them effectively went out of business. As of 2012 only one monoline insurer was covering new business in the muni market. As a result, only \$13 billion of bonds were insured in that year, and the market remains skeptical about the value of such insurance. To a certain extent, *e.g.* in major project financings issuing PABs, the gap caused by the disappearance of the monolines is being filled by commercial-bank guarantees (but primarily from European and Japanese banks rather than U.S. banks).

Other sources of private-sector debt

Non-bank lenders (primarily life-insurance companies or pension funds) are beginning to become a significant source of debt in particular project-finance markets, especially Australia, Britain, Canada, France, and the U.S. Life-insurance companies are also well-established as lenders in the Korean PPP market. The key difference between lending directly, rather than by purchasing bonds, is that the lenders can exercise control and supervision of a project in the same way as a bank.

Project-finance debt funds, which enable smaller pension funds to invest directly but leaving the detailed monitoring and control in the hands of a fund manager experienced in project finance, are also beginning to develop.

other sources of private-sector debt

1. Mezzanine Debt:

Subordinated debt is debt whose repayment ranks after repayments to bank lenders or bondholders (i.e. ‘senior lenders’, whose finance is referred to as ‘senior debt), but before payments of profits to investors, and if the project goes into default and is liquidated, subordinated debt will only be paid off once the senior lenders have been fully repaid. It is usually provided at a fixed rate of interest higher than the cost of senior debt.

Mezzanine financing is a hybrid of debt and equity financing that gives the lender the right to convert to an equity interest in the company in case of [default](#), generally, other senior lenders are paid.

other sources of private-sector debt

2. Lease Finance:

- Lease finance is one of the important sources of medium- and long-term financing where the owner of an asset gives another person, the right to use that asset against periodical payments. The owner of the asset is known as lessor and the user is called lessee. The periodical payment made by the lessee to the lessor is known as lease rental. It has 2 types Finance lease and operating lease.
- Both of these types of finance are expensive compared to direct loans, and neither of them are normally relevant to a project-finance situation.

Comparison between finance lease and operating lease

Aspects of Difference	Operating Lease	Finance (Capital) Lease
Definition	A lease in which all risks and rewards related to asset ownership remain with the lessor for the leased asset is called an operating lease. In this type of lease, the asset is returned by the lessee after using it for the agreed-upon lease term.	In a finance lease (also known as a capital lease), the risks and rewards related to ownership of the asset being leased are transferred to the lessee.
Ownership	The ownership of the asset remains with the lessor for the entire lease period.	The ownership transfer option at the end of the lease period is available to the lessee.
Accounting Effect	An operating lease is generally treated like renting. That means the lease payments are treated as operating expenses and the asset does not show on the balance sheet .	A finance lease is generally treated like loan. Here, asset ownership is considered by the lessee, so the asset appears on the balance sheet.

Comparison between finance lease and operating lease

PURCHASE OPTION	In an operating lease, the lessee does not have an option to buy the asset during the lease period.	A financial lease allows the lessee to have a purchase option at less than the fair market value of the asset.
LEASE TERM	The lease term extends to less than 75% of the projected useful life of the leased asset.	The lease term is generally the substantial economic life of the asset leased.
EXPENSES BORNE	The lessee pays only the monthly lease payment in an operating lease.	In a financial lease, the lessee bears the cost of insurance, maintenance, and taxes.
TAX BENEFIT	Since an operating lease is as good as renting, the lease payment is considered an expense. No depreciation can be claimed.	The lessee can claim both interest and depreciation , as a financial lease is treated as a loan.
RUNNING COST	In an operating lease, no running or administration costs are borne by the lessee, including registration, repairs etc., since this lease gives only the right to use the asset.	In a financial lease, running costs and administration expenses are higher and are born by the lessee.
EXAMPLE	Projectors, Computers, Laptops, Coffee Dispensers, etc.	Plant and Machinery, Land, Office Building, etc.

other sources of private-sector debt

3. Vendor Finance:

In some cases, finance may be offered by a seller of equipment, an Construction Contractor, or a supplier of other services to the project (a vendor in this context). An equipment supplier, for example, may have a better understanding of the technical risks of the project, or of the industry concerned, than a commercial Lender, and therefore be willing to take risks unacceptable to the financial markets. Vendor finance may thus enable a supplier to increase sales and open up new markets. Vendor finance may take the form of a loan (i.e. selling the equipment on credit) or a lease of equipment.

Web site for project finance report for KSA:

<https://www.iflr.com/article/b1lp1tjgmkgxf7/2018-project-finance-report-saudi-arabia>

Resources:

Principles of Project Finance

By:E.R. Yescombe

Second edition

This lecture is taken from chapter 4

Foundations of Financial Risk.

An Overview of Financial Risk and Risk-Based Regulation.

Richard Apostolik

Christopher Donohue

This lecture is taken from Chapter 6