New Models for Financing Infrastructure in Asia

Financial Innovations Lab® Report

April 2017

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Financial Innovations Labs® bring together researchers, policymakers, and business, financial, and professional practitioners to create market-based solutions to business and public-policy challenges. Using real and simulated case studies, participants consider and design alternative capital structures and then apply appropriate financial technologies to them.

Acknowledgments

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About the Milken Institute

A nonprofit, nonpartisan economic think tank, the Milken Institute believes in the power of finance to shape the future. The Milken Institute produces rigorous, independent economic research—and maximizes its impact by convening global leaders from the worlds of business, finance, policy, academia, and philanthropy. By fostering collaboration between the public and private sectors, we transform great ideas into action.

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INTRODUCTION

With nearly 60 percent of the global population and still growing, it's no surprise that Asia's growth continues to surpass that of other regions. In 2015, for example, the economies of China and India grew at 6.9 percent and 7.6 percent, respectively, relative to 2.2 percent for the United Kingdom and 2.6 percent for the United States.[1] While forecasters have warned that Asia's growth will likely taper in the next few years, they note that the region's robust domestic consumption, buoyed by growing middle classes and strong labor markets, could compensate for reduced momentum of international financial markets.[2]

Rising domestic wealth across Asia means that one finds enormous pressure to extend and upgrade infrastructure, particularly for countries in Southeast Asia, better known as the 10-member Association of Southeast Asian Nations (ASEAN). Vulnerabilities abound, whether telephone connectivity in the Philippines or the quality of roads in Vietnam. Infrastructure that comprises state-of-the-art supply chain capabilities, financial technologies, communications, IT, and utility networks are needed to compete for global markets and foreign investment and link cross-border markets. Most important, improved roads, rails, and water and sanitation infrastructure all factor into poverty reduction and increased well-being for the inhabitants of these countries.[3]

Funding infrastructure, even in developed countries, is often a challenge. As in the U.S. and elsewhere, project funding in Asia has historically come from bank loans and governments, either locally or at the national level. But this dependence on public funding and restrictions on much commercial bank lending have stymied financial innovation and the capacity of domestic capital markets to implement new products, such as project bonds, equity investments, quasi-public debt facilities, infrastructure debt funds, and hybrid structures.[4]

Moreover, Asian governments are experiencing tighter budgets and higher debt levels,[5] which makes private capital more attractive in terms of shared costs and risk. But the appeal isn't necessarily reciprocal. Potential private funders face a number of common issues, including barriers to entry and uncertainties about project efficiencies and sustainability that can affect profitability and returns on investment. For example, the miscalculation of passenger demand and sinking runway problems in Kuala Lumpur's newest airport terminal have caused significant cost overruns due to late-stage design changes.[6] Issues like these give pause to investors, whose returns for their risk-taking depend on long-term sustainability.

Other concerns are more macro: regime vulnerability and corruption, the capacity of regulatory institutions and capital markets in emerging Asian economies, political risks, and currency movements that could also affect returns for investors.

Thirty-two of Asian Development Bank's member countries are in need of some US$8.22 trillion for infrastructure improvements, with the greatest needs in the energy and transport sectors. New capacity development alone would consume two-thirds of the total opportunity, and upgrades or replacements another third.[7] On average, these countries would need to spend 6 percent to 8 percent of their own GDP to meet the current demand, with some nations better able to meet the funding gap than others.[8] Private investment could ease some of the strain on government spending, and investors are looking for opportunities as Asia's capital markets and regulatory environments strengthen.

The Milken Institute convened a Financial Innovations Lab® in Singapore in September 2016, bringing together leaders from private equity funds, commercial banks, development finance institutions, and corporations, as well as institutional investors, with the goal of producing specific recommendations about infrastructure financing models for investment in ASEAN infrastructure.

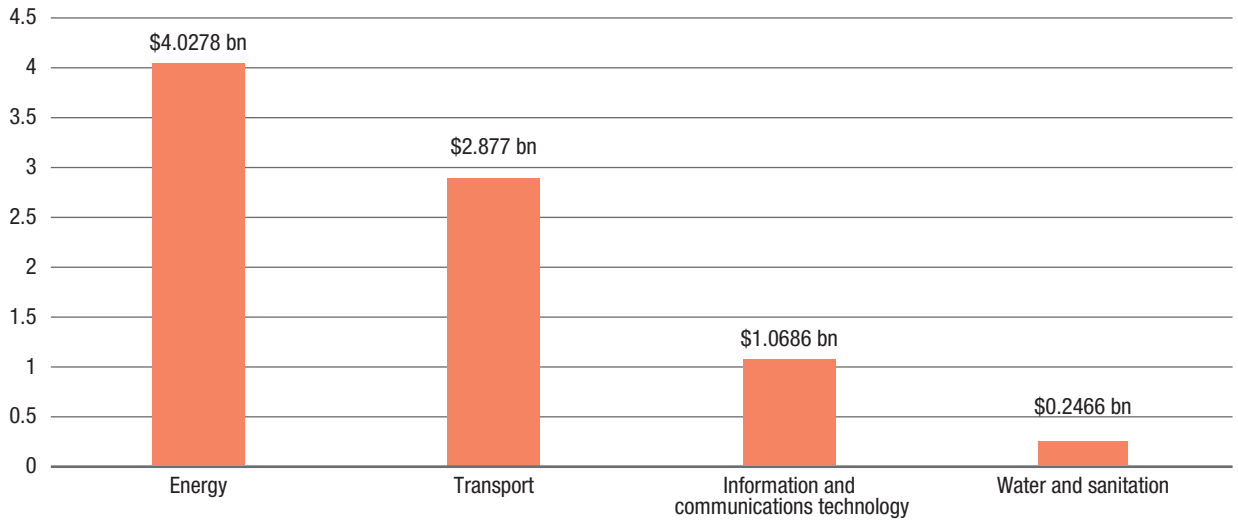
Financial Innovations Lab participants identified several barriers to investment and discussed various investment models that could mitigate some of the perceived risks. They agreed that stronger capital markets, better risk-assessment tools, and more on-the-ground information are essential to attracting foreign investors.

