

7

The investment agenda

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Introduction

The purpose of this chapter is to examine the role of the international investment policy regime in facilitating foreign investment in Asia-Pacific countries, with attention to the delivery of connectivity services. It is argued there is a substantial agenda of work at the economy level but, in addition, there is a rich menu of additional options for regional cooperation to support these efforts.

The chapter proceeds as follows. The next section discusses key aspects of connectivity and its various dimensions. The origins of the demand for connectivity and some aspects of performance in the region are reviewed in the Introduction to this volume. The focus of this chapter is the supply side with respect to the provision of infrastructure. Various estimates are made of the difference, or gap, between the quantity demanded and that supplied. Some estimates of the scale of the 'gaps' are presented in the next section. The main interest here is the scope to mobilise private-sector investment to help fill these gaps.

To identify the impediments to private participation, the chapter concentrates on three sets of drivers of these gaps. One is the policy environment in which foreign investment decisions are made and, related to that, the processes of its implementation. The second set of drivers

relates to risks in infrastructure projects. The third set are factors that, if attended to, have been demonstrated to raise the rate of return on infrastructure projects.

The first of the drivers of this apparent gap are the policy barriers to investment in infrastructure. This includes the policy regime affecting foreign investment, which is outlined in section three, with attention to its elements, which contribute to connectivity. There is in addition a discussion of the nature of investment facilitation and the contribution it can make, including the priorities for attention in the course of regional cooperation.

There are also substantial risks involved in the relevant projects, which add to the actual cost of finance and help explain the reticence of investors to participate. This, too, contributes to the apparent gap between projected investment demand and current levels of investment. Section four contains some talking points about these risks that are specific to investments related to connectivity, including the cooperation of private and public-sector investors, the treatment of security issues and the political economy of success.

The third set of factors are those that might raise the returns on investment. Topics of attention in this chapter in that respect are the importance of coordinating network designs and the role of complementary services-sector policies.

The conclusion of the chapter discusses the consequences for regional cooperation.

Spending and gaps

Closing the gaps identified in the Introduction chapter concerning connectivity performance in the region translates into large absolute amounts of investment. Elek and Findlay (2019) review the methodologies involved in estimating the scale of these gaps in investment. An example of this work is that of the Asian Development Bank (ADB 2017b), which includes estimates of the demand for infrastructure according to projections of various macroeconomic indicators. The result is a gap between likely demand and current spending levels, across the period 2016–20, of 2.4 per cent of GDP for all members (the value of the gap

is US\$459 billion per year). This is higher than earlier estimates because of an adjustment for climate change. When China is excluded from the country list, the gap rises to 5 per cent of GDP. The bulk of this relates to transport and telecommunications as well as power (ADB 2017a).¹

The ADB (2017b) reports that currently 90 per cent of this investment is undertaken by the public sector. It also estimates that, with fiscal reforms, the member economies might close half the estimated gap, but the balance would have to be found by the private sector. Over the period 2016–20, a response by the private sector would involve an increase in spending from \$63 billion a year to \$250 billion a year.

The Organisation for Economic Co-operation and Development (OECD 2018: Ch. 3) examines the financing of transport infrastructure for connectivity. Its estimate is that, worldwide, US\$315 billion a year is spent on this infrastructure in developing countries. Of that, governments finance about 80 per cent, the private sector 15 per cent and overseas development funding (ODF) about 5 per cent. The OECD estimate is that, to meet the United Nations' Sustainable Development Goals, this spending on transport must increase by US\$440 billion a year. In 2014–15, most private-sector investment was in roads in upper middle-income countries and in Latin America. The OECD attributes the private sector's interest in roads to the capacity to earn revenue via toll fees. ODF is also spent on roads, but more so in lower-income economies. Airports are popular with private investors and railways and ports less so, so those activities have a higher share in ODF spending (OECD 2018: Fig. 3.2). A relatively small share of private-sector investment occurs in Asia. A small proportion (5 per cent) of ODF is applied directly to mobilise investment from the private sector (this does not include the provision of guarantees) but the amount mobilised is a tiny share of total expenditure.

Governments are already financing a high share of spending on infrastructure assets that support connectivity. The question is how private-sector funds, internally and from the rest of the world,² can be mobilised to fund socially valuable projects. There are examples of economies, such as Australia's, where such funds (for example, accumulated for retirement incomes) have been mobilised for long-term investment in infrastructure,

1 A small proportion applies to water and sanitation.

2 These might include funds publicly managed, such as public-sector retirement funds in high-income countries.

such as airports, ports and roads (Bowditch and Noble 2018). There appears to be space for the private sector to make this contribution, since the amount likely to be involved is small relative to the current and prospective volumes of funds under management.³ There also appears to be an incentive to participate, given the rates of return on alternative investments and the prospective value in connectivity projects, according to the benefits identified earlier in this volume.

Investment policy and facilitation

Barriers to private-sector participation in infrastructure projects include matters of both policy on investment in relevant connectivity projects and the management of those policies. Reform of the former is a matter of the liberalisation of investment policy and the latter refers to investment facilitation. These are now discussed in that order.

Investment liberalisation

Investment in infrastructure, whether from foreign or domestic sources, tends to be regulated because of the concern that investors will accrue a significant degree of monopoly power if their project proceeds. There have also been concerns about access to the services of infrastructure, especially among residents in less densely settled areas or those with lower incomes. These efficiency and equity objectives have driven the forms of intervention, such as public provision. There are new approaches to these problems, which are discussed below.

