NOVA SCHOOL OF BUSINESS & ECONOMICS

Applied Corporate Finance

Project Finance

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Plan Of Attack

- Definition of Project Finance
  - Capital Structure.
  - Key Elements.
- Overview of Project Finance Market
- Costs and Benefits of Project Finance.
- Specific Problems Being Addressed By Project Finance
  - Incentives.
  - Monitoring.
  - Political and Sovereign Risks

What is Project Finance?

Project Finance: Definitions

1. "Project Finance involves the creation of a legally independent project company financed with nonrecourse debt (and equity from one or more corporate entities known as sponsoring firms) for the purpose of financing investment in a single-purpose capital asset, usually with a limited life."
   – Esty and Sesia (2011)

2. "the raising of finance on a Limited Recourse basis, for the purposes of developing a large capital-intensive infrastructure project, where the borrower is a special purpose vehicle and repayment of the financing by the borrower will be dependent on the internally generated cashflows of the project"
   – Gardner and Wright (2011)

Project Finance: Overview (1)

Project finance generally involves most of the following:

- A project is set up as a separate company.
- A project's sponsor(s) hold most of the equity.
- The company enters into contracts with suppliers and customers.
- The company often uses a lot of debt, with limited or no recourse to the sponsor company
  - a large part of the debt is often bank debt.
  - Extent of recourse may change over the life of the project.
- The sponsor may guarantee certain aspects of performance.
- The sponsor is not only an equity-holder, but can also be a supplier to the project.
- The project typically has a finite life.

Project Finance: Overview (2)

- Historically,
  - Project finance has been a financing vehicle for the public sector.
- Recently,
  - Three trends have spurred the use of project finance around the world.
    - Privatization
    - deregulation
    - globalization
  - Private firms began to finance infrastructure development with project finance.

Project Finance: Overview (3)

- Project-financed investments differ from corporate-financed investments.
  - The assets are financed as stand-alone entities rather than as part of a corporate balance sheet.

- Although creditors may have partial recourse for a period of time or for a fraction of the total loan amount, project debt is usually non-recourse to sponsoring organizations.
  - When the lender or investor looks mainly to the revenue projections for the repayment of its loan.
  - Collateral in this type of financing are the assets of the project, which means project sponsors are not held liable for the payments on the loan if the project doesn't generate enough profit.

Project Finance: Overview (4)

- Capital Structure:
  - Highly levered → Between 50% and 90%.
    - Median of 75% Debt/Capital
  - Mostly bank debt → Between 80% and 95%.
    - Over 80% each of last 10 years
- Costs:
  - High Leverage → Greater expected distress costs.
  - Bank Debt → Tighter covenants, stricter oversight, and shorter loan maturities than public bonds.
  - High fixed costs, contracting costs.
- Bottom Line: Costs seem high.
  - There should be countervailing benefits that justify the use of high leverage and bank finance. We will discuss these in a few slides.

Some Famous Examples

- 1299: The English Crown negotiated a loan from the Frescobaldi to develop the Devon silver mines.