ISSUES AND PERSPECTIVES

Infrastructure development affects every aspect of society. Yet Asia's overall infrastructure development isn't keeping pace with the region's economic and population growth.[9] Where existing infrastructure deteriorates, so do living conditions. It is important to remember that these economies are home to almost two-thirds of the world's poor, for whom the basics of clean water, electricity, and safe roadways are steppingstones to health, education, and employment.[10] In many instances, too, infrastructure development in one sector plays an important role in others: poor water management systems, for example, can affect agricultural output and health outcomes.

Urbanization is a growing trend in ASEAN countries: 22 percent of the collective populations currently live in cities, and 54 million more people are expected to move to cities by 2025,[11] increasing the demand for housing, transport, and basic services. Energy and transportation infrastructure development requires about US$6.9 trillion of the US$8.22 trillion total (figure 1). Telecom, and water and sanitation infrastructure, at US$1.07 trillion and US$0.25 trillion, respectively, account for the remainder.

FIGURE 1 | Infrastructure deficit in developing Asia



Source: Asian Development Bank, "Infrastructure for Asian Connectivity."

While more new infrastructure is necessary, there is also a need to improve the quality of existing infrastructure. Figure 2 shows how the infrastructure components of the ASEAN countries rank against the infrastructure of 138 other self-reporting economies in the World Economic Forum's Global Competitiveness Index. The report highlights the region's progress in digital infrastructure and information technology but warns that complacency in innovation, in those sectors, could lead to a "middle-income trap," i.e., when a country fails to develop into a high-income nation because it loses its hunger for competitiveness, and its gross national product (GNP) levels off.[12]

FIGURE 2 | Global competitive index rankings

Indicator	COUNTRY								
	Philippines	Singapore	Malaysia	Thailand	Indonesia	Vietnam	Brunai Darussalam	Lao PDR	Myanmar*
Quality of roads	106	2	20	60	75	89	41	91	139
Quality of railroad infrastructure	89	5	15	77	39	52	N/A	N/A	96
Quality of port infrastructure	113	2	17	65	75	77	87	132	123
Quality of air infrastructure	116	1	20	2	62	86	84	100	132
Quality of electricity supply	94	2	39	61	89	85	52	77	118
Fixed telephone lines/100	107	29	72	91	86	99	85	73	124
Mobile telephone subscriptions/100 pop.	65	24	27	55	38	40	85	131	135
Quality of overall infrastructure	112	2	19	49	80	85	67	81	135

*Myanmar did not meet survey requirements to be included in the 2016-2017 report, these numbers are from 2015-2016

Source: World Economic Forum.

Infrastructure projects are funded through a variety of tools and across multiple players. Most are considered to be public goods, therefore funded by the government. A government's existing debt burden can often indicate its capacity to pay for projects. In ASEAN, the governments are the largest subsidizers and funders of infrastructure financing, paying for 90 percent of infrastructure in the Philippines, 80 percent in Thailand, 65 percent in Indonesia, and 50 percent in Malaysia, or on average 1 percent to 2 percent of their GDPs.[13]

In cases where the government is not the sole funder of an infrastructure project, it will seek out private investment. An example is a public-private partnership (PPP), which provides a means to raise overall project funding, manage project risk, and outsource management of the project to investors. A common PPP structure is the "build-operate-transfer" project in which the government contracts a private party to finance the building and operation of a piece of infrastructure, such as a toll road, and then transfers the property back to public ownership. In return, the private party is paid by the government or utility that will retain ownership.[14]

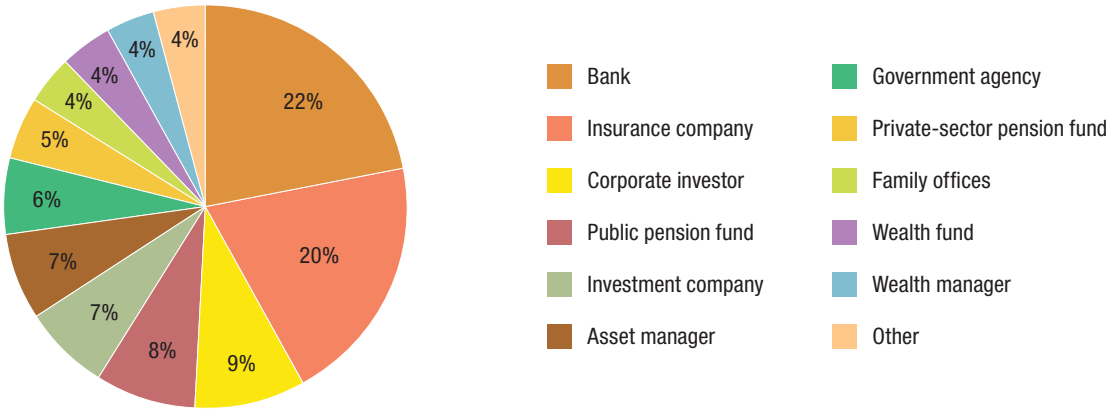
Official development assistance (ODA) is another source of infrastructure funding. ODA funds are grants or loans for economic development and social welfare offered at preferential prices from donor countries to developing countries.[15] This form of aid was estimated to total US$12 billion in 2013, an annual growth rate of 6 percent since 2005.[16] Organization for Economic Co-operation and Development (OECD) member countries are responsible for most of this funding, followed by the European Commission. According to a 2015 report from the U.N. Economic and Social Commission for Asia and the Pacific (ESCAP), ODA for infrastructure development has outpaced overall ODA funding in the Asia Pacific, particularly to fund PPP projects in water and sanitation, transportation and storage, communications, and energy.[17]