Meanwhile, there are additional concerns in host economies about foreign investment in these sectors, including the transfer of profits offshore, the security of access to infrastructure at times of national emergency and protection of domestic providers of construction, management and operation services. These concerns have led to the imposition of a variety of specific policy measures related to foreign investors, such as:

- foreign equity limitations
- screening or approval mechanisms

3 Berger et al. (2019) quote an estimate of PWC that 'funds under management' will rise from US\$100 trillion to US\$145 trillion by 2025.

- restrictions on the employment of foreigners as key personnel
- operational restrictions—for example, restrictions on capital repatriation or landownership.

These are the elements of the OECD's Foreign Direct Investment (FDI) Regulatory Restrictiveness Index, and values of this index are reported in Table 7.1 for Asia-Pacific economies in the sectors of transport, communications and electricity. Scores range from zero to one, with higher scores indicating a more restrictive regime. The OECD average score is also shown and cells are shaded when the score exceeds the OECD average. The majority of cells are shaded—that is, these economies operate relatively restrictive regimes in these sectors. The main contributors to these scores are equity limitations and, in some cases, screening or approval systems. The first step in seeking to mobilise private funding—particularly now in communications—is to review these impediments. There is further discussion of this question in later sections.

Table 7.1 OECD FDI Regulatory Restrictiveness Index

Sector	Electricity	Transport	Communications
OECD members			
Australia	0.20	0.27	0.40
Canada	0.10	0.25	0.56
Japan	0.03	0.28	0.27
South Korea	0.42	0.51	0.33
Mexico	0.10	0.51	0.10
New Zealand	0.19	0.27	0.39
United States	0.20	0.55	0.11
OECD average	0.12	0.21	0.08
OECD non-members			
Cambodia	0.01	0.04	0.01
China	0.09	0.41	0.75
India	0.06	0.09	0.18
Indonesia	0.11	0.43	0.26
Lao PDR	0.16	0.23	0.08
Malaysia	0.50	0.30	0.38
Myanmar	0.01	0.01	0.01
Philippines	0.37	0.66	0.65
Vietnam	0.01	0.53	0.58

Source: OECD (n.d.).

Investment facilitation

Hamdani (2018: 1) says investment facilitation

concerns the application of investment policy. It is not about the right to regulate or to formulate investment law. It is not about investment protection, policy liberalization or even investment promotion. Rather, it is a downstream activity that involves engagement with investors and other stakeholders in the application of policies in practice. Such interaction improves the efficiency and efficacy of the overall investment process. (p. 1)

Novik and de Crombrughe (2018) explain that the notion of investment facilitation is related to that of trade facilitation, which concerns the design of procedures for trade. They also stress that investment facilitation (making it easier for investors to establish and operate) is a broader notion than investment promotion (which is about marketing an economy as an investment destination). Berger et al. (2019) say investment facilitation should concentrate on practical aspects and technical measures, such as improving transparency and predictability, streamlining procedures and enhancing coordination between agencies. It should not include ‘controversial and polarizing areas of market access, investment protection and investor–state dispute settlement’. They say it ‘should not be conceived in such a way that it restricts the policy space of national governments’. They also observe that the design of investment facilitation measures can draw on the experience of the development of ideas about and the success in developing agreements with respect to trade facilitation (Berger et al. 2019; see also Wu 2018).

The OECD says investment facilitation provides ‘investors with a transparent, predictable and efficient regulatory and administrative framework’ (Novik 2017). Examples of measures listed by the OECD include tools, policies and processes.

Tools:

- one-stop shop or single window for incoming investors
- online business registration system
- information portal on legal and administrative procedures to start a business
- client service charters for all authorities dealing with investors
- systematic ‘aftercare’ services for existing investors.

Policies:

- sound, transparent and consistent legal framework for investment
- regulatory measures to simplify/streamline administrative procedures
- policy measures to ensure investments are responsible and sustainable
- good governance laws and mechanisms.

Processes:

- public–private dialogue
- interagency coordination
- capacity-building for public officials
- monitoring and evaluation of existing tools, mechanisms and policies.

The OECD also points out that investment facilitation can be considered at several levels. First, there are actions that can be implemented by national governments; second, there are measures that can be included in trade and investment agreements; and third, there is scope to develop a multilateral agreement. There is an argument that the application of investment facilitation measures will improve the business environment for domestic investors as well (Berger et al. 2019). Japan is a leader in this respect, both in terms of inward FDI flows to Japan (JETRO 2018b) and in the treatment of the topic in regional trade agreements (METI 2010).

The World Trade Organization (WTO) has been working on investment facilitation in general, following the endorsement of that work program at its ministerial meeting in December 2017 by 70 members. Meetings of the ‘Structured Discussions on Investment for Facilitation for Development’ followed (from March 2018), to develop a multilateral framework on investment facilitation, involving about 100 members.⁴ Berger et al. (2019) argue that middle-income countries are relatively more important in this work than in the overall WTO membership, with

⁴ Brazil has offered a draft of an agreement (accessed from: www.ictsd.org/bridges-news/bridges/news/brazil-circulates-proposal-for-wto-investment-facilitation-deal [page discontinued]). This includes clauses on national focal points, the use of a single electronic window for the submission of documents by foreign investors, establishing criteria and performance indicators for the processing of applications, setting up an appeal process and publishing all documents relevant to FDI projects. The draft reiterates the importance of the most-favoured nation application of the elements of the agreement and the ‘right to regulate’.

fewer developing countries participating.⁵ Opening a session in March 2019, then WTO director-general Roberto Azevêdo summarised progress to date by reporting that the focus was now on:

1. improving the transparency and predictability of investment measures
2. streamlining and speeding up administrative procedures and requirements
3. enhancing international cooperation, information-sharing and the exchange of best practices
4. exploring technical assistance and capacity-building support
5. looking at how this topic relates to other issues in the global economy—including, for example, the challenges faced by smaller businesses.

