

**NEW YORK UNIVERSITY
NYU STERN SCHOOL OF BUSINESS**

Infrastructure Finance Initiative – 2017-2021

Activity Overview

The work program of the Infrastructure Finance Initiative can be described as policy-relevant academic research and education in infrastructure finance, leading to three areas of activity: (a) Generation and dissemination of insights in the form of targeted publications in applied journals and in the print media, (b) Convening conferences and workshops on infrastructure finance, and participation in such activities convened elsewhere, and (c) Creation of a serious teaching capability at Stern in the form of course development and case-writing on project and infrastructure finance. The objective is help Stern and NYU be identified in the academic, policymaking and business communities as a useful and creative resource on infrastructure finance.

Applied Research and Publication

A series of projects were discussed with interested members of the faculty, and reflected in several workshops and symposia following the GIAS commitment of financial support. These began with a “framework” *White Paper* authored by the Working Group on Infrastructure Finance, consisting of 12 members of the faculty, which outlined the key issues and areas of potential financial support on the part of a new Infrastructure Finance Initiative.

The Infrastructure Finance Challenge, emanated from the White Paper as a monograph published in London by OpenBook Publishers in late 2016. The OpenBook contract allows reuse of material, both individually by authors and collectively, in future publication. Researchers: Twelve members of the Stern faculty. Research assistance: Lebogang Mahlare and Patrizio Cox, NYU Tandon School of Engineering. The monograph was edited by Ingo Walter. By September 2020 the monograph had sold about 3,000 copies.¹

Following the publication of the framework monograph, eight key areas for applied research were identified by the project steering committee in terms of their likely impact and best value with respect to resources committed:

1. *Returns and Risks Related to Infrastructure Investments*. This project led to a working paper analyzing risk characteristics and performance of private equity funds that invest in infrastructure and other alternative classes, including real estate and energy categories. The Infrastructure Finance Initiative purchased the dataset on which this project was based. The initial paper analyzes the sources

¹ Available at <https://library.oapen.org/bitstream/id/70809810-9b7c-432f-a0ed-82d7c4e4df33/633850.pdf>

of risk for private equity funds across various categories, developing a novel risk assessment and valuation technique for the purpose of return attribution and skill persistence. The paper was presented at major economics and finance conferences, including the UNC Real Estate Research Symposium and the American Finance Association annual meetings in January 2019. In 2021 the paper was accepted for publication in the *The Journal of Finance*. A second paper focusing on the New York MTA, “Take the Q Train: Value Capture of Public Infrastructure Projects” (with Constantine Kontrokosta) is forthcoming in the *Journal of Urban Economics*. Researchers: Arpit Gupta & Stijn Van Nieuwerburgh.

2. *The Role of Infrastructure Investments in US Public Pension Funds*. This paper is focused on an assessment of the U.S. public pension system using the 25 largest plans (representing \$2.4 trillion in assets, 55% of the US pension fund total) as the dataset. Comprehensive analysis (thousands of data points) to evaluate numerous factors, including plan assets, funded status, and pressure points (discount rates, demographics, etc.). Articulation of the theoretical and reported rationale for investing in infrastructure within plan portfolios and an evaluation (based on index data) of whether objectives are achieved. There is a comprehensive analysis of the actual infrastructure portfolios of each plan. Policy, portfolio management, and structural questions that arise from this analysis. The objective was to test investment performance hypotheses for this asset class in a long-term pension investment context. Advisory services and data purchases were sourced by the Infrastructure Finance Initiative. Research assistance was provided by Patrizio Cox and Lebogang Mahlare of the NYU Tandon School of Engineering. The monograph was published in August 2019 under the title *Bridging the GAPS: Public Pension Funds and Infrastructure Finance*.² Researchers: Clive Lipshitz and Ingo Walter.

