Infrastructure Financing in Asia

Edited by Bambang Susantono, Donghyun Park, and Shu Tian

Book Description, Table of Contents, and Chapter Summaries

Book Description

First, the book documents the evolution of Asia's infrastructure over the past half-century and reviews existing literature on the role of infrastructure investment in supporting growth and social development. It highlights the implications of tax financing and mass transit investments on land and property values and infrastructure financing. It then examines Asia's current practices and new solutions that can help meet the infrastructure gap. It discusses the role of institutions, how innovation can foster energy infrastructure investments, and the role of bond markets in infrastructure investments. The book explores ASEAN+3 efforts in developing local currency bond markets to provide long-term local financing for infrastructure investment while providing financial resilience, and examines the use of green bonds to finance sustainable growth in Asia.

In summary the book:

1. Contains comprehensive analysis of infrastructure financing in developing Asia
2. Highlights the role of developing local currency bond market as support to long-term infrastructure investments

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About the Editors

Bambang Susantono is the Vice-President for Knowledge Management and Sustainable Development of the Asian Development Bank (ADB) since 2015, providing strategic leadership to ADB's knowledge and research agenda. Prior to this, Dr. Susantono was the Acting Minister, and Vice-Minister of Transportation of Indonesia, and Deputy Minister for Infrastructure and Regional Development at the Office of Coordinating Ministry for Economic Affairs. He holds a PhD in Infrastructure Planning, master's degrees in Transportation Engineering, and City and Regional Planning from the University of California Berkeley with a bachelor's degree in Civil Engineering from the Bandung Institute of Technology.

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Book Chapter Summaries

The Role of Infrastructure in Asia's Development

In "The Role of Infrastructure in Asia's Development", Abiad, Hasan, Jiang and Patalinghug chronicle the evolution of infrastructure in developing Asia over the last half-century to examine the role infrastructure has played in supporting economic development. They find wide diversity in the region, with different countries taking different approaches to infrastructure planning and implementation, and thus differing in the amount and quality of capital stock they have built up through the years. The authors estimate that developing Asian economies will need to invest greater than 5% of their GDP over the next decade or so to meet future infrastructure needs, in terms of both building new capacity and maintaining and replacing existing structures. With many, if not most, of the countries in the region investing much less than that amount, financing infrastructure to maintain economic growth remains a tough challenge. Policy changes have to be made to bridge the infrastructure gap, such as through public finance reforms to widen the fiscal space; exploration of innovative financing methods, including land value capture and capital recycling; institutional and regulatory reforms to create a stronger enabling environment for public-private partnerships; and further deepening of the region's bond markets to unlock long-term funding by institutional investors.

Why Institutions Matter for Closing Asia's Infrastructure Financing Gap

In "Why Institutions Matter for Closing Asia's Infrastructure Financing Gap", Hampel-Milagrosa Quiao argue that to increase private sector participation in infrastructure investment financing, countries in the region would need to mitigate uncertainty and increase bankability of projects by creating an institutional environment that offers an acceptable balance of risk and return. In their discussion, they chronicle evidence suggesting that there are specific types of institutions that work best with specific types of infrastructure financing modalities. Successful use of Land Value Capture, for example, would require upholding the rule of law on property rights and implementing a reasonable taxation strategy, while effective Public Private Partnerships (PPP) would need dedicated policies, tailor-made regulations and PPP units to succeed. Similarly, having a long-term national sustainability policy would greatly encourage investment in green bonds for sustainable infrastructure, and government guarantees would help attract institutional investors, who tend to be highly risk averse, to include public infrastructure in their portfolios. The authors believe that a stronger focus on creating enabling institutions is essential to close infrastructure deficits, noting that for private investment in infrastructure to pour into a country, government reform should concentrate on creating institutions that would work best for the type of private investment it wants to attract.

Infrastructure Financing, Growth and Development: Theory Versus Empirical Evidence

In "Infrastructure Financing, Growth and Development: Theory Versus Empirical Evidence", Peters, Tian, and Villaruel conduct a careful study of the available theoretical and empirical literature on the impact of infrastructure on economic growth and development. They find that while the positive influence of infrastructure on growth is undeniable, the effect on development and inequality remains unclear. They note that without setting concrete policies focused on achieving improvements in the latter outcomes, positive spillovers from infrastructure projects would not automatically occur. In light of this, governments of emerging and developing countries are urged to acquaint themselves on the latest policy-driven research on how infrastructure investment can help promote development, reduce inequality, and generate sustainable growth. The authors broach the idea of independent infrastructure investment platforms at the national or regional level that could gain the interest and trust of institutional investors, sovereign wealth funds, pension funds, and insurance companies alike, to generate a greater amount of financing for much-needed large-scale infrastructure projects. Such platforms, envisioned to be internet based and capable of handling seamless exchange of information, would help facilitate transparency, improve governance, encourage spending reforms, and in the case of national platforms, ultimately lead to better communication and coordination between and central and local governments.