Multilateral development banks (MDBs) like the World Bank are another source of infrastructure funding in Asia. These banks rely on member donations, bond issuance, and interest on loan repayments to fund their loans, grants, and technical assistance both to member governments and private enterprises. The ADB has been the lead provider for funding in the region, filling in gaps for lower-income countries like Cambodia and Myanmar that rely on concessionary capital (that is, capital that "concedes" some of its returns for the sake of social benefits). In these countries, where perceived risk is high, the ADB works to strengthen projects through its Asia-Pacific Project Preparation Facility to better position them to attract private capital at later stages of the project.[18] Other players in this space include the World Bank's investment arm; the International Finance Corporation (IFC); and the Asian Infrastructure Investment Bank (AIIB), the multilateral development bank initiated by China that began operations in 2016 (see page 7).[19]

Additionally, there are donor-funded infrastructure development companies that invest in regional infrastructure. InfraCo Asia focuses on funding the early phases of high-risk projects, working with local governments, private investors, and lending facilities. Recent projects include a hydro plant in Vietnam (completed in 2016); six smaller hydro projects in the Philippines' northern Luzon Island (project approved in 2016); and a waste-to-energy plant for Colombo, Sri Lanka (financial close date was expected in 2016).[20] A sister company, InfraCo Asia Investments Pte. Ltd., provides funding for a project's financial close to ensure completion.[21]

Asia-based sources of public and private infrastructure funding are broken down by sector in figure 3. As shown, private-sector banks and insurance companies (which benefit from increased portfolio diversification and an offset to long-term liabilities[22]) often provide the largest chunks of debt financing in the form of loans since the traditionally weak capital markets don't offer opportunities to raise money through equity or bonds. Other than bank loans, private capital has traditionally come in the form of corporate finance: infrastructure companies often fund their own projects by issuing debt. But funding through the issuance of corporate bonds is limited by how much debt a company can add to its capital structure, and carries a component of credit risk since the bonds are only as good as the company.

FIGURE 3 Breakdown of Asia-based institutional investors in infrastructure by type



Source: Preqin 2015b.

As a whole, a project is generally structured with equity capital from private investors and/or domestic governments and development banks. Governments may help raise capital by funding grants and financing loans, or through donor-funded companies. In later phases, commercial banks may issue a combination of short- and long-term debt to help complete the projects and fund ongoing development and improvements. The types of capital required, and the timing of capital raised, will depend on the phase and type of project.

Lab participants agreed that early-stage equity financing that gets the project off the ground is the main funding component missing in Asia. These costs often involve hiring infrastructure and financial experts who can assess potential feasibility, help assemble a development package for bidding, and prepare for successive bid refinements—all this before the project has even gotten off the ground. Other early risks include local, institutional, or market capacity constraints, problems with a weak regulatory environment, and bureaucratic bottlenecks in land acquisition or obtaining environmental impact approvals.[23]

Private investors may face barriers to entry from the governments themselves, as illustrated in figure 4, which shows the restrictions on private investment and foreign direct investment (FDI). Indonesia, Vietnam, and the Philippines impose restrictions on certain types of foreign and private infrastructure investment. Reasons may include national security, economic needs, and the resolve to maintain domestic control over certain types of projects.[24]

FIGURE 4 Restrictions on private-sector participation and foreign direct investment

Max private / Max FDI

Max FDI <50% Max FDI <30%

	United States[1]	United Kingdom	India	Indonesia	Vietnam	Thailand	Philippines
Power	100 / 100	100 / 100	100 / 100	100 / 95	100 / 100	100 / 100	100 / 100[4]
Airports	100 / 100	100 / 100	100 / 74	100 / 49	0 / 0	100 / 100	100 / 40
Ports	100 / 100	100 / 100	100 / 100	100 / 49	100 / 49	100 / 100	100 / 40
Roads	100 / 100	100 / 100	100 / 100	100 / 95	100 / 49	100 / 100	100 / 100
Railways	100 / 100	100 / 100	100 / 100[2]	100 / 95	100 / 49	100 / 100	100 / 100[4]
Telecom	100 / 100	100 / 100	100 / 74	100 / 49[3]	49 / 49	100 / 100	100 / 40
Water	100 / 100	100 / 100	0 / 0	100 / 95	49 / 0	100 / 100	100 / 100[4]
Irrigation	100 / 100	100 / 100	0 / 0	100 / 100	100 / 100	100 / 100	100 / 100[4]

[1] No limitations. However, critical infrastructure projects are subject to congressional review.

[2] 100% for building railway infrastructure; rail operations are run solely by government.

[3] 49% applies to fixed-line infrastructure; limit for mobile infrastructure is 65%.