3. *Public Pension Reform and the 49th Parallel: Lessons from Canada for the United States*. Public employee pension systems around the world show remarkable diversity in design and execution. Among these, the U.S. defined benefit public pension system has drawn increased attention because of questions about the long-term sustainability of many of the underlying pension funds, as well as concerns of equity between pension plan members, retirees, taxpayers, bondholders, and users of public services.

The connection to infrastructure finance? Resources that need to be spent on public infrastructure may be diverted to cover contractual pension obligations so there are maintenance backlogs. With Covid-19, this is becoming more and more difficult to hide. Financing of public infra is also becoming more difficult because of growing recognition of the credit risk of borrowers (states and municipalities) due to public pension commitments. Case in point: Municipalities and states will

² https://www.amazon.com/Bridging-Gaps-Pension-Infrastructure-Finance/dp/107744236X/ref=sr_1_1?dchild=1&keywords=lipshitz+walter&qid=1596218122&sr=8-1

be under increased pressure to right-size their balance sheets and sell off non-core assets or assets that can be more effectively managed by private investors. In many cases, these assets have become a financial albatross for state and municipal governments.

The Covid-19 pandemic introduced new fissures in state and local government finances, heightening the need to bolster long-term public pension fund robustness. As an alternative model, the Canadian public pension system is widely respected. This was not foreordained. We trace difficult decisions undertaken in Canada in the 1980s and 1990s along with key descriptive features of the Canada model. Using a primary dataset, we benchmark the 25 largest U.S. plans against their ten largest Canadian peers, exploring key issues in a paired analysis.

Calibrating the two approaches, the paper extracts key lessons from the Canadian experience for the U.S. and end with applicable policy recommendations. Canada's pension fund experience with real investments in infrastructure greatly exceeds that in the U.S. and suggests ways of opening this avenue of long-term infrastructure financing. Published in October 2020.³ Research assistance: Fernando Falbo, Fulbright scholar and graduate of the NYUS FAS Department of Economic M.A. program. Researchers: *Clive Lipshitz and Ingo Walter.*

5. *Sense and Nonsense in ESG Scoring.* Concerns about the future of the natural environment, prevailing social conditions, and governance of private and public institutions inspire today's growing ESG movement. None of these concerns are new. But they have gained much traction from the techno-communication revolution alongside a growing populist focus on "stakeholder" claims.

This paper proposes a coherent heuristic for sorting out the key elements of a social control platform that captures the key elements of the ESG movement from the perspective of modern business firms and investment funds that mostly operate under the classic conditions of market discipline. The diagnostic radiates from regulatory constraints anchored in legislation – and that bear most directly on the enterprise - outward to much less tractable areas of business conduct subject to claims and values that may or may not be generally accepted.

The ESG ratings industry attempts to identify, calibrate and condense corporate and investor conduct across a wide spectrum of behavior against the benchmarks of normative ESG values. The industrial economics of the large and growing ESG ratings industry is then discussed and compared to the credit rating industry with its long history and vastly simpler mandate – the probability of

³ *Financial Markets, Instruments and Institutions* at <https://onlinelibrary.wiley.com/doi/abs/10.1111/fmii.12133>

contractual debt service “on time and in full.” The paper concludes with an assessment of the future of ESG ratings and their bearing on capital investment and business practice. Research assistance: Fernando Falbo ⁴ Researcher: *Ingo Walter*.

6. *License to Drill: Causes and Consequences of Controversy in the Shale Oil and Gas Industry*. This project aims to explain the causes and consequences of social and political support and opposition - socio-political controversy - in the shale oil and gas industry in the United States. It examines two questions: (1) What factors explain controversy in the shale oil and gas industry across locations and across time? (2) How does controversy affect firm activities in the industry, including applications for permits, drilling of new wells and operations at existing wells? It addresses these questions by constructing a new dataset of county-level and state-level indicators of socio-political controversy across the United States. The Infrastructure Finance Initiative provided data and analytical assistance support beginning in late 2018 through 2020 for this project. Research Assistance: Michelle Namkoong. Researcher: *Sinziana Dorobantu*. *Ongoing*.