Work was to proceed by sharing examples in all these areas.

With respect to the WTO work program, Berger et al. (2019) call for more attention to the scope of investment facilitation and more empirical work on its impact (following the model of the approach to making the case for an agreement on trade facilitation). They suggest mapping domestic policies and procedures affecting facilitation. They also discuss how to engage more WTO members in the discussion (through the provision of capacity-building, adoption of the principle of special and differential treatment and confirmation of the right to regulate and pursue their own public policy goals) and how to make the discussions more transparent (by involving other stakeholders).

Berger et al. (2019) identify several actions that would facilitate investment, including a focus not just on the entry phase but also on the conditions after establishment. They argue that a good facilitation system will anticipate issues and thereby reduce the number of disputes. Other principles they endorse include the adoption of a whole-of-government approach in the host country, the engagement of source countries of FDI flows (noting those governments are beginning to issue guidelines for offshore investment), the application of any systems on a multilateral and most-favoured nation basis and the development of processes of capacity-building.

5 The United States is not a signatory, nor are India, Indonesia, the Philippines, Thailand and Vietnam.

The Asia-Pacific Economic Cooperation (APEC) forum also has a program of work related to investment facilitation (originally adopted by leaders in 2008). Its areas of focus are e-transparency, reducing investor risk and simplifying business regulation. Provisions related to investor risk include the opportunity for public comments on proposed changes to laws and regulations and establishing effective formal mechanisms for resolving disputes, while work on business regulation involves the use of single windows for investment matters (Bayhaqi and Crisologo-Hernando 2017).

Though strenuous efforts are made in these sorts of commentaries to separate facilitation and liberalisation, they are in fact connected. The complexities of the policies managing the processes of entry and operation determine the scope of the work on facilitation. Countries with screening processes, for example, will have more facilitation issues than those which do not. Investment liberalisation is a valuable complement to the facilitation of investment flows.

Risks in infrastructure projects

In this section, special features of investments associated with the provision of connectivity services are explored. These features, it will be argued, are linked to the perception of risk by investors in infrastructure projects, and these perceptions help explain the presence of an apparent gap between the expected and the actual investment flows in the sector.

Cooperation of public and private-sector investors

There are various ways in which private-sector⁶ engagement can be arranged—one as a source of funding and the other in combinations of project design, building and operations. The latter is also linked to the former. Some forms are simple versions of public procurement—for example, a construction contract. Of more interest here are those that involve investment by the private sector in the larger, longer-lived and more complex projects related to the provision of connectivity services.

⁶ 'Private' here means investors other than the government of the host country of the project, which could include sovereign wealth funds.

Infrastructure projects are complex and involve a series of stages (design, construction, ramping-up, operations), each of which entails a different type of risk. No one investor may be prepared to manage all those risks, and the participation of others creates the opportunity to allocate risk more efficiently. Investors may cover some risks related to decision-making outside their control only at a high cost, unless government provides some assurances. In this case, Arezki et al. (2016) suggest, for example, that risks associated with construction would sit with the private sector, risks associated with politics and regulation would sit with governments and demand risks might be shared. Private-sector firms might specialise in managing risks at different stages (for example, design versus construction). This allocation would translate into the forms of funding provided and the guarantees offered (for a discussion of the complexities involved in designing this allocation, see Arezki et al. 2016). The structure of funding would also account for the public good elements of a project. The allocations of responsibilities, financing and risks are the elements of public–private partnerships (P3s).⁷

Gurara et al. (2017) report that P3s in developing countries and emerging markets surged in the early 2010s but have since declined. They amount to about 0.4 per cent of GDP in both low-income developing countries and emerging market economies. Leading participants in Asia are Vietnam, Lao PDR and Bangladesh. In earlier periods, most P3s were in telecommunications, whereas that sector has generally moved to purely private provision. More popular now for P3s are electricity projects, and sometimes roads. Overall, the assessment of Arezki et al. (2016) is that the outcomes in terms of the use of P3s have been disappointing: the cost of capital has proved to be higher than expected relative to public funds, the public sector has borne more risk than expected and service quality expectations have not always been met. As noted earlier, the private sector (in all its forms of investment) contributes a minor share of total investment.

7 The World Bank (n.d.) provides information on options for P3s. Provision of funding for maintenance is often reported to be an issue in connectivity-related projects; when the constructor is the operator in the longer term, the P3 approach also helps manage the trade-offs between investment in better construction and later lower costs of maintenance.