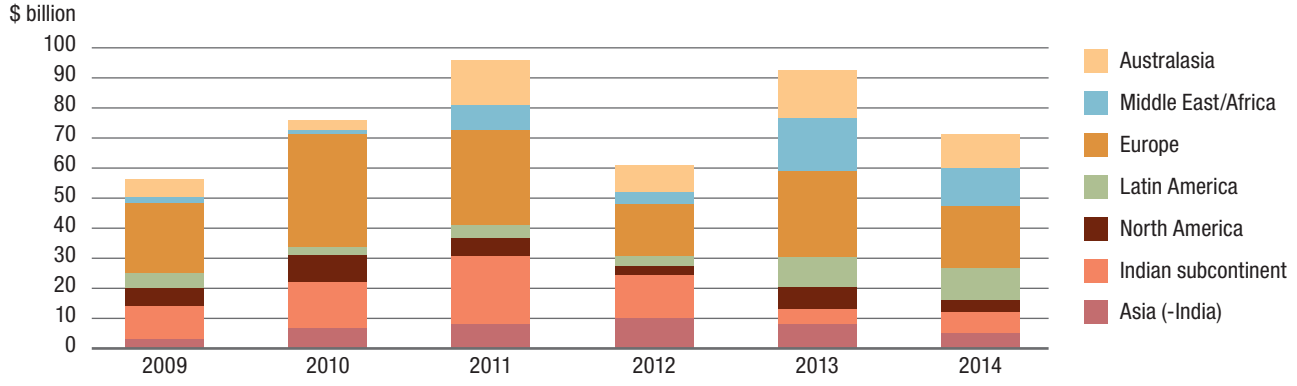
[4] 100% for greenfield projects; 40% for brownfield projects.

Source: McKinsey & Company, 2011.

In later-stage funding, commercial banks often provide capital for project growth or expansion; but they are beginning to feel balance sheet constraints, particularly with the implementation of Basel III, which began in 2013 and will continue until 2019. New bank requirements address risk coverage (notably for complex securitizations and exposure to counterparty risk); leverage (capital requirements, weighted to risk); and general monitoring and disclosure practices for risk management. The new regulations will ultimately lead to higher costs for the banks, which will add to project costs.[25]

The prevalence of PPP projects in Asia lags behind much of the world, as shown in figure 5. The European market (defined as the EU-28, the Balkans, and Turkey) had €18.7 billion of PPP transactions reach financial close in 2014,[26] compared to less than $5 billion in Asia, excluding India, for the same time period. Though in 2014, the ASEAN Secretariat and the OECD formalized a set of principles for PPP frameworks to provide governments with implementation guidance.[27]

FIGURE 5 Public-private partnerships volume by region



Source: Dealogic 2015.

To that end, Vietnam's Ministry of Planning and Investment (MPI) has shifted its focus to public-private partnerships (PPPs) to encourage infrastructure projects and transfer some risk away from the government.[28] Similarly, the government of the Philippines established the Public-Private Partnership Center in 2011 to coordinate and monitor all PPP activity in the country and to provide a project preparation facility and capacity building for agencies implementing various projects.[29] The focus of central governments on PPPs demonstrates the need for, and interest in, private-sector engagement and the commitment of public officials to work with the investment community.

Overall, while the past two decades have seen some growth and strengthening of ASEAN's capital markets, more improvements are necessary. Greater diversity of financing products and structural reform that will increase transparency and liquidity are necessary to attract private and institutional investors. On a more macro level, instability in policies and governance can affect risk profiles; the greater the risk, the more likely investors will demand higher returns. Innovative financing mechanisms would allow the private sector to increase its participation.

THE ASIAN INFRASTRUCTURE INVESTMENT BANK (AIIB)

China has become a global leader in infrastructure development, and while exact numbers for the country's investments have been inconsistent, some estimates show that China invested $6 billion in capital expenditures for greenfield (infrastructure built from scratch) investments in 2014 in Africa alone.[30]

China proposed the multilateral Asian Infrastructure Investment Bank in 2010 and launched the initiative in 2014. Operations began in December 2015, and in its first year, AIIB funded projects in Asia, Europe, and the Middle East. The bank was started by 57 founding countries with $100 billion in capital,[31] and a mandate for infrastructure finance only, unlike the ADB and World Bank, which have a wide range of functions. To give context to its financial heft, the AIIB is roughly 30 percent the size of the European Investment Bank and double the size of the European Bank for Reconstruction and Development (EBRD), two of the leaders in infrastructure development.[32]

The founding members of the bank have participated in developing its core philosophy and operating platform, based on best practices from existing multilateral development banks and the private sector. The AIIB has developed its own environmental and social framework that helps guide its investment decisions through extensive due diligence.[33]

Through the AIIB, China is expected to play a vital role in infrastructure development in Asia by serving as the lead investor, taking on some risk for institutional investors who may not otherwise get involved in less-developed countries.[34] Additionally, as China is moving from an export economy to relying more heavily on local consumers and investments abroad, infrastructure plays a big role in providing investment opportunities.[35]

China may also try to improve efficiencies of traditional donor organizations like the World Bank and ADB by doing the legwork on due diligence for investments. By partnering with multinationals and private institutional investors, the AIIB builds its credibility as investments are put to work in the next several years. Securing a high credit rating from agencies such as Standard & Poor's will also benefit the viability of the bank and its ability to attract private-sector investment.

Notable exceptions to the AIIB founding members are Japan and the United States,[36] the latter of which tried to pressure other Western nations to refrain from joining. China currently owns 33.41 percent of the bank's stock and has 28.79 percent of the voting power.[37] Some view China's large stake in the bank as a problem because of the influence the country could wield over its operations; others counter that the U.S. and Japan have an inordinate share of voting power in the ADB.