7. *Global Infrastructure: Potential, Perils, and a Framework for Distinction*. This paper evaluates the literature that claims poor countries have an infrastructure investment gap of roughly \$1 trillion per year and therefore possess widespread opportunities for productive spending on infrastructure. The evaluation introduces and employs a simple framework that concludes this claim is invalid. The framework compares a poor country’s social rate of return on infrastructure investment with: (a) the poor country’s return on private capital, and (b) the average rich country’s return on private capital.

The dual comparison reveals that additional investment in a poor country’s infrastructure is: (1) efficient only if the return on poor-country infrastructure exceeds the return on poor-country private capital; and (2) financeable through private rich-country savings only if the return on poor-country infrastructure exceeds the return on rich-country private capital. This dual-hurdle rate framework suggests a two-by-two classification that sorts countries into quadrants according to their potential for efficient investment in infrastructure. The paper then applies the classification to the only existing, comprehensive cross-country estimates of the social rate of return on infrastructure (electricity and paved roads).

The conventional wisdom is that there are ubiquitous opportunities for infrastructure investment that meet the two criteria. In fact, only 7 of 53 developing countries clear the dual-hurdle rate in both electricity and paved roads. Where it is efficient to invest, however, the potential for excess returns on

⁴ *Journal of Finance, Law and Accounting*.
<https://onlinelibrary.wiley.com/doi/abs/10.1111/fmii.12133>

infrastructure is quite large—five times larger, in fact, than the excess returns that existed, but have long since been arbitrated away, in emerging-market stocks when foreigners were first permitted to own shares. The framework thus implies a new definition of the infrastructure gap as the amount of investment required to close the difference between the return on infrastructure in poor countries and the return on private capital elsewhere. More importantly, the framework moves the discussion away from alarmism and exaggeration toward the clarity that economics can and should bring to any policy discussion.⁵ Researchers: *Peter Blair Henry and Camille Gardner.*

8. Take the Q Train: Value Capture of Public Infrastructure Projects. Transit infrastructure is a critical asset for economic activity yet costly to build in dense urban environments. We measure the benefit of the Second Avenue Subway extension in New York City by analyzing local real estate prices which capitalize the benefits of transit spillovers. We find 10% price increases, creating \$7 billion in new property value. Using cell phone ping data, we document substantial reductions in commuting time especially among subway users, offering a plausible mechanism for the price gains. The increase in prices reflects both higher rents and lower risk. Infrastructure improvements lower the riskiness of real estate investments. Only 30% of the private value created by the subway is captured through higher property tax revenue, and is insufficient to cover the cost of the subway. Targeted property tax increases may help governments capture more of the value created, and serve as a useful funding tool. Researchers: *Arpit Gupta, Stijn Van Nieuwerburgh and Constantine Kontokosta. August 2020.*⁶

9. Bribery, Graft and Corruption in the Global Infrastructure Sector. Infrastructure development is arguably one of the sectors of the economy that is highly subject to questionable payments – bribery, extortion, graft and other forms of corruption that lead to bad outcomes from the perspective of the public interest. Among the reasons are project size, lack of transparency in bidding and contract renegotiation, the key role of permitting and political constraints bearing on projects. By increasing construction and operating costs and creating project delays, questionable payments undermine the economics of infrastructure investments and the positive externalities they are presumed to generate. This project will examine the conceptual foundations of the questionable payments issue and, using available data from (inter alia) Transparency International, try to develop cost estimates and their impact. Researcher: *Ingo Walter. Ongoing.*

⁵ Henry, Peter Blair and Gardner, Camille (July 6, 2019). NYU Stern School of Business, Available at SSRN: <https://ssrn.com/abstract=3415942> or <http://dx.doi.org/10.2139/ssrn.3415942>

⁶ NBER Working Paper No. 26789. Issued in February 2020, Revised in August 2020. <https://www.nber.org/papers/w26789>. Second round “revise and resubmit” at the *Journal of Finance*.