The first suggestion by Gurara et al. (2017) to make progress on closing ‘the investment gap’ is to increase the productivity of public-sector management of infrastructure projects. They report considerable differences in ‘investment efficiency’ between countries, which they attribute to weaknesses in the institutions that manage public investment. They also report research that says that project productivity falls quickly with the number of projects under management, especially when that number accelerates above historical levels. They suggest, therefore, to not only look at the institutions involved in project management, but also schedule projects carefully. But, overall, Gurara et al. (2017: 18) say that, given its scale, ‘tackling the infrastructure challenge [is] inconceivable without a significant increase in private sector participation’.

Gurara et al. (2017) go on to argue that critical to private-sector participation is the development of the regulatory and institutional framework. One measure of the quality of this framework, and of the capacity to deliver infrastructure projects, is the Infrascope Index developed by the Economist Intelligence Unit (EIU).⁸ Table 7.2 shows the overall score for this index and those for two components: regulations and institutions. Other elements considered in the construction of the index are the extent of experience in engaging with the private sector, the business climate and the depth of local capital markets. The EIU (2018) concludes:

- Overall conditions are positive in the Asia-Pacific, with a high level of general interest in P3s, and with provisions available on selection criteria, conciliation and arbitration methods, and environmental assessments.
- Many economies have central government agencies for the purpose of engaging with the private sector but some could benefit from support in the design of systems and structures (based on the experience of others) to maintain the independence of those agencies and for the preparation of project proposals.
- There could also be improvements in transparency, arrangements for renegotiations and the treatment of unsolicited proposals, and interagency coordination.

⁸ The index is a ‘benchmarking tool that evaluates the capacity of countries to implement sustainable and efficient public–private partnerships ... in key infrastructure sectors’. The method involves scoring responses to a series of questions in different policy areas relevant to P3s (EIU 2019).

Table 7.2 Infrascopie Index scores, 2018

Rank	Overall score	Score/100	Rank	1) Regulations	Score/100	Rank	2) Institutions	Score/100
1	Thailand	83	1	Thailand	87	1	Thailand	97
2	Philippines	81	2	Philippines	85	2	Sindh Province	95
3	China	80	3	Indonesia	78	=3	China	94
4	India	77	4	India	77	=3	India	94
5	Gujarat State	75	5	Sindh Province	74	=3	Philippines	94
6	Sindh Province	67	=6	China	70	6	Bangladesh	90
=7	Bangladesh	66	=6	Gujarat State	70	7	Pakistan	88
=7	Vietnam	66	8	Bangladesh	65	=8	Gujarat State	86
=9	Indonesia	61	9	Timor-Leste	64	=8	Kazakhstan	86
=9	Kyrgyz Republic	61	10	Kyrgyz Republic	63	10	Vietnam	84
=9	Pakistan	61	11	Vietnam	61	11	Kyrgyz Republic	82
12	Kazakhstan	58	12	Georgia	58	12	Timor-Leste	73
13	Mongolia	54	=13	Kazakhstan	54	13	Mongolia	71
14	Georgia	48	=13	Mongolia	54	14	Indonesia	53
=15	Armenia	45	15	Armenia	51	15	Tajikistan	43
=15	Sri Lanka	45	16	Pakistan	47	16	Sri Lanka	36
17	Timor-Leste	44	17	Tajikistan	43	17	Georgia	8
18	Tajikistan	41	18	Sri Lanka	30	18	Armenia	5
19	Papua New Guinea	28	19	Papua New Guinea	27	19	Papua New Guinea	0

Source: EIU (2019).

The top performers according to this index are Thailand, the Philippines, China and India.⁹ Below them, Vietnam and Bangladesh are ranked together, and Indonesia follows that group, ranked equally with Pakistan. Performance by area varies by country, to which the EIU draws attention. The overall score is highly correlated with the national P3 amount (Gurara et al. 2017: Fig. 14) and with a measure of the quality of trade-related and transport-related infrastructure.

The OECD (2015) has produced a checklist for success in the application of P3s that includes:

- An investment regime that is clear and predictable.
- A good process for selecting projects eligible for private participation.
- Access to a wide set of sources of finance.
- Transparency and competition in the procurement regime.
- Better governance of state-owned enterprise partners in projects.
- Unbundling infrastructure systems to carve out those that are competitive and maintaining regulation of those that are not.

Infrastructure projects supporting connectivity could be funded out of current government spending or over time through payments by future taxpayers. They can also be funded by user charges, which are always controversial since there are arguments about whether all consumers will have access to services.¹⁰ Historically, the response to this issue has been to maintain the service provision within the hands of a state-owned monopolist who cross-subsidises services. More efficient, however, is to split out the community service obligations (and other public good elements) as separate contracts, open markets to private providers and deal with any market power issues following unbundling through the operations of a regulator. The OECD (2015) therefore adds to its list:

- establishing an independent regulator
- aligning prices with costs
- identifying dedicated funds to finance universal service requirements.

9 See Llanto (2016) for discussion of the development of the P3 framework in the Philippines and the scope to improve by taking actions of the type listed by the EIU and from an OECD report referred to below.

10 As Arezki et al. (2016) point out, toll revenues are not always well accepted and, as the project proceeds, may reinforce the risk of a 'holdup' by government.

There will be challenges in moving towards this model of unbundling and private (including international) provision, even in monopolised components, combined with regulation and community service obligation funding. Political resistance to change in this direction will be one element—for example, based on the concern among citizens about the motivation of the service provider and a perception of their lack of attention to the interests of consumers.