There are also concerns over the actual projects. One example is China's One Belt, One Road initiative, connecting China economically with Asia, Africa, Europe, and the Middle East, which would involve more than 60 countries. In addition to issues involving conflict-ridden territories, safety, and cross-border travel and transactional regulations, there is some concern again over China's positional advantage.[38]

BARRIERS TO INVESTMENT

Lab participants agreed on two key points: that the need for infrastructure investment in the ASEAN region will continue to grow, and that private investment will only grow if certain barriers are addressed. These pertain to credit and sovereign risk, bureaucracy, and idiosyncrasies with currency fluctuations. In Asia's underdeveloped capital markets, there are still more challenges, not the least of which is corruption and political instability.

Sovereign and Credit Risk

Sovereign risk—which includes the quality of institutional frameworks, regulatory infrastructure, and risks of sovereign bankruptcy and upheaval[39] across emerging markets globally—has improved dramatically in recent years, but the credit of a number of countries in developing Asia remain below investment grade,[40] making it a challenging case for pension funds and insurance companies that require investment-grade credit ratings for their investments.

Sovereign guarantees, or risk insurance, are sometimes available to mitigate some of these concerns. These guarantees often force a government to assume credit risk.[41] However, in the case of emerging countries, investors may be skeptical of the government's ability to fulfill the commitment, particularly during an economic downturn.[42]

Another form of risk associated with infrastructure is credit risk stemming from the project itself. There is a risk of the project not being completed as well as the project not generating its expected revenues. A related risk is associated with the infrastructure project's "off-taker," meaning the company or entity that will purchase the resource at the end of the project. The price agreement between the producer and off-taker is generally negotiated before the construction of the facility and includes an embedded risk that the buyer will not fulfill the payment at the agreed-upon date.

The time it takes to research and assess potential projects for a credit rating can take a heavy toll on early finances, one that local developers do not want to roll into their own costs. Investors, however, may be unable or unwilling to perform due diligence if there are too few projects in a country's infrastructure pipeline to warrant the time and costs associated with it. Without sufficient data, they are likely to turn elsewhere for investment opportunities.

That said, the investment firm PIMCO, which handles investment portfolios for the retirement and pension plans for many public agencies, including schools, reported in 2013 that "U.S.-dollar-denominated Asian credit, including corporates, sovereigns and quasi-sovereigns, has more than doubled in just five years." A decreasing supply of dollar-denominated sovereign bonds in the rest of the world, continued strong demand for bonds that yield more than U.S. treasuries, and increases in issuances from corporations are some of the reasons behind this increased demand.[43]

Political and Corruption Risks

Several Lab participants stated that ASEAN's political and corruption risks outweigh the rewards of investing there. From political coups in Thailand to threats of terrorism in Indonesia and Malaysia, uncertainty remains about events that could result in project failure. In a report published in 2016, the OECD also noted that bribes to procure infrastructure contracts and issue licenses and permits were commonplace.[44] Accustomed to best practices like the U.S. Foreign Corrupt Practices Act and the U.K.'s Bribery Act, investors may decide that their concerns outweigh the investment opportunities.

There has been some success in Asia to combat corruption, mostly through governmental agencies, such as the Malaysian Anti-Corruption Commission, or those created by development banks; the ADB's Office of Anticorruption and Integrity is one example. Yet reports of ongoing corruption continue. A survey conducted by the U.S. Chamber of Commerce in 2016 showed that the majority of respondents felt that the risk of bribes to obtain licenses and permits would adversely affect long-term operations in Cambodia (89 percent), Laos (85 percent), and Vietnam (74 percent).[45]

In some countries, investors can purchase political risk insurance. The ADB, for example, provides a political risk guarantee (PRG) for qualifying projects in member states in which the bank has some direct or indirect role. The guarantees help protect against losses due to expropriation, political violence, contract disputes, and default of a sovereign guarantee.[46]

The Multilateral Investment Guarantee Agency (MIGA), a member of the World Bank Group, also provides political risk insurance (PRI). However, a 2013 survey completed by MIGA suggests that while there has been a growth in political risk issuance in absolute numbers, only 15 percent of respondents used it as their main risk-mitigation tool. Fifty-four percent of respondents said they used market-testing strategies, e.g., entering markets slowly and with smaller investments.[47] Investors felt that the risks most effectively managed by PRI were political violence and expropriation, less so breach of contract and regulatory changes. To put that into context, the same survey shows that 58 percent of respondents felt that adverse regulatory changes were of the highest risk to investments over the next three years.[48]

Foreign Exchange Risk

The risk of currency devaluation during the long tenor (tenure) of an infrastructure investment is significant. When a central bank manages the rate at which the currencies trade, it can provide stability to the local currency during times of economic or political instability; but this can trigger alarm in the markets. In August 2015, for example, the People's Bank of China (PBOC) set the currency rate to a six-year low against the U.S. dollar (US$) in an attempt to make exports more attractive, but this caused sudden drops in the currencies of South Korea, Australia, and Singapore.[49] This weakening of currencies without an adjustment in asset prices lowers the value of existing infrastructure investments in US$ terms. Additionally, for purchasers of local currency denominated debt or equity, a weaker local currency implies a devaluation in the investment in US$ terms. For investors who need to convert back to their home currency, an adverse move in the currency can dramatically change the return profile of the investment.

The Asian currency market is generally not deep enough, i.e., large enough, to accommodate sufficient long-term hedging to match the maturities of infrastructure projects. As a result, foreign investors prefer investments denominated in US$. However, for local developers, a weakening currency can greatly increase the costs of buying the dollars required to service the debt and repay loans, increasing the likelihood of default.