Publications

Ingo Walter (ed.) *The Infrastructure Finance Challenge*. London: Openbook Publishers, 2016.

Clive Lipshitz and Ingo Walter, *Bridging the Gaps: Public Pension Funds and Infrastructure Finance*. New York, Amazon Press, 2019.

Ingo Walter, "Sense and Nonsense In ESG Ratings," *Journal of Law, Finance and Accounting*, September 2020.

Clive Lipshitz and Ingo Walter, "Seeking Sustainability in American Public Employee Pension Systems," *Journal of Portfolio Management*, October 2020.

Clive Lipshitz and Ingo Walter, "Public Pension Reform and the 49th Parallel: Lessons From Canada for the U.S." *Financial Institutions, Instruments and Markets*, November 2020.

Arpit Gupta, Constantine Kontrokosta and Stijn Van Nieuwerburgh, "Take the Q Train: Value Capture of Public Infrastructure Projects" forthcoming in the *Journal of Urban Economics*.

Arpit Gupta and Stijn Van Nieuwerburgh, "Valuing Private Equity Strip by Strip," Forthcoming in *The Journal of Finance*, 2021.

Kate Odziemkowska and Sinziana Dorobantu, "Contracting Beyond the Market," Forthcoming in *Organizational Science*, 2021.

Media – Op Eds & Opinion Pieces

Op-ed essays in the media. Specific op-ed contributions – in addition to coverage in news articles and editorials - include the following (listed chronologically):

Fossil fuel Divestment is Futile, in *Wall Street Journal*, 15 May 2018. Paul Tice.

[Public Pensions and Infrastructure: A Match Made in Heaven](#) - in *The Hill*, February 2019. Clive Lipshitz and Ingo Walter.

Climate: the Kids Are All Wrong - in *Wall Street Journal*, 12 March 2019. Paul Tice.

A Roadmap for Preventing U.S. Public Pension Funds From Becoming a Taxpayer burden - in *Pensions & Investments*, 15 August 2019. Clive Lipshitz and Ingo Walter.

Trump Hasn't Solved the Pipeline Crisis – in *Wall Street Journal*, 8 October 2019. Paul Tice.

Public Pensions and Public Infrastructure: How they can Sustain Each Other - in *Institutional Investing in Infrastructure*, December 2019. Clive Lipshitz and Ingo Walter.

A Lesson for America From the COVID-19 Crisis – Think Like an Insurer - in *Pensions & Investments*, May 2020. Clive Lipshitz and Ingo Walter.

The US Should Look to Canada to Reform its Public Pension System - in *The Hill*, July 2020. Clive Lipshitz and Ingo Walter.

If You Like Lockdowns, You'll Love the Carbon-Free Future - in *Wall Street Journal*, 20 August 2020. Paul Tice.

America's Public Pension Challenges Can Be Fixed. Canada Is Proof. Critical Mass is the Answer - in *Institutional Investor*, August 2020. Clive Lipshitz and Ingo Walter.

Perspectives: Seeking Sustainability in American Public Employee Pension Systems – in *Journal of Portfolio Management*, November 2020. Clive Lipshitz and Ingo Walter

Will Biden Choose Paris Over Bismarck and Pierre? In *Wall Street Journal*, 1 February 2021. Paul Tice.

Outreach

One of the mandates of the Infrastructure Finance Initiative was to promote sensible public policies in infrastructure development as well as the suppliers such as banks and pension funds. A number of conferences, symposia and media interviews were undertaken. Among them are the following:

Global 3P Conference. University of Limerick, Ireland, October 2017. Discussion and presentation on interface between global capital markets and the infrastructure sector, including ongoing mismatches between supply and demand – so-called “dry powder.” Ingo Walter.