Bowditch and Noble (2018) suggest that a complement to a reform program of this type is to adopt a set of principles related to ‘customer stewardship’. This involves a deeper, more structured and continuing interaction with users of services. The outcome, they argue, will be a greater willingness to pay for services because of a better appreciation of the value being created. There should also be greater trust that funds raised in this way are invested in the social interest. This way of thinking also allows providers to ‘go beyond the contract’ and to design and offer innovative solutions to shifts in user demands, whereas static performance indicators will not produce this outcome. As noted earlier, over the lifespan of assets involved in the provision of connectivity services, the mix of services in demand in the full-cost framework is highly likely to change. The application of 5G technology creates an opportunity to renovate roads to make them ‘smarter’ (HighwaysIndustry 2019). Bowditch and Noble (2018) argue that infrastructure ‘done well should be constantly evolving’.

Bowditch and Noble (2018) offer examples of mechanisms by which a commitment to customer stewardship could be implemented. One takes the form of a price regulator asking the regulated firm in its submission on pricing to explain how it has delivered value to its customers, the answer to which depends on the quality and depth of the interaction the firm has with its clients. Another is an ‘app’ provided by a toll-road business to allow clients to compare the options of using their services or not using them (via off-tollway roads), and hence the savings in full-cost terms from paying the toll. New reporting systems will be required for other forms of infrastructure that do not involve regular transactions related to their use, and where the value includes providing an option to the consumer or a contribution to a desirable attribute of the community. Bowditch and Noble (2018) propose that customer stewardship involves a commitment to connectedness (across services, discussed further in the next section), providing information to consumers to assist the revelation of their preferences (ideally involving schedules of prices and options of quality mixes), an ability to adapt over time and transparency. Operating in

this manner, they reiterate, provides more business opportunities for the service provider than does retaining a fixed list of performance indicators for which boxes are ticked (or not).

Security issues

Given the scale of projects, the extent of their use and their longevity, there has always been a link between the provision of connectivity services and the security of the host economy. These services are critical to the continued operation of the economy when there is a conflict. They will also be elements of delivering support for the operations of defence forces around any conflict. Access to those services is therefore regarded as critical. This translates into a discussion about hosting relevant capacity—for example, cases in various economies have been made for the presence of an international airline ideally based in the home country, which at least can be commandeered if not also owned and operated by its citizens (Findlay 1985). Systems of protection of a ‘national carrier’ during normal circumstances were then justified to achieve that purpose.

The more modern version of this issue arises in the digital sector (Findlay 2019). For example, Chinese firm Huawei has high market shares in components of 5G telecommunications networks. While the firm is well regarded in its sector for its management and innovation, policy views differ, since Huawei has been involved in intellectual property disputes, allegations of breaking sanctions and of military associations, and of benefiting from government support. There is also concern about China’s National Intelligence Law, which says: ‘Any organisation and citizen shall, in accordance with the law, support, provide assistance, and cooperate in national intelligence work, and guard the secrecy of any national intelligence work that they are aware of.’

Many have therefore questioned the prudence of allowing Huawei to be involved in building 5G infrastructure. These commentators see risks of disruption, the consequences of which would be high given the likely ubiquity of the technology, or costs of abuse, such as siphoning off data. The United States has responded with bans related to imports of technology, which block the use of equipment from an adversary government. It also has added Huawei to its ‘Entity List’, which has the effect of banning exports to it and its affiliates.

At the time of writing, the outcome is not clear. This response could be a tactic by the United States to drive other outcomes, in which case the main consequence is the impact of uncertainty on the shape of supply chains. These will be chains linked to equipment, devices and services that are critical to connectivity. In a worst-case outcome, the world would divide into spheres of influence associated with different telecommunications standards. Connectivity would be high within but not between these spheres.

The most efficient solution, on the other hand, is to identify the risks and to cooperate on the design of regulatory or business responses to those risks. At the same time, it will be important to align those responses across economies to facilitate investment and trade (including data) flows. This is a matter for at least regional cooperation, the outcome of which can feed into global strategy.

Political economy of success

Large-scale provision of connectivity services is significant in the economy and, because of their scale, they can have important effects on its structure and on the location of activities. One effect is the diffusion of economic activity—that is, in the presence of ‘fixed factor endowments, the increased access to markets and ideas should benefit all regions’ (Banerjee et al. 2012). But, as Banerjee et al. (2012: 2) also explain, the fall in trade costs can have consequences in the opposite direction:

[T]ransportation infrastructure increases the access of rural regions to cities, and the well-known agglomeration effects of cities may cause productive capital and skilled labor to move from rural regions to cities over time, with the result that those who remain in rural areas receive very limited benefits from urbanization or even become impoverished. Along similar lines, it has been argued that the expansion of motor road networks in the United States promoted large-scale suburbanization and left many cities without a viable economic model. (p. 2)

The importance of these effects has been examined in a series of papers about the impact of high-speed rail in China (which is mainly applied to the movement of people). Ke et al. (2017) find that the gains are concentrated in existing transport hubs that are connected to the new network. Yu et al. (2019) find that high-speed rail connections to metropolitan centres

lead to reductions in GDP in peripheral but also connected prefectures, compared with unconnected prefectures, as a result of reductions in both productivity and capital inputs. This result is interesting in the context of neighbouring prefectures ‘fighting one another for a station along the HSR [high-speed rail] line’ in the design phase (Yu et al. 2019: 18). Other studies, in Japan, find different effects of high-speed rail by sector, with the service sector concentrated in urban areas and manufacturing moved to nearby areas (within 150 kilometres) where employment increased, while those areas further out declined in terms of employment (Li and Xu 2018).