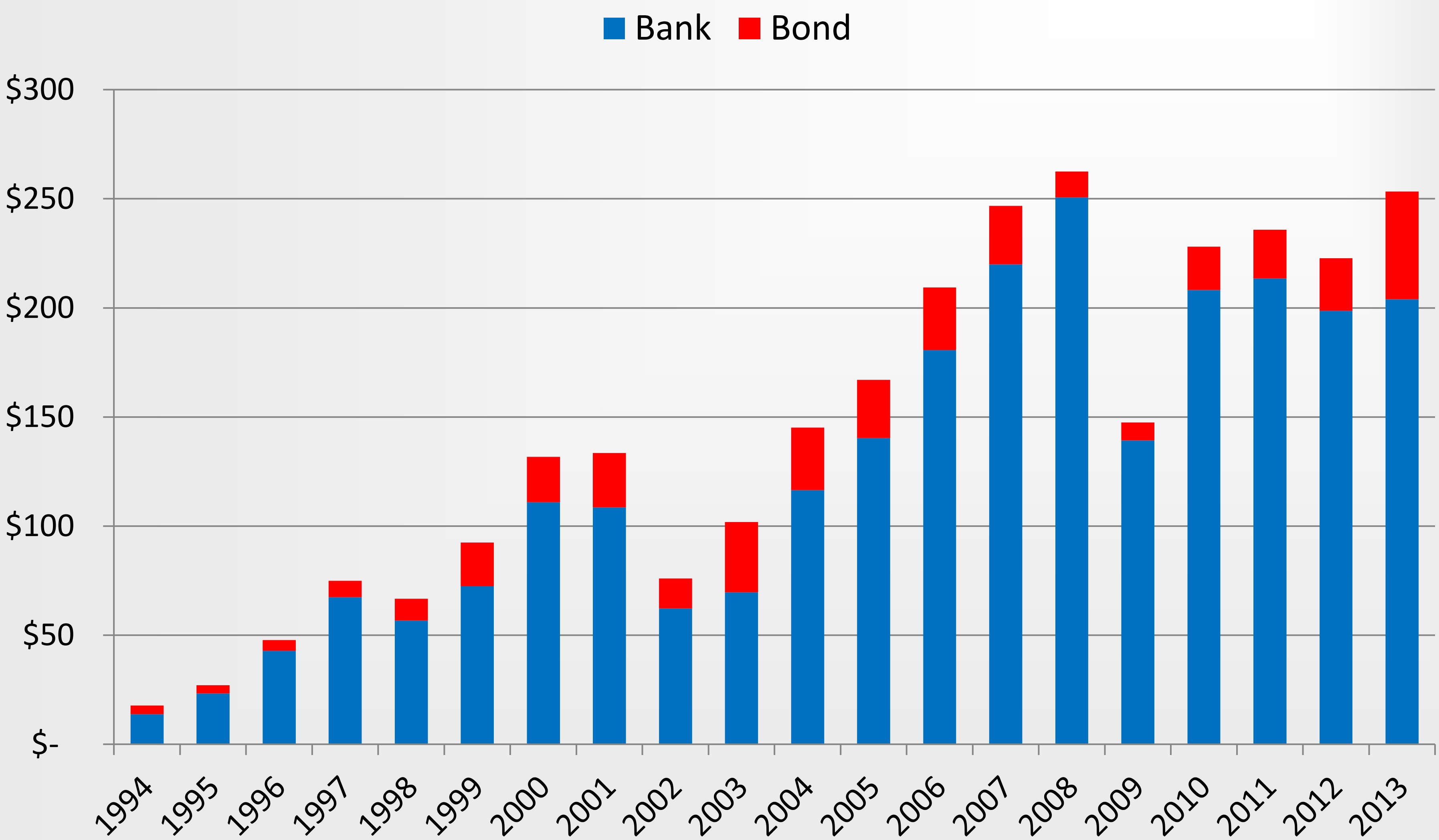
- 1969: The Trans Alaska Pipeline System – joint venture between eight of the world's largest oil companies.

- 1990s: The Channel Tunnel ("Chunnel") connecting France and the UK. Five banks and five construction companies.