NYU – Stern Infrastructure Finance Symposium – On April 25, 2018 NYU Stern's Center for Real Estate Finance Research and the Infrastructure Finance

Initiative co-hosted a joint conference entitled, “The Infrastructure & Real Estate Nexus: Three Case Studies.” The symposium featured a keynote interview with Steve Ross, Founder and Chairman of Related Companies and developer of the Hudson Yards project in Manhattan. It included panels on the Second Avenue Subway at the local level, the Dakota Access Pipeline project at the national level, and the Panama Canal Expansion at the global level. Ingo Walter.

Satellite-based Infrastructure. Presentation to students and faculty by Greg Wyler founder/chairman and former CEO of OneWeb, which is building a constellation of low-earth orbit (LEO) satellites to compete with or complement the rise of 5G technology. Fall 2019. Sinziana Dorobantu.

Advisory Board participation and discussion at the Cornell Program in Infrastructure Policy (CPIP) on 29 October 2018, Ithaca, NY. Ingo Walter.

Public Pension Funds and Infrastructure Investing, National Association of State Treasurers Annual Conference, Portland, Maine. June 2020. Clive Lipshitz.
An Introduction to Infrastructure and Its Benefits in an Institutional Portfolio. Pension Real Estate Association Spring Conference (US public pension fund chief investment officers), Los Angeles, California, March 2020. Clive Lipshitz.

Infrastructure Investments and the US Public Pension System, Stern School of Business, NYU Stern Faculty Symposium, 26 February 2020. Clive Lipshitz and Ingo Walter.

LABA Conference – Infrastructure and Energy Investments Landscape for the Next 10 Years, Columbia University, 21 February 2020. Ingo Walter.

Inframation US P3 Infrastructure Forum, New York. November 2019. Clive Lipshitz.

Fujian Provincial Department of Finance Delegation, New York. October 2019. Clive Lipshitz

Cornell Program on Infrastructure Policy, Symposium on Technology and Infrastructure Finance, “Pension Fund Asset Allocation and Infrastructure Finance,” New York, 23 October 2019. Clive Lipshitz and Ingo Walter.

Public Pension Funds and Infrastructure Investing, National Conference on Public Employee Retirement Systems, Chicago. June 2019. Clive Lipshitz.

Building Bridges VI: Financing Public Infrastructure in North America, October 2018, Washington, DC. Clive Lipshitz

Harvard Law School Forum on Corporate Governance – Post: “Sense and Nonsense in ESG Ratings.” December 2, 2000. Ingo Walter

Datasets

The Infrastructure Initiative subscribed to or acquired a number of datasets that made possible the empirical work. These include the following.

Pension Funding and Infrastructure Investments

A primary dataset was developed for each of the 25 largest US and 10 Largest Canadian pension plans. The dataset is unique and makes possible asset allocation, governance and related information. The “Public Pension Plans in Canada and United States” dataset is a collection of data extracted from the Comprehensive Annual Financial Reports of twenty five pension plans in the United States and ten pension plans in Canada. It contains annual data from 2008 to 2018 (depending on availability) for 11 topics. Topics and their respective variables are available in the Index tab. Plans’ details and each topic data has its own long-format spreadsheet linked to the Index. The dataset has been archived for future researchers to access via internet search engines.

The dataset has also been deposited with the Faculty Digital Repository, which describes the data, contributors and licensing. A permanent link has been generated and can be used when citing this data in any future research: <http://hdl.handle.net/2451/61490> The data can be referenced by a doi. The NYU Library has a license with DataCite to generate dois and that would point to this permanent link. The dataset will also placed in the NYU Bobst Library’s new data-specific repository. Access to the dataset is publicly available at <http://hdl.handle.net/2451/61490>

Social Sentiment and the Extraction of Shale Resources

Two large datasets were needed for the development of the “License to Drill” project.