Connectivity projects, given their scale, also face constraints on their location. For example, in China, most high-speed rail stations are built in suburbs, given the costs of land and of disruption in downtown areas. The consequences of their establishment on local economies and therefore the value of local fixed inputs like land can be significant. These effects then offer opportunities for the financing of the provision of these services, since their value is capitalised into the value of land in the vicinity of the major nodes in the network. When the service provider can capture that increment in value, they can finance the project (raise and repay debt, for example, or earn a return on their own equity) and do so much sooner than via a long stream of ticket revenue. Arezki et al. (2016) point to the example of the Hong Kong Mass Transit Railway (MTR), which is run by the MTR Corporation and is partly publicly owned. The corporation is also a landowner and the value of its landholdings appreciates as the network extends. The change in value that is captured by the corporation helps fund the extension of the system (Kembrey 2015).¹¹ Success here, however, depends on the competitiveness of the corporation as a land developer and access to land at the ‘pre-rail’ price.

Yet, as explained, the completion of connectivity projects also has the effect of shifting economic activity and most likely diminishing the value of assets held elsewhere and/or imposing costs of adjustment on members of the peripheral community who relocate. The response could be a political one, anticipating and resisting change in the first place or demanding other forms of compensation later.

11 The value increment can be captured in other ways. See City of Chicago (2010–21) for a discussion of tax increment financing, based on increases in property values.

Raising the returns on infrastructure investment

Some activities can be undertaken that, when successful, will add to the returns on infrastructure investment, thereby increasing the interest of private investors in such projects.

Coordinating network design

Connectivity involves a bundle of services. Consider the output of a factory moving goods to a customer at some distance. Mostly likely this will involve a road journey at each end as well as a longer journey by another mode in between. The physical movement will also be complemented by flows of data and finance, and possibly also by the movement of people (either during the setup of the transactions or in servicing them). As Bowditch and Noble (2018: 52) say:

Infrastructure is part of a system, and should be managed to give maximum efficacy to that system. Having a great airport or even a very fast rail corridor means little if the adjacent road and rail systems fail to connect with and work coherently with it. To have quality infrastructure, its connectedness is much more than just being physical, but also coordinated and integrated in its functions and values.

Those involved in managing connectivity will certainly take this multipart view: they will examine the full cost of the movement. They will not look at the road segment separately from others. They will also consider the coordination of the data flow with the movement of goods; indeed, they will expect to be able to monitor the good and its condition as it moves within the physical infrastructure. The adoption of standards that facilitate interoperability (from data devices to container sizes) is also important. In the private sector, the boundaries of the connectivity services business (or the alliances it creates), and what packages to put together to provide a perspective that the consumer values, will have to be considered.

The value of connectivity across systems has implications for the public and private sectors. A considerable amount of planning is valuable to produce the right project portfolio. No one person will be able to imagine all these options and there is value in using a market process in this context. This would involve a mechanism to accept unsolicited proposals from the market, not just as a result of tenders or requests for proposals.

Arezki et al. (2016) observe that the ability to raise finance for any one project depends on a whole network and the connectivity between its elements, as well as its density. They also argue that it would be valuable to bring in private investors who have a bundle of infrastructure assets at an early stage in the planning process. This is because they have a better idea of what a whole infrastructure network should look like. Furthermore, they argue that most P3s are now conceived at the national level, which does not take account of the externalities involved across borders. They argue that a role for the development banks is to facilitate the cooperation across governments and the participation of private investors in this way. An example is the work of the ADB in the Greater Mekong Subregion (ADB 2018).

The Belt and Road Initiative (BRI) illustrates the orders of magnitude involved. De Soyres et al. (2018) report that, within the BRI, trade costs will fall by an average of 3.5 per cent across bilateral pairs among the 71 members. But costs will also fall by 2.8 per cent, on average, in their trade with the rest of the world. Third parties also benefit from access to BRI infrastructure in their own bilateral transactions not involving BRI members. The average decrease worldwide (191 countries) in trade costs is 2.2 per cent. These are significant impacts, which is not unexpected given the number of members of the BRI and its geographic coverage. But de Soyres et al. (2018) also make the point of the significance of the spillovers involved in connectivity projects and the value of working to internalise them.

Complementary services

As is already evident, the successful operation of a network of providers of connectivity services will depend on access to such services. The performance of both public (for example, movements across borders) and private (for example, competition in the transport sector) providers matters. Several papers observe that not only the physical infrastructure, but also the quality of institutions matter. An example is the result of Francois and Manchin (2007)—who measure institutional quality by various characteristics of governance—that these variables affect both the levels of exports and the participation in exporting. Brooks (2016) stresses the importance of access to world-class logistics services, especially as the composition of trade changes.

The World Bank makes this point in relation to the BRI. De Soyres et al. (2018) argue that the benefits in terms of transit times and trade costs will only be captured if policy issues are also tackled—for example, border crossing and trade facilitation, logistics services (‘weak links’) as well as FDI regimes.¹² Baniya et al. (2019) examine the effects of a series of interventions proposed in the BRI on 71 participating economies. They find that these projects reduce trade times by up to 4.4 per cent. When in addition there are improvements in trade facilitation, trade times fall by up to 10.9 per cent. The positive effects of the BRI projects, they say, are magnified by the trade facilitation reforms. The effect on trade is growth of more than 7 per cent, which rises to 13 per cent when these changes are complemented by trade agreements that improve market access.