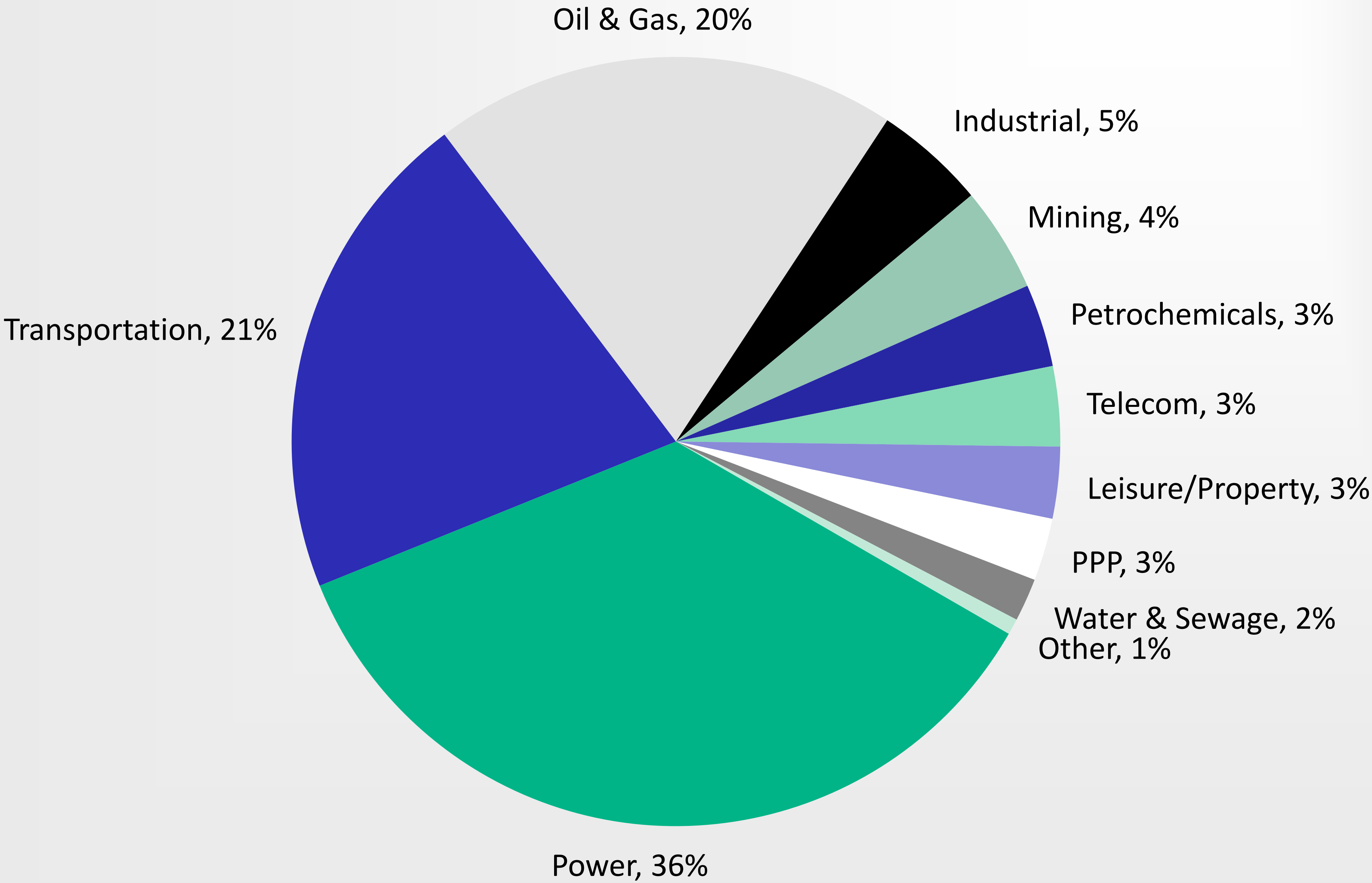
- 1988: EuroDisney – joint venture between Disney and the French government.

The Market for Project Finance

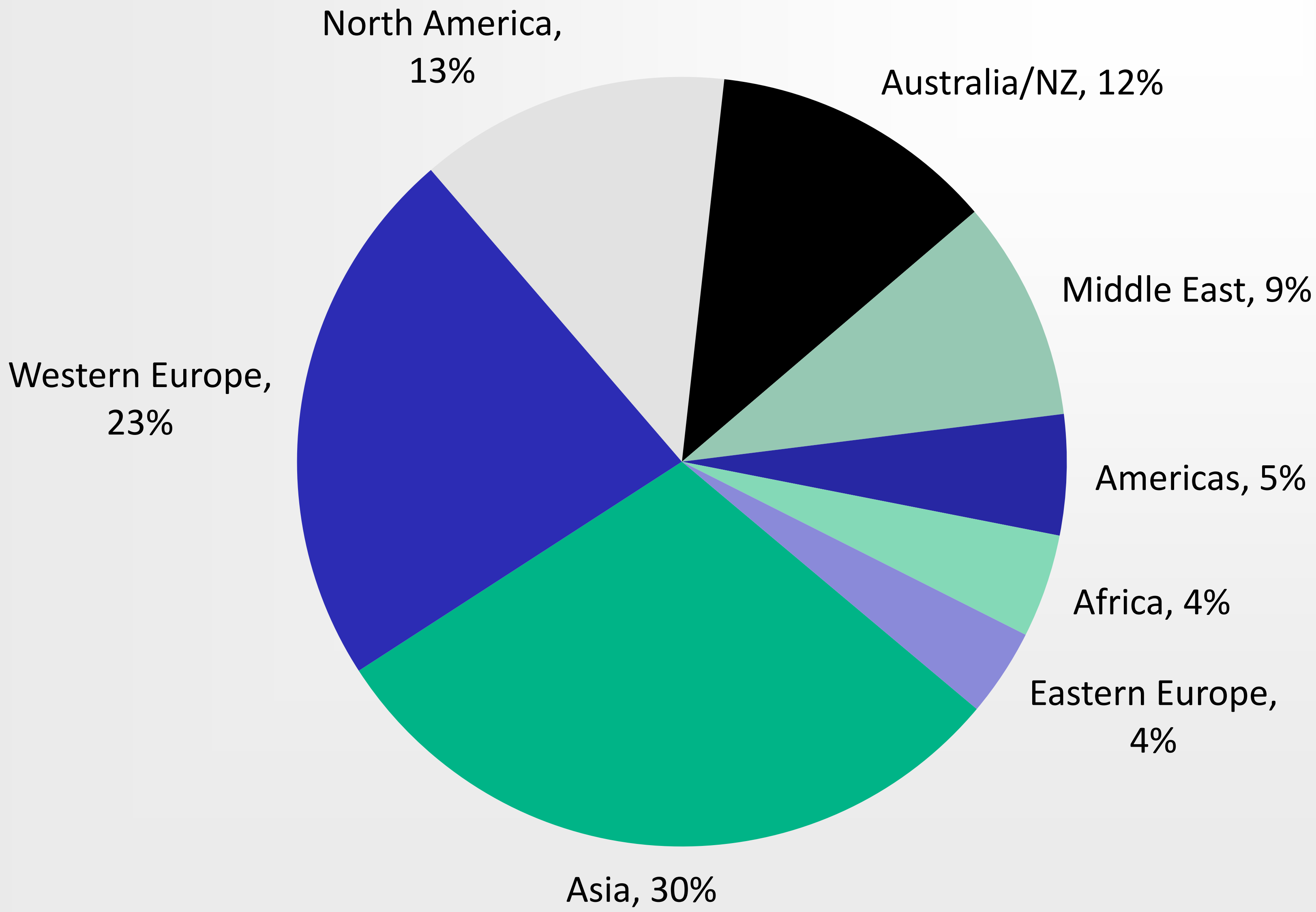
Project Finance Debt Financing ($B)