(1) Industry data that captures the operations of oil and gas companies across the United States. Prof. Dorobantu obtained free academic access to industry data compiled by Drillinginfo (now, Enverus) and, together with the assistance of Research Associate Michelle Namkoong, downloaded, cleaned, and processed the data to prepare it for empirical analysis (the work involved downloading and processing over 230 million data points for well-level daily production and over 1 million drilling permits). The finished dataset consists of over 20,000 firms (known as operators) with operations in 1,400 counties: approximately 950,000 gas and oil wells (unique API numbers) and 700,000 new permits. The complete dataset tracks the level and changes in firm’s production and applications for new permits over time in every county in the U.S.

2) Twitter data that captures social sentiment towards the operations of firms extracting shale oil and gas. With financial support from the Stern Infrastructure Initiative, Prof. Dorobantu purchased from Twitter raw data consisting of 2.2 million tweets (with 182 associated fields) published between June 2014 and Dec 2016. The raw data was processed to clean tweets, remove irrelevant ones, replace emoji characters with text descriptions, and geocode user locations to enable their mapping to counties in the U.S. The cleaned tweets were coded using a sentiment analysis algorithm (the BERT model in Google Collaboratory) and the values were aggregated to capture the mean and the variance of social sentiment toward the extraction of shale oil and gas in every county in the U.S. over time.

The two datasets were merged to allow statistical analysis of the relationship between social sentiment toward the extraction of shale oil and gas and firm operations in this industry. Empirical research using this dataset will be published in academic journals and disseminated more broadly through practitioner-oriented outlets.

Case Studies

One of the objectives of the GIAS infrastructure project has been to migrate academic understanding of infrastructure into the classroom. One way was to encourage and sponsor case-writing, which can be an effective teaching tool in business and management. Five such cases have been produced so far:

Cheniere. Case study of a major energy infrastructure project – the Cheniere Sabine Pass, Louisiana LNG export facility that is in full operation. The case objectives: Overview of the project finance debt market, a large and growing area of specialty finance. Understanding the decision making and risks associated with a long-lived project and various ways to mitigate risks using project finance. Introduction to the liquefied natural gas (LNG) market, a capital-intensive sector comprising a major component of global project finance. Basic primer on credit and relative value analysis. Insight into how bank regulatory changes and other policy responses to the 2008-2009 global financial crisis have led to both innovation and unintended market consequences in the project finance arena. Understanding the integration and interplay between various market segments, functions and participants. Introduction to various roles in the project finance and broader finance industries. Widely used at NYU across MBA and Executive Programs. Published in the INSEAD and Harvard Business School case series 06/2016-6372. *Paul H. Tice.*

Rutas de Lima. An infrastructure finance case study in an emerging markets context, *Rutas de Lima*, was written in 2016-17 and taught a dozen times at the undergraduate and graduate levels at NYU and universities in France, Germany, Singapore and Australia. Published in the INSEAD and Harvard Business School

case series 06/2016-6372. *Ingo Walter*

Dakota Access Pipeline Project (DAPL). Written in summer 2017 and taught five times in 2017-20 in the NYU Stern MBA program. The case considers conflict issues that emerged between the DAPL sponsors, native American tribal interests, environmentalists worldwide, banks and financial institutions and the U.S. Army Corps of Engineers, among others. Published in the INSEAD and Harvard Business School case series 03/2018-6379. *Sinziana Dorobantu and Ingo Walter*

The Goethals Bridge Replacement Project Case Study examines a \$1.4 billion design-build-finance-maintain (DBFM) public-private partnership (P3) that was used to construct the replacement bridge for the 90-year-old Goethals Bridge connecting New Jersey and New York through the borough of Staten Island. Completed within four years — ostensibly on time and on budget — this P3 project was a joint venture between the Port Authority of New York and New Jersey (PANYNJ) and equity sponsors, namely Macquarie Infrastructure & Real Assets (MIRA) and Kiewit Development Company. Debt financing for the project included both Transportation Infrastructure Finance and Innovation Act (TIFIA) loans from the federal government and tax-exempt Private Activity Bonds (PABs). Among the topics are the P3 project benefits that accrued to both the public sector and private partners involved, while providing an overview of the municipal finance market (including ratings requirements and bond insurance wrappers) and the dynamics of the infrastructure private equity space (including targeted returns and fund structure considerations). The case study assesses the logistical, engineering and political challenges of upgrading and replacing decaying high-usage public infrastructure assets in this country for potential read-throughs and policy takeaways for the broader U.S. transportation sector and domestic P3 market. The case study was completed in February 2019 and taught at the MBA level in the spring semester 2019, spring and summer 2020 and spring 2021. *Paul H. Tice.*