Limited Product Offerings and Liquidity Constraints

Until a country builds up its financial markets and its capacity to manage complex financial tools and facilities, it will not attract the private investment that has propelled a number of countries, from Asia to Africa and the Middle East, into high-functioning economies. It must have a steady pipeline of investments available to justify doing research on a market; and it must provide investors with the tools to monitor and evaluate investments.[50] Investors also want assurance that they can divest the investment prior to maturity and not be locked into inflation, currency, and interest rate risk over long periods. By not providing investors with sufficient liquidity to exit their investments, the underlying asset can face significant price volatility when interest rates rise quickly.

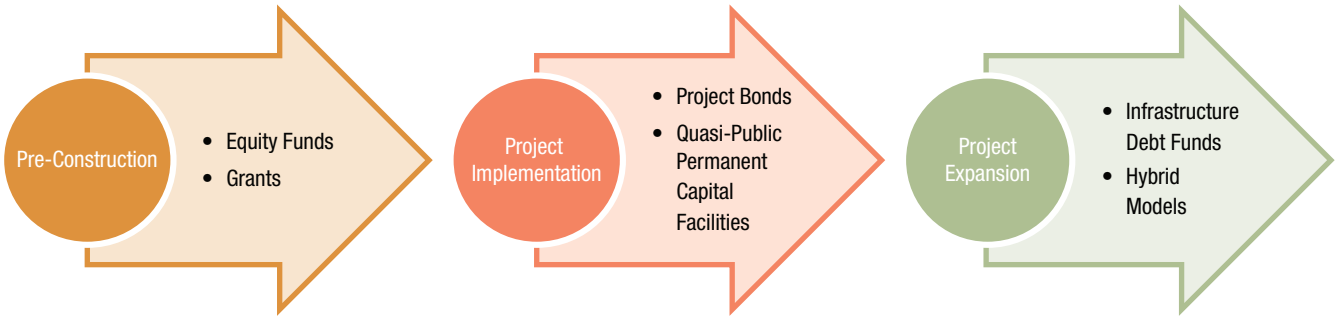
Deal Implementation Risks

Government bureaucracy can mean delays in obtaining building permits or land rights, pushing out the completion timeline. Since infrastructure projects rely heavily on bank loans, these delays can jeopardize the ability to secure funding. This type of risk is associated with frequent regime changes and unclear priorities from the government. Concern that a project may be sidelined by an incoming government can deter investors.

In some cases, the ADB or a private equity group is able to offset risk by coming in at early stages to provide grant or equity funding. As noted earlier, in May 2015 the ADB announced a multi-donor trust fund, the Asia Pacific Project Preparation Facility (AP3F), to provide project support to governments, including due diligence and advisory services for regulatory and legal frameworks. The hope is that the facility will ease some of the challenges in deal implementation and encourage more private investment; but at $73 million, the trust fund is still relatively small compared to the need in the region.[51]

FINANCIAL SOLUTIONS

Selecting the appropriate financing model for a given infrastructure investment requires a deep familiarity with the country in question, financial and legal expertise, and a clear idea of the investors' risk-return profiles. Lab participants discussed project bonds, infrastructure debt funds, quasi-public infrastructure debt funds, infrastructure banks, and equity funds with the government taking a first-loss position as possible solutions to bring more funding to infrastructure projects at the various stages of infrastructure development.



EQUITY FUNDS WITH FIRST-LOSS CAPITAL

One way to provide a form of insurance is through the implementation of a first-loss option within an equity fund. In this structure, the government would take a subordinated position in the capital structure, absorbing any initial predetermined losses in a project. For example, the government would participate in the common equity in a structure that includes preferred equity classes. The structure would reduce the total cost to the government by raising private capital; a number of governments already use official development assistance (e.g., from the World Bank or the ADB) to help pay for their guarantee provisions.[52]

Many participants favored a first-loss equity model in which the government would be forced to "have some skin in the game" and mitigate investor concerns about government inefficiencies. Others felt that such a model wouldn't make it through sluggish government bureaucracy, which would just further delay a project from its launch date. There was also a perception of first-loss funds to be "dumb money," meaning they provide risk mitigation to some investors but have no real benefit for the provider of the guarantee. The guarantee might make investors think twice about how confident the guarantor is in the project if it must provide such a provision to attract investment. Furthermore, by providing some form of a guarantee for investors, there is a risk of moral hazard: the project developer might take unnecessary risks because there is an underlying guarantee. Finally, by creating such provisions to absorb potential losses, the value of the underlying asset is distorted, which inhibits commercial market development.[53]

NEXT STEPS

Participants agreed that a more fleshed-out model, with supporting data from similar first-loss funds from other regions, would help test the feasibility of the model for broader application.

PROJECT BONDS

An infrastructure project bond raises capital from both domestic and international capital markets. The bond can be structured in various ways: from a private placement, with specific qualifying investors, to fully public bond issuances that open the door to all investors. The bond is repaid with profits generated by the new infrastructure, thereby transferring the risk of the project's viability to the investor.

Project bonds are securities, similar to corporate bonds, so they can be purchased in small notional quantities and have a standardized structure. These features make them accessible to a wider array of investors than a more complex loan could. For projects that have no construction risk, these products can also provide a lower cost of funding with fewer restrictions than a bank loan would contain.[54]

However, project bonds carry a risk known as "negative carry during construction;" the idea is that the cost to fund the project is higher than the bond yield in the early stages of the project. But if banks can provide early-stage capital and then issue a bond take-off, this lessens the negative carry risk. This type of financing would lower the time commitments of capital from banks, which would alleviate some pressure from Basel III requirements; and since banks are generally equipped to handle the issuances on the take-off, they could benefit from generating additional fees, further incentivizing the structure. The one consideration that remains with this is the refinancing risk for the project developer, particularly in a cycle of rising global rates.