Lending by Sector: 2009-2013



Lending by Region: 2009 to 2013



Why Project Finance?

Stakeholder Motivations: Sponsors

- Limited Recourse:
  - Corporate loans give lenders rights to the firm’s assets.
  - In PF, loans give recourse only to the project’s assets.
- High Leverage:
  - Lower equity requirement (up to 90% debt-financed)
  - Boost equity returns
  - Interest tax shield reduces project WACC
- Not Limited by Balance Sheet:
  - Debt is booked off-balance-sheet.
  - Based on projects debt-servicing ability.
- Diversification Benefits:
  - Wider geographical footprint
  - Potentially add stability to revenues under long-term public-private partnership.

See Gardner & White (2011)

Stakeholder Motivations: Procuring Authority

- Fiscal Optimisation:
  - PF also alleviates government budget constraints.
  - Privately fund what would have needed be government funded.

- Efficiency:
  - The private sector may be able to run the assets better because it can create better incentives for managers.
    - equity ownership
    - tighter contracting
  - Private sector already has the specialized skills.

Stakeholder Motivations: Lenders

- As in all lending cases, an opportunity to get a return appropriate to the risk exposure
- Diversification of their banking book exposures.
- Lenders also get other contracts related to the project:
  - Bookkeeping
  - Hedging
  - General advisory

- Moody's Default and Recovery Statistics (1983-2008):
  - 8.1% Default Rate (213/2,639 in study)
  - 76.4% Recovery
    - higher than Moody's Corp Default Average of 65.5%