Aborted Take-off: Mexico City's New International Airport. This case study examines the \$13.3 billion Mexico City international airport project to replace the existing Benito Juarez International Airport. The replacement airport, located in Texcoco, was announced to great fanfare in 2014 but was subsequently cancelled in late 2018 after national elections were held earlier that year—this despite being owned, designed and developed by various agencies of the Mexican government. Moreover, at the time of cancellation, the project was about one-third complete, with the roughly \$4.4 billion of capital spent to date having been funded by senior secured project bonds issued in the international markets over 2016-2017. Among the topics explored, the case study are the political risks associated with infrastructure projects located in emerging market countries (even those with long-standing investment grade sovereign ratings) and the inherent difficulties in reconciling long-term investment horizons with shorter-term election cycles, along with a discussion of the unique challenges involved with

replacing, and transitioning from, a critically-important, high-usage infrastructure asset such as an international airport. The case study also provides an overview of the investment grade project bond market (including the checkered history of Latin American infrastructure project finance since the 1980s sovereign debt crisis) and highlight the importance of contractual agreements and debt covenants for creditors, while also providing an introduction to distressed debt negotiations and the game theory and organizational skills involved with bond tenders and consent solicitations. *Paul H. Tice.*

Goldman Sachs and One Malaysia Development Berhad (1MDB). In October 2020 Goldman Sachs reached a \$2.9 billion “deferred prosecution” agreement with the U.S. Department of Justice covering its role in one of the world’s largest cases of financial corruption and theft. Epicenter of the fraud was an economic development fund established by the government of Malaysia – Malaysia Development Berhad (1MDB). The previous July, Goldman had already reached a similar \$3.9 billion settlement with Malaysia, along with a \$350 million fine imposed by Hong Kong’s financial regulator. In all, the scandal was estimated at the time to cost Goldman Sachs roughly 2/3 of a year’s earnings, and formed a large and potentially long-lasting stain on the firm’s 151-year history. This case presents the known facts of the scandal, the role 1MDB was assigned in the infrastructure development of the country and the impact of the theft on the various stakeholders, as well as the reputational, governance and managerial consequences for Goldman Sachs. The case was completed in spring 2021 and will be Published in the INSEAD and Harvard Business School case series. *Ingo Walter.*

Course Development

Project Finance and Infrastructure Investments is an MBA mini-course (6 weeks) taught in Fall 2017 and each Spring 2018-2021 as well as summer 2020. This course had been offered with an average enrollment of about 50 students in each class. Paul H. Tice and Ingo Walter.

Organization

The Infrastructure Finance Initiative was made possible by a 2017 grant from the the NYU Global Institute for Advanced Research (GIAS). GIAS financial support was extended for one academic year (2019-20) to allow completion of the work program - and additionally to August 2021 to cover the contract of one of the research assistants. Sections of the project are continuing after the expiration of the GIAS grant period.

The Infrastructure Initiative has been directed by Ingo Walter, Seymour Milstein Professor Emeritus of Finance, Corporate Governance and Ethics.

The Initiative has been governed by a Steering Committee comprising Lawrence White, Robert Kavesch Professor of Economics, Sinziana Dorobantu, Associate Professor of Management; Arpit Gupta, Assistant Professor of Finance; and Paul H. Tice, Senior Investment Manager, Shroder Investment Management.

The Infrastructure Finance Initiative employed two research assistants each year during 2018-2020 in addition to one extension to 2020-2021..