Spillover Capturing Tax Revenue Financing for Infrastructure Projects: Implications for Asia

In "Spillover Capturing Tax Revenue Financing for Infrastructure Projects: Implications for Asia", Hyun and Yoshino explore the potential of alternative arrangements for private financing of infrastructure in the region that capture both direct and indirect effects of newly developed infrastructure—that is, the benefits from the project itself and the economic activity the project generates in its locality. These funding innovations include tax increment financing (TIF) bonds, GDP-link bonds, stapled securities, and (other) spillover capture tax financing modalities. While these new funding arrangements exist in varying forms, the authors argue that they essentially offer the same solution, which is to tap heretofore untagged finances due to lack of measurement, evaluation, and authorization. Bonds that additionally capture economic growth and tax revenue spillovers of infrastructure projects are especially promising, as they can enhance returns received by bondholders, thus attracting private investment in infrastructure that would not otherwise have been developed. Authors claim such financial instruments could also help reduce the likelihood of default of long-term infrastructure projects, or at least not worsen it, as investors have the incentive to closely monitor project performance in order to preserve their earnings. Through such innovative schemes, governments can therefore raise funds without fully carrying the risks and responsibilities commonly associated with the financing of infrastructure projects.

Infrastructure as Policy Tool for Human Capital Formation and Inclusive Growth

In "Infrastructure as Policy Tool for Human Capital Formation and Inclusive Growth", Peters ruminates on the role of infrastructure in fostering robust growth. The chapter raises the argument that investing in infrastructure—especially in social infrastructure such as school buildings, hospitals, basic roads, and electricity—serves as an important prerequisite for human capital formation and, in turn, long-term sustainable and inclusive development. Problems of unequal access to social and economic infrastructure networks beset low-income countries, in particular, restricting human capital development and worsening inequality in those areas. The author laments/notes that financing infrastructure projects remains the biggest challenge in such countries, where perceived investment risks are much higher compared to more advanced economies. As such, the main challenge for governments would be to find innovative ways to finance much-needed social as well as economic infrastructure, particularly those that can attract private sector participation. These financing arrangements would require creativity and collaboration of players, including those in the financial markets (e.g., long-term institutional investors and investment funds), development finance institutions, and multilateral development banks. This is seen as a promising strategy not just to ease the infrastructure investment burden of the public sector, but also to capitalize on the global savings glut that exists today.

Meeting New Financing Realities in the Era of Smart Grids: Implications for Energy Infrastructure Investments in Asia

In "Meeting New Financing Realities in the Era of Smart Grids: Implications for Energy Infrastructure Investments in Asia", Yang and Park discuss the transformation of energy infrastructure via the adoption of smart grids across the globe, with East Asia shown to be playing an increasingly important role in the smart-grid revolution. Such innovations, which offer noteworthy benefits in terms of cost savings due to greater flexibility and efficiency, are expected to pave the way for modern energy infrastructure investment in the region. The chapter provides detailed accounts of how smart grids and smart energy systems have been able to generate these benefits and ultimately contribute to sustainable electrification in locations in a diverse sample of countries comprising Singapore, Thailand, and China. The authors note, however, that a country will need to undertake regulatory and other policy reforms compatible with the emergent market design and new business models to make the most of smart grid technologies. Regulatory challenges will include issues related to third-party access to transmission and distribution networks, the apportionment of incentives to capital-heavy versus asset-light energy solutions, and the appropriate pricing of power, one that ideally reflects the value created by smart technology. To fund future energy infrastructure investments, the authors emphasize that innovative financing methods such as through green bonds, crowd funding, and securitization will also be needed.

Infrastructure Bond Market Developments in Asia: Challenges and Solutions

In "Infrastructure Bond Market Developments in Asia: Challenges and Solutions", Hyun, Park, and Tian investigate the factors influencing the growth of infrastructure bond markets in the region as well as the impact of initiatives seeking to expand such markets in Europe. Empirical estimations presented in the chapter show that an economy's size, as measured by GDP, tends to be positively correlated with infrastructure bond market development, highlighting the need among developing Asian economies to reach the minimum efficient scale required for deeper and more liquid markets. The authors believe that bond market standardization and harmonization through the ASEAN+3 Bond Market Forum are steps in this direction, as they facilitate the integration of individual Asian bond markets, which are often small and fragmented. The estimations in the chapter also indicate that, based on the results on Europe, making the effort to similarly enhance the credit quality of project bonds could help spur the expansion of Asian infrastructure bond markets. Again, ASEAN+3 has already taken a step in this direction through the regional Credit Guarantee Investment Facility, which now provides guarantees for infrastructure bonds. With the region's infrastructure bond markets still at an early stage of development and the number and value of issuances falling far below needed investment levels, the authors argue that the time is opportune for Asian countries/economies to further strengthen regional initiatives to promote these markets.