The provision of competitive complementary services therefore leverages the benefits created by good connectivity projects. Another way of saying this is to observe the fact that failure to liberalise these complementary services would allow the benefits created to be captured by service providers or wasted by inefficient government processes.

Conclusion

Projects designed to deliver connectivity services are highly prospective, since they offer significant reductions in the costs of the movement of goods, people and data, with subsequent benefits in terms of the costs of movements, trade flows, investment flows, productivity, growth and equity. Governments have been the major providers of funds for connectivity investment (of the order of 85 per cent); however, they face financial and human resource constraints on making further investments. Instead, the question is asked: what greater role can the private sector play in connectivity projects in the economies of the Asia-Pacific, including investors from offshore? If at least some part of the likely significant benefits can be captured, the projects become more ‘bankable’ and of more interest to the private sector. However, these sorts of projects are not easy to implement because of three sets of factors identified here: 1) policy barriers to investment, 2) risks associated with infrastructure projects because they are big, specific and long lived, and 3) loss of the opportunity to capture extra benefits through the management of networks or the

12 For further commentary on these policy issues, see the discussion in World Bank (2018).

provision of complementary policy change. Barriers to investment flows in general are an important element to consider, along with action to facilitate those flows. But of more interest here are the special conditions related to investment projects in infrastructure that facilitate connectivity.

With respect to the risks involved, the interest is not just in the scale of investment likely to be involved in providing connectivity services, but also in the lumpiness of these projects (such as a highway, a port, an airport). This situation incurs the risk of the abuse of monopoly power, which also draws the attention of governments and their regulators. Projects will in that case involve the interaction of investors with regulators, whose decisions have a significant effect on profitability. Technological change can, however, shift the significance of this aspect, as has occurred in the case of telecommunications.

There are also concerns about the consequences of connectivity projects for various user groups. The traditional concern was the provision of services to low-income or isolated areas. In addition, since these projects are large in scale, they can shift the location of economic activity and change values of assets such as land in participating locations, which offer financing opportunities. They also have significant redistributive effects within economies, which can trigger political reactions in anticipation of (thereby retarding), or because of, projects. The latter becomes of source of risk from the investor's point of view, depending on the government response to that reaction, including the scope to renege on previous commitments related to pricing, for example.

The scale of connectivity projects offers access to significant benefits, but it also exposes the host community to new risks. The impact of a disruption of a facility once constructed would have significant impacts on the economy. This is the security risk. This concern was always present, especially when the provision of services involved cross-border operations (as in aviation). With technological change and access to digital technology, it is becoming more evident in relation to modern telecommunications infrastructure. The concern is that foreign governments not only can 'cut off' services, but also can now 'reach in' to disrupt or capture them.

These projects are specific, since a facility built in one location need not be suitable for another. Consequently, implementation involves upfront work, conceiving of the project and then developing details, even before the case for execution can be made clear and finance is arranged. This early

stage demands significant human capital but also involves significant risks, which crystallise when a project does not proceed. Private-sector firms may have the capacity for project planning and access to international providers will offer a wider range of experiences, but the allocation of the risks involved will have to be clear if they are to participate.

Connectivity projects are long lived and, across the course of their lives, many conditions may change. Technology may change, shifting the way an existing facility might be managed (for example, the application of the Internet of Things to roads). Technological change can also shift the demand for connectivity services (for example, the growth of air freight relative to road or sea). The distribution of the costs and benefits of adjustment will affect the initial willingness of various parties to invest or, in other words, the efficiency of the distribution of risks associated with these changes should be considered upfront. A long-lived project is open to the risk of a government 'holdup' (driven perhaps by the consequences of projects for different interest groups), the risk of which will also deter private investors.

Finally, greater benefits are achieved when the complementarity between projects is recognised (such as data flow alongside goods movements) and the value of networking within and across countries is appreciated. Projects created in isolation of these considerations are likely to incur later add-on costs to capture the opportunities from better networking that become clear in hindsight. Failure to introduce reforms that facilitate the use of the infrastructure also involves lost opportunities and lesser returns than others to investment.

This is a significant bundle of issues for any national government to resolve to attract private investment. It is not surprising, then, that assessments by bodies like the OECD, the ADB and the International Monetary Fund indicate a big gap between the number of projects in the region that are likely to be socially valuable and those that are implemented. This draws attention to the ways in which investment flows might be facilitated.

There is a substantial conversation in progress about international investment facilitation in general. That conversation, including efforts in the WTO and APEC, as well as coverage of these issues in trade agreements, is relevant to projects related to connectivity. These include efforts to add to the transparency and consistency of policymaking in relation to international investment. But the characteristics just listed demand an additional layer of effort to deal with the issues that arise in

connectivity projects. The issues to be managed include the following, which comprise the ‘investment facilitation plus’ agenda for connectivity projects—that is:

- Organising the funding of work on and access to human capital for the development phase of projects, including attention to the productivity of government agencies involved in this work and the scope to engage the private sector.
- Paying strict attention to the economic benefits of projects and thereby the ability to repay borrowed or invested funds, and to good practice in procurement that produces projects at least cost.
- Building consensus on the value of projects to user communities (for example, adopting the ‘customer stewardship’ model), enhancing their willingness to pay for projects and hence their ‘bankability’.
- Achieving consistency over time in the operations of regulatory systems and giving attention to efforts to unbundle elements of the services chain that are competitive, especially as technology changes.
- Meeting obligations for universal services but also funding them directly and transparently.
- Recognising the risks of government holdup on long-lived projects and making commitments to manage that risk.
- Anticipating a distribution of the costs and benefits of adjusting to technological change, not only with respect to the facility itself, but also to its users, and how that changes their demands for services.
- Realising an efficient (least trade-distorting) approach to the treatment of security issues and the participation of foreign input providers.
- Maintaining a diverse set of sources of finance for projects, being clear about risks borne by the holders of different securities and checking the efficiency of the distribution of those risks among the parties.
- Paying attention to policy applying to complementary service providers, ensuring that restrictions in those policy regimes are not limiting the benefits created from connectivity projects or diverting those benefits to specific service providers.

Cooperation across borders is valuable in this context. In the first instance, there is value in learning from the experience of others in responding to these issues,¹³ but there are aspects in which additional and more specific

13 APEC (2018) has produced a guidebook on infrastructure investment that is an example of this level of capacity-building.

cooperation is useful. For example, cooperation—between agencies with economies and across borders—that introduces the perspective of global and regional networks in project design and selection, and which drives an outcome to capture its benefits, will be valuable. The ADB provides examples of this form of cooperation.

New models of cooperation have been suggested. For example, Arezki et al. (2016) discuss the role of an international platform that would facilitate private-sector investment. The managers of this platform are acting as an intermediary (or ‘making the market’) between governments and investors. A third party in the form of a development bank could play that key role in this platform.¹⁴ The services provided might be project design. Development banks can also contribute to the enforcement of contracts—for example, using their leverage to ‘tame opportunistic’ governments. Governments could also bring to the table their interest in greenfield projects; according to recent history, there has been a lack of interest by private investors in these compared with already operating projects, yet they are the projects ‘at the margin’ where significant benefits are to be captured. Allowing many projects to compete on a single platform reduces the risk that governments will ‘pick winners’ and make the wrong selection.¹⁵ Private investors would bring to the market a requirement for projects to be economically sound, access to funds and their various forms of expertise. The key feature of these platforms is the engagement of the private sector at their foundation.

A further development on these platforms might be greater consistency among or standardisation of projects, which would aid the application of securitisation methods to raise funding. Arezki et al. (2016) argue that progress in this respect provides advantages of diversification for investors, a lower cost of capital and higher liquidity.

This is an interesting suggestion for a mode of cooperation and the chapter concludes with observations about a number of questions that it prompts.

14 Arezki et al. (2016) observe that an advantage of the Asia Infrastructure Investment Bank (AIIB) is that it is a specialist infrastructure bank that could play the role of a development bank on the sort of platform they envisage. This includes the ability to fund larger projects and to coordinate across networks, adding to the ‘bankability’ of individual projects. It is a topic for further work of how much the AIIB is contributing or could contribute to the other items on the checklist of the ‘investment facilitation plus’ agenda.

15 An often-cited example is the government-promoted investment in railroads in the United States and the assessment by Fogel (1962) of the small increment in GDP compared with an extension of the canal system that might otherwise have occurred.

The first set concerns its direction and management. First, what is the ultimate goal—or vision of the outcome—of this cooperation? Some guidance might be, for example, taken from the goals of the ASEAN Master Plan on Connectivity (see Box 1 in the Introduction to this volume) to achieve a ‘seamlessly and comprehensively connected and integrated region’. Were this platform to be built in the East Asian region, its success is more likely when it has a clear set of ‘owners’—that is, those creating the expectations of outcomes, setting targets, receiving reports of progress and then responding. An obvious set of owners meeting these capacities are ministers from regional economies, involving ASEAN at least, with relevant responsibilities.

Second, further work would also be required on how this platform interacted with other forms of cooperation. There would be interaction with the BRI (see Chapter 2 in this volume) to consider, as well as the work in ASEAN on connectivity, as already mentioned. Other forms include the work by China and Japan to promote their cooperation in third countries, according to the principles of openness, transparency, economic viability and fiscal sustainability.¹⁶ The United States and partners Japan and Australia, building on cooperation among development banks including those of Singapore, Canada and the European Union, have formed the Blue Dot Network (US Department of State 2019: 16). Its purpose appears to be to facilitate investment via the certification that best practices have been adopted in particular infrastructure projects.¹⁷

Third, there is a concern that the platform model may be difficult to scale up, which is important given the orders of magnitude involved in the investment ‘gap’. Access to human capital is one issue, and Arezki et al. (2016) discuss how the private sector might also contribute to resolving that constraint. Compensation for inputs to the design of projects that do not proceed has to be considered; Elek (2018) points to a private-sector organisation that provides these services.¹⁸

16 See, for example, JETRO (2018a) and MOFCOM (2018).

17 McCawley (2019) provides a commentary on this initiative, including questions about the manner of its operation.

18 See InfraCo Asia’s website at: infracoasia.com.

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This text is taken from *New Dimensions of Connectivity in the Asia-Pacific*, edited by Christopher Findlay and Somkiat Tangkitvanich, published 2021 by ANU Press, The Australian National University, Canberra, Australia.

doi.org/10.22459/NDCAP.2021.07