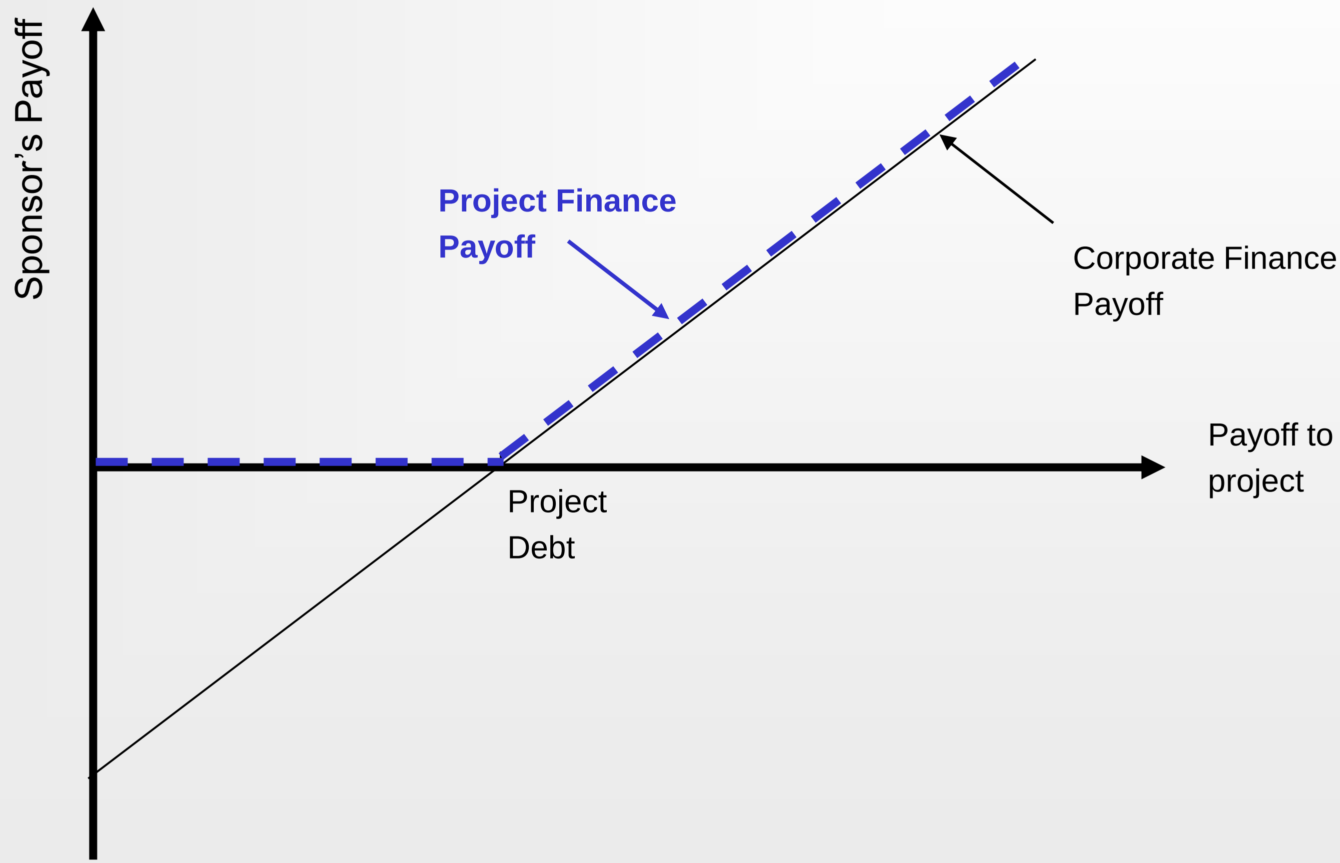
Project Finance: The General Case

- How Does Project Finance Increase Value Outside A MM World?
  - Recall Key Finance Idea:
    - Firms choose the financial structure that minimizes the sum of these capital market frictions.

- Need to compare conventional financing versus project finance along these dimensions:
  - Transaction Costs.
  - Taxes.
  - Costs of Financial Distress.
  - Agency Costs.
  - Asymmetric Information.

The Option to Walk Away

- Payoff structure to project finance deal versus a traditional corporate finance deal:



Cash Flow Volatility

- Separation may reduce cash flow volatility for the company.
  - Assuming that the project's cash flows are more volatile than the cash flows from the company itself.

- Avoids contamination: Together, the project could bankrupt the company or seriously affect the rest of the business

- But:
  - is volatility really important?
  - Can't investors diversify this volatility away?
  - Are there (within firm) diversification benefits?

- Project finance may help avoid contamination and increased volatility, it also prevents the sponsor from gaining the benefit of diversification.

Asset-Based Financial Engineering

- Froot and Stein (1998): How do firms manage risk in the absence of explicit hedging contracts?

  - Firms are exposed to a great number of risks, some of which can be hedged with standard risk management tools.
  - Not all risks can be “frictionlessly” hedged.
  - In the absence of these contracts (or if these contracts are costly), firms may engage in operational risk management.

Transactions Costs

- Transactions costs are typically higher for project finance compared to corporate finance.
- Setting up a project and doing the contracting can involve substantial transactions costs.
  - Often as many as 15 parties involved with up to 1,000 contracts!
- When Conoco and Petróleos de Venezuela began a $2.4 Bn Petrozuata oil field development, they spent $15m in legal and advisory fees.
  - These transactions costs may be mainly fixed and quite high.
- Not only the cost is important, also the time spent putting the deal together.
  - Minimum 4 months to do a deal,
  - Much longer if you deal with one of the multilateral lending agencies.