Local Currency Bonds and Infrastructure Finance in ASEAN+3

In "Local Currency Bonds and Infrastructure Finance in ASEAN+3", Castillejos-Petalcorin, Park, Puongsophol, Tian and Yamadera investigate why local currency bond financing is not more widely adopted for infrastructure projects in Southeast Asia despite their known advantages in terms of providing longer-term funding and enhancing financial stability. They survey the various ways financial markets within the region, and outside of it, were able to successfully widen the use of bond financing to fund infrastructure development. They find that the fundamentals needed to bolster growth in infrastructure financing are essentially the same as those needed to promote public-private partnerships (PPPs), which represent the bulk of global private investment in infrastructure, and to develop the domestic currency bond market overall. These include a robust legal and institutional framework for PPPs, a modern legal framework and adequate market infrastructure for bonds, and the development of a critical mass of domestic institutional investors willing to invest in diverse infrastructure-related financial products. Promoting less conventional instruments like project bonds would additionally require building experience and expertise in the region among all financial market participants (from issuers to credit rating agencies and domestic institutional investors), which may be achieved through strategic international partnerships, and mechanisms that could lessen the perceived risk of investors such as through government sponsorship of some infrastructure projects and greater availability of credit enhancements.

Infrastructure Financing in South Asia

In "Infrastructure Financing in South Asia", Arao and Jha examine the state of infrastructure and the diverse issues surrounding infrastructure financing in the region. Infrastructure services remain of inadequate quantity and quality, according to their study, hence serving as a major deterrent to investment and economic growth. The authors emphasize that the large infrastructure needs of South Asia would require greater efficiency of public spending and a leveraging of the private sector through public-private partnerships (PPPs) or similar arrangements. Each source of infrastructure financing, however, comes with its own set of challenges that need to be addressed—corrupt practices being the most endemic in the case of public provision, and the complexity and long-term nature of PPP contracts, which tend to limit the participation of private firms in the absence of strong legal and regulatory frameworks, in the case of private participation. The chapter's empirical investigation of the drivers of infrastructure investment seem to confirm these observations with institutional variables such as governance quality emerging as significant determinants of both public and private infrastructure spending. In a financial environment where banks tend to dominate, credit access also emerges as an important factor, prompting the authors to push for greater deepening of the region's capital markets to efficiently channel savings to productive infrastructure for sustained growth.

Green Local Currency Bonds and Infrastructure in ASEAN+3

In "Green Local Currency Bonds and Infrastructure in ASEAN+3", Castillejos-Petalcorin, Park, Puongsophol, Tian, and Yamadera focus on green bonds as a way to finance the infrastructure needed by the region to meet its sustainable development goals. They examine how green bonds differ from conventional bonds and try to identify the different drivers of green bond growth. They also investigate why such securities have tended to develop less rapidly in Southeast Asia compared with more advanced regions such as Europe and North America and even to countries in the broader Asian region such as the People's Republic of China (PRC). Among the reasons cited by the study for the difference in the pace of market development include the absence of a clear and comprehensive policy framework for green bonds closely linked with national policy goals in some ASEAN countries and simply being in the early stages of financial development for most economies in the region. As with other innovative financial products, especially those denominated in domestic currency which increases the attached risk, prerequisites for advancement would be more developed markets and market infrastructure and more experienced and mature investors. The authors end the chapter by brainstorming ways to promote the development of green bond markets in the region, providing specific recommendations to leverage green bonds for infrastructure development in Southeast Asian countries.

The Empirical Evidence and Channels for Effective Public-Private Partnerships

In "The Empirical Evidence and Channels for Effective Public-Private Partnerships", Lee, Gaspar, Alano, and Han attempt to shed light on the multifaceted nature of these arrangements, and how they can positively influence the macroeconomy. They identify four major channels through which PPPs can boost a country's growth—namely, by improving access to infrastructure; building technical and institutional capacities and promoting good governance; strengthening the allocation of public resources; and attracting global private savings, such as those lodged in pension funds and sovereign wealth funds, into longer-term and more productive uses. PPPs purportedly strengthen the link between infrastructure and growth by emphasizing the quality of services delivered and the timeliness and efficiency of service delivery, aspects that traditional procurement tended to neglect. Private sector participation in infrastructure funding also helps to free up government resources for other more pressing public services, such as pro-poor interventions. The empirical analysis supports the discussion by showing a high association between PPPs and wider access to infrastructure as well as better infrastructure services, and also, between PPPs and economic growth and development outcomes. The authors note however that the positive influence of infrastructure PPPs on macroeconomic outcomes of a country critically depends on improvements made in its legal and regulatory frameworks. They further argue that these frameworks should be designed to promote social welfare, and not just the interests of the public and private sector partners in such arrangements.

Contributors

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