

PROJECT FINANCE: PRINCIPLES AND APPLICATION TO EMERGING MARKETS

B TERM SPRING 2023

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TEACHING ASSISTANTS

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COURSE SHORT DESCRIPTION

This course will provide students with a strong practical and theoretical framework to be able to analyze complex infrastructure investment projects from first principles and will cover both the structuring aspects of this financial discipline (commercial and legal frameworks, key risk and mitigants, financial modelling) as well as real-world infrastructure project finance case studies and industry sector guest speakers.

Overall, the course provides a practical and quantitative approach to understanding project finance transactions; focuses on energy and infrastructure transactions; integrates principles of corporate finance with an understanding of specific technologies, industrial organization, regulatory framework and country-specific policies; examines foreign exchange issues, taxation, risk evaluation and mitigation and key contractual structures; explores the fundamentals of International Project Finance; and complements and adds to the current fundamentals of Project Finance course.

This course is relevant to students contemplating careers in financing infrastructure projects, considering dual engineering/finance degrees, or working for developers/sponsors of international infrastructure projects, private equity investors and infrastructure funds or international financial organizations such as Multilateral development institutions (World Bank, Asia Development Bank, Inter-American Development Bank, Asia Development Bank, Asia Infrastructure Investment Bank).

COURSE DESCRIPTION

The course will focus on deepening student's academic knowledge and understanding of the financing strategies, structures and risk/return allocations for international infrastructure projects with a focus on energy (power, utilities and oil & gas) and transport (toll roads, ports, rail etc.) infrastructure investments. The course will specifically address

and cover the dynamics of “South-South” infrastructure investment, financing and cooperation across the BRIC (Brazil, Russia, India, China and South Africa) countries. It will also analyze China’s Belt and Road Initiative infrastructure investment initiative and the emergence and importance of new Global financial institutions such as the BRICS Bank (New Development Bank) and the Asia Infrastructure Investment Bank, the new “World Bank for Asia” created by China. The course will also cover current US/Asia energy trends and the emergence of the US as a major energy supplier and exporter.

The course will also cover financial modelling and analyze UN SDG’s, impact investment, green bonds, environmental, social and governance (ESG) risks and the current approach of financial institutions to assess and rank ESG risks and impact of projects and related mitigation and monitoring measures required to ensure projects are developed in a sustainable manner.

COURSE LEARNING OBJECTIVES

Upon completion of the course, students will be able to:

- Identify and explain key aspects of financing for infrastructure investment projects, potential sources of financing (export credit agencies, multilateral agencies, bonds, local capital markets, private equity, infrastructure funds) as well as currency and political risks
- Apply practical tools and skillsets to analyze risks and business opportunities associated with infrastructure projects in key industry sectors, including but not limited to, power/renewable energy, oil and gas, mining and metals and infrastructure.
- Analyze and interpret how debt and equity are balanced within project financing capital structures, apply financial modelling to analyze project pre-tax levered and unlevered IRR and develop an appreciation in breadth and depth of the core financial documents and commercial contracts employed in the sector.

ASSIGNMENTS

Designate the type for each assignment (A - group, B - group/individual, or C - individual).

In order to avoid ambiguity that may lead to unintentional violations of the Honor Code, the description types for assignments have been standardized. They are specified in the table below.

<i>Type</i>	<i>Designation</i>	<i>Discussion of concepts</i>	<i>Preparation of submission</i>	<i>Grade</i>
A	group / group	Permitted with designated group*	By the group	Same grade for each member of the group
B	group / individual	Permitted	Individually (No sharing of any portion of the submission)	Individual
C	individual / individual	None of any kind	Individually	Individual

D	(An optional category to be defined in detail by the individual faculty member)
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* The designated group can be either an assigned study group or a self-selected one.

REQUIRED COURSE MATERIALS

Clifford, Paul. *Project Finance: Applications and Insights to Emerging Markets* (Wiley Finance, November 2020).

https://www.amazon.com/Project-Finance-Applications-Insights-Infrastructure-ebook-dp-B08MVHQLPM/dp/B08MVHQLPM/ref=mt_other?_encoding=UTF8&me=&qid=1635262445. Other class handouts will be provided along with additional recommended reading material.

CLASSROOM NORMS AND EXPECTATIONS

Class attendance is important as the course learnings will build progressively over the semester and provide the foundation for the group case study project. Class participation is encouraged and expected in analyzing the project case studies.

INCLUSION, ACCOMMODATIONS, AND SUPPORT FOR STUDENTS

At Columbia Business School, we believe that diversity strengthens any community or business model and brings it greater success. Columbia Business School is committed to providing all students with the equal opportunity to thrive in the classroom by providing a learning, living, and working environment free from discrimination, harassment, and bias on the basis of gender, sexual orientation, race, ethnicity, socioeconomic status, or ability.

Students seeking accommodation in the classroom may obtain information on the services offered by Columbia University's Office of Disability Services online at www.health.columbia.edu/docs/services/ods/index.html or by contacting (212) 854-2388.

METHOD OF EVALUATION

Participation	15%
Individual Assignments	40%
Group Case Study Paper	45%

Evaluation will be 15% from class participation, 40% from individual case study assignment/answers, and 45% from a group case study paper.

At the start of the course students will be grouped into teams to prepare a group case study paper to be submitted before the last class. Students will be required to analyze specific strategic, commercial and stakeholder issues/questions related to the project case study.