Agency Benefits

- Traditional monitoring mechanisms such as takeover markets, staged financing, product markets absent.

- Free cash flow problem is reduced through high debt service.
- Tight contracting reduces discretion.
- Equity ownership is highly concentrated giving powerful incentives.
- "Cash Flow Waterfall":
  - Pre-existing mechanism for allocation of cash flows.
  - Covers capex, maintenance expenditures, debt service, reserve accounts, shareholder distribution.
- Senior bank debt disgorges cash in early years and monitoring/covenants also act as "trip wires."

Monitoring Benefits

- When the project is a separate entity, it is often easier to monitor than when the assets are mixed with the other assets of the company.

- What makes bank financing special?
  - Expertise in monitoring.
  - Strong incentives to monitor.
    - This is less the case when the debt is syndicated.
  - Short-term, so allows them to quickly pull the plug if necessary.

- Presence of bank financing monitoring makes it easier to attract other funds:
  - Bondholders or other Strategic Partners.

Sovereign Risk

Expropriation Risk

- Involving the government can *potentially* mitigate expropriation risk.
- If you make the government an equity investor, it may reduce political risks:
  - Lower chance of nationalization/expropriation.
  - No problems with non-convertibility of currency.
  - Improves incentives for government to do its share (and maybe more) of the work:
    - Build roads/infrastructure.
- Doing the project with a local partner will also reduce chances of government expropriation.
- Involvement of an international organization, such as IFC (more in a few slides), may provide more bargaining power against expropriation.

International Finance Corporation (1)

- The International Finance Corporation (IFC)
  - Member of the World Bank Group
  - Promotes private sector investment in developing countries as a way to reduce poverty and enhance economic growth.
    - "Promoting sustainable private sector investment in developing countries, helping to reduce poverty and improve people's lives."
  - Provides funding, assists in negotiations, provides insurance.
- To be eligible for IFC funding, a project must meet the following basic criteria:
  - Privately owned.
  - Commercially viable (positive NPV).
  - Environmentally sound.
  - Provide development benefits to the local economy.

International Finance Corporation (2)

- IFC conducts formal cost-benefit analysis for various stakeholders:
  - Employees and Other Labour
  - Customers
  - Suppliers
  - Competitors
  - Neighbors
  - Local Government
  - The rest of society
- Priority sectors - sectors with high development impact:
  - Financial markets
  - Infrastructure
  - Health and Education
  - Information technology
  - SMEs

International Finance Corporation (3)

FY20 Long-Term Commitments

Dollar amounts in millions, for IFC's own account as of June 30, 2020

Total	$11,135	100.00%

By Industry

Financial Markets	$ 5,801	52.10%
Infrastructure	$ 1,415	12.71%
Agribusiness & Forestry	$ 1,054	9.46%
Funds	$ 816	7.33%
Health & Education	$ 667	5.99%
Manufacturing	$ 664	5.96%
Tourism, Retail & Property	$ 635	5.70%
Natural Resources[1]	$ 62	0.56%
Telecommunications & Information Technology	$ 21	0.19%

By Region[2]

Latin America and the Caribbean	$ 3,165	28.42%
East Asia and the Pacific	$ 2,490	22.36%
Sub-Saharan Africa	$ 2,188	19.65%
Europe and Central Asia	$ 1,345	12.08%
South Asia	$ 1,314	11.80%
Middle East and North Africa	$ 617	5.54%
Global	$ 17	0.15%

By Product

Loans[3]	$ 9,509	85.40%
Equity[4]	$ 992	8.91%
Guarantees	$ 550	4.94%
Risk-management products	$ 85	0.76%

Data from IFC Annual Report (2020)

International Finance Corporation (4)

FY20 Portfolio Exposure[5]

Dollar amounts in millions, for IFC's own account as of June 30, 2020

Total	$58,650	100%

By Industry

Financial Markets	$22,824	39%
Infrastructure	$10,689	18%
Funds	$ 5,069	9%
Manufacturing	$ 4,215	7%
Agribusiness & Forestry	$ 3,969	7%
Tourism, Retail & Property	$ 2,950	5%
Trade Finance	$ 2,866	5%
Health & Education	$ 2,785	5%
Telecommunications & Information Technology	$ 1,653	3%
Natural Resources[1]	$ 1,631	3%