The Europe 2020 Project Bond Initiative, launched in 2012 (but still in its pilot phase) by the European Commission and the European Investment Bank, was designed to make issuance of project bonds easier and attract funding for infrastructure from pension funds and insurance companies. The initiative provides credit enhancements by issuing a subordinated tranche in the form of a loan or contingent line of credit supported by the EU and EC.[55] This mitigates concerns around the early funding stages and gives institutional investors the creditworthiness they require. However, a Moody's report in 2014 on the success of the initiative demonstrates that while the bonds have been able to attract more investors, lower yields have frustrated some of them.[56] Risk is positively correlated with yield, so reducing it with the credit enhancement also reduces income generation from the investment.

Lab participants expressed concern about the lack of a developed ratings system for project bonds across ASEAN. For investors who lack the specific expertise in the region, formal ratings often provide the basis upon which to make investment decisions. For example, in Malaysia, the ratings agency, RAM Holdings, has been a pioneer for the ASEAN community, particularly because Malaysia has the most developed bond market. In August 2016, RAM announced a framework for rating debt instruments issued by renewable energy producers.[57] Malaysia has also benefited from the Employees' Provident Fund (EPF) acting as a specialist investor to analyze the transactions, facilitating private-sector engagement.[58] While this isn't a formalized rating system, the fund does a lot of the due diligence that is necessary in making investment decisions.

For countries that do not have either a formal or informal ratings agency, a shadow ratings system could be deployed. This system would take into account macroeconomic factors, the political and regulatory environment of the country, and the ease of developing projects by country to provide a shadow rating for an investment. By having this due diligence available to them, investors may be more willing to assess the viability of a project. The existence of developed capital markets gives investors benchmarks, such as risk-free interest rates, upon which to base their return requirements.

NEXT STEPS

Research regulatory requirements for issuing project bonds in countries outside of Malaysia and identify investors that can provide the due diligence of a shadow ratings system.

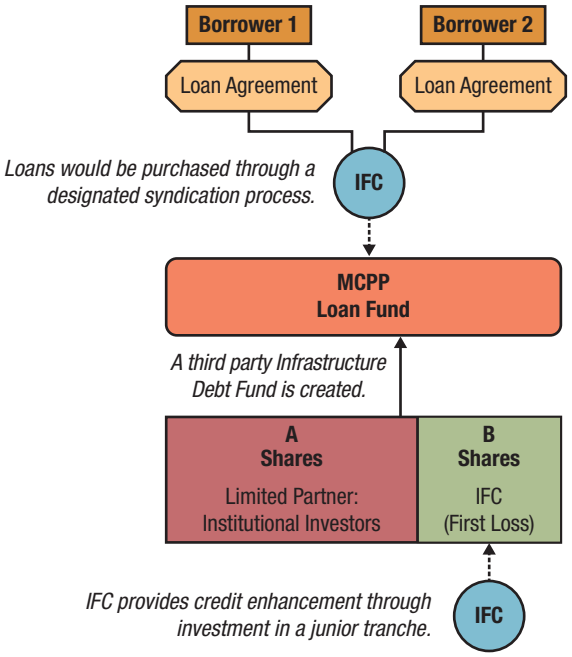
INFRASTRUCTURE DEBT FUNDS

Infrastructure debt funds pool debt from projects with varying degrees of risk into a diversified portfolio in order to reduce overall risk for investors. For example, in 2013, the International Finance Corporation (IFC), the investing arm of the World Bank, launched a diversified portfolio of loans that is open to external investors. The program, called the Managed Co-Lending Portfolio Program (MCPP), was launched with a $3-billion investment from the People's Bank of China. The program successfully invested these funds across 70 deals in less than two years. It created the structural capacity for investors who cannot do all the legwork required for multiple projects, but who want to diversify their exposure through different sector and regional investments. The investor and IFC come to an agreement on loan eligibility requirements and limitations, and the IFC picks investments for the portfolio that fit these constraints. The IFC commits an equal amount of its own capital for each investment, thereby sharing the same risk and return profiles as the investor.

The benefits to the investor include the ability to deploy capital in one transaction that is then invested in a portfolio without having to conduct the costly due diligence on each investment; the MCPP is able to leverage the existing capacity of the IFC for loan origination and management. By investing in a portfolio, the investor is also able to achieve sector and regional diversification through a single investment. Additionally, by co-investing in the fund, the interests of both the IFC and investor are aligned. Furthermore, the fees charged on the investment are not paid upfront on the amount invested, but rather on the performance of the fund, further aligning interests of both parties.[59]

Building on this success, the IFC launched a program in October 2016 called MCPP Infrastructure, which aims to raise $5 billion from institutional investors over the next five years. The new fund will focus on power, water, transportation, and telecommunications in developing countries.[60] As seen in figure 6, it functions similarly to the MCPP, with the added benefit of a credit enhancement. The IFC and the Swedish International Development Cooperation Agency (Sida) have partnered to provide a first-loss feature in which the IFC's investment will be subordinated to other investors. The credit enhancement is meant to address the regulatory constraints of some institutional investors, such as insurance companies mentioned earlier.[61]

FIGURE 6 Managed Co-Lending Portfolio Program Infrastructure



Source: IFC.

NEXT STEPS

Lab participants suggested modeling a country-specific fund in the ASEAN region, leveraging best practices from the IFC. Malaysia could serve as a case study because its current regulatory and capital markets environment are better developed than some of the other countries in the region.

HYBRID MODELS

Hybrid funds, which combine equity and debt of different maturities and sectors, have long been used by mutual fund companies to help investors achieve higher returns with a pure debt fund. They do this by adding a component of riskier equity investments that could boost the overall returns. The structure can be mimicked in infrastructure funds by combining investments in both greenfield and brownfield projects. Greenfield projects are nascent projects that require heavier equity infusions for construction and project development. Brownfield projects, such as a fully operating toll road, are already producing an income stream, thereby having a lower risk of default than greenfield projects. Brownfield projects require debt capital in order to maintain or grow current operations. A greenfield project, while riskier, can produce generous returns if the project is successful.

Lab participants agreed that by creating a fund that allows investment into both types of projects, investors can achieve higher return hurdles than a simple debt fund and a lower risk profile than an all-equity fund. This diversification is appealing for investors who need to meet higher benchmarks but are not comfortable in taking on the risk associated with new projects that have not been market-tested for profit.

NEXT STEPS

Explore regulatory environment and investor appetite for funds to buy both debt and equity investments in infrastructure funds.

CONCLUSION

The need for infrastructure investment in Asia is clear, as is the need to enlarge the pool of investors to fill the severe funding gaps that exist in some pockets of the region. Lab participants agreed that issues of credit, foreign exchange, and sovereign risk must be tackled to attract investments from conservative institutional investors and to introduce new financial tools and products that have worked successfully elsewhere.

No single solution will solve all of these issues in a region as diverse as ASEAN. But stronger governance, increased transparency, and host-country commitment will help push the needle forward. Financial models can run the gamut between higher-risk equity investments that generate higher returns and lower-risk debt instruments that provide more security for investors. These models should include equity funds with first-loss features, project bonds, infrastructure banks, and debt funds, as well as hybrid models that will allow more conservative players to enter the market.

Ultimately, transparency, due diligence, reform, and financial innovation will lead to stronger capital markets and reduce the perception of risk associated with a part of the world investors may not know well. It will also result in greater opportunity for financing from new regional multinational banks like the AIIB, which also demand best practices. One can build bridges, over highways and rivers, and connect ideas and hopes for the future. The funding is there for both, waiting for the proper channels.

APPENDIX

Financial Innovations Lab Participants

(Affiliations at time of Lab)

Jessica Bin
International Enterprise Singapore
Manager, Project Development Division

Pratik Bose
Cisco
Director, VC/PE Investments and M&A

Cosette Canilao
Atkins Acuity
Managing Director, Asia Pacific

Elizabeth Chia
State Street Bank and Trust Company
Senior Vice President

Curtis Chin
Milken Institute Asia Center
Asia Fellow

Belinda Chng
Milken Institute Asia Center
Associate Director, Innovative Finance and Program Development

Andrew Cross
IFC
Deputy Treasurer, Asia and Pacific

Scott Dunn
AECOM
Senior Vice President

Amos Garcia
Milken Institute Asia Center
Associate, Research

Mark Alexander Giblett
World Bank Group
Senior Infrastructure Finance Specialist

Brad Gordon
APAC Infrastructure Managers
Co-Founder and Partner

Jingdong Hua
IFC
Vice President and Treasurer

John Hunter
Milken Institute
CFO

Varut Kajonvakin
Thailand Government Pension Fund
Assistant Secretary General

Rana Karadsheh
IFC
Country Manager, Singapore

Kuk Khim
National Pension Service, Korea
Senior Portfolio Manager

Bhupesh Kumar
Temasek Holdings, Singapore
Director, Portfolio Management

Sze-Liang Lee
Monetary Authority of Singapore
Deputy Director, Financial Markets and Solutions, Financial Markets Development

Matthew Lim
GIC Private Limited
Senior Vice President, Singapore

Kevin Lu
Partners Group
Partner and CEO, Singapore

Caitlin MacLean
Milken Institute
Director, Innovative Finance

Andrew Major
HESTA Super Fund, Australia
General Manager

Kevin Martin
USAID
Field Investment Officer,
Regional Development Mission for Asia

Michael Milken
Milken Institute
Chairman

Yingyong Nilasena
Government Pension Fund, Thailand
Deputy Secretary General, CIO

Vivek Pathak
IFC
Regional Director for East Asia Pacific

Cesar Purisima
Milken Institute Asia Center
Asia Fellow; Former Secretary of Finance, Republic of the Philippines

Victor Sassoon
Coffee Bean and Tea Leaf, Singapore
CEO

Jordan Z. Schwartz
The World Bank Group
Director, Singapore Infrastructure and Urban Development Hub

Michael Stirling
Stirling Infrastructure Partners Ltd
CEO

Lena Sun
Milken Institute
Princeton-in-Asia Fellow

Geoffrey Tan
Overseas Private Investment Corporation
Managing Director, Asia-Pacific

Premod Thomas
Clifford Capital
Head of Corporate Strategy, Singapore

Staci Warden
Milken Institute
Executive Director, Center for Financial Markets

Chi Chung Wong
AECOM
Executive Vice President, Global Head of China Overseas Investment Program

Mei Yi Poh
Singapore Economic Development Board
Senior Officer

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1250 Fourth Street
Santa Monica, CA 90401
Phone: 310-570-4600

1101 New York Avenue NW, Suite 620
Washington, DC 20005
Phone: 202-336-8930

8 Marina View #15-05 Asia Square Tower 1
Singapore 018960
Phone: 65-6636-2507

E-mail: info@milkeninstitute.org • www.milkeninstitute.org