By Region[6]

Latin America and the Caribbean	$12,085	21%
East Asia and the Pacific	$ 9,932	17%
South Asia	$ 9,876	17%
Sub-Saharan Africa	$ 9,736	17%
Europe and Central Asia	$ 7,769	13%
Global	$ 5,401	9%
Middle East and North Africa	$ 3,852	7%

Data from IFC Annual Report (2020)

European Investment Bank (1)

Signatures per country or region (in EUR Million)	2019	% of total	2018	% of total
Italy	9 696	15%	7 424	13%
Spain	8 094	13%	7 430	13%
France	6 929	11%	6 082	11%
Germany	5 339	9%	4 644	8%
Poland	4 394	7%	3 890	7%
Netherlands	2 477	4%	1 947	3%
Greece	2 031	3%	1 566	3%
Sweden	1 871	3%	1 372	2%
Belgium	1 730	3%	1 541	3%
Finland	1 713	3%	1 785	3%
Austria	1 554	2%	1 196	2%
Portugal	1 379	2%	1 522	3%
Czech Republic	1 308	2%	443	1%
Ireland	960	2%	807	2%
Denmark	839	1%	432	1%
Romania	766	1%	981	2%
EFTA	113	0%	190	0%
Other EU Member States	4 270*	7%	4 770	9%
Candidate and potential candidate countries	649	1%	1 552	3%
Rest of world	7 138	11%	6 066	11%
	63 250		**55 640**	

* Bulgaria 210m, Croatia 466m, Cyprus 230m, Estonia 236m, Hungary 702m, Latvia 246m, Lithuania 47m, Luxembourg 215m, Malta 78m, Slovakia 204m, Slovenia 184m, United Kingdom 456m, Multi-country 996m.

Data from EIB Financial Report (2020)

European Investment Bank (2)

Data from EIB Financial Report (2020)

- Similar to IFC in terms of looking beyond financial returns
- Currently there is a big agenda on environmental financing

European Investment Bank (3)

- The EIB's new strategy for climate action and environmental sustainability includes three key elements:
  - The EIB Group will aim to support EUR 1tn of investments in climate action and environmental sustainability in the critical decade from to 2030;
  - The Bank will gradually increase the share of its financing dedicated to climate action and environmental sustainability to reach 50% of its operations in 2025 and from then on;
  - The EIB Group will align all its financing activities with the principles and goals of the Paris Agreement by the end of 2020. In the near future this will be complemented by measures to ensure EIB financing contributes to a just transition for those regions or countries more affected so that no one is left behind.

Source: EIB Financial Report (2020)

European Bank for Reconstruction and Development (EBRD)

European Bank for Reconstruction and Development ANNUAL REVIEW 2019

The EBRD in numbers 2019

452 Number of projects	**10.1** € billion Annual Business Investment	**7.2** € billion Gross annual disbursements
74 per cent Private sector percentage of ABI	**46.1** € billion Portfolio of operations	**72** Number of operations supporting women, young people or people in less-developed regions

European Bank for Reconstruction and Development (cont'd)

European Bank for Reconstruction and Development | ANNUAL REVIEW 2019

Green Economy Transition

The EBRD plays a strong role in international efforts to increase energy and resource efficiency and build resilience to the effects of climate change. Under our Green Economy Transition (GET) approach, we invest in projects that help economies achieve the emission reductions pledged at the 2015 United Nations Climate Conference in Paris. We also support operations that reduce pollution levels and create a cleaner, safer environment for people living in our regions.

4.6
€ billion
Total investment in the Green Economy Transition

46
GET activities as a percentage of ABI

3.8
€ billion
Finance for climate change mitigation activities

495
€ million
Finance for adaptation to the effects of climate change

1.1
€ billion
Finance for other environmental activities*

4.8
million tonnes
Estimated annual reduction expected in CO_2 emissions

Project Finance: Closing Comments

- Some potential benefits:
  - Sheds debt-service obligations directly from the firm
  - Takes the debt off-balance sheet
  - Incentives for strong external monitoring
  - Tax advantages (higher leverage increases interest tax shield)
  - Spurs relationships in new markets
  - Can be used as a vehicle to spur development in emerging markets

- Some drawbacks:
  - Can be expensive and time consuming
    - Large transaction costs
    - Contracting can be very complicated