# *Developing Infrastructure in Asia Pacific: Outlook, Challenges and Solutions*

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# Foreword

The role of infrastructure is critical to improving connectivity and promoting sustainable growth among the Asia Pacific economies. While much progress has been made in infrastructure development over the past few decades, a lot more needs to be done to provide adequate facilities for the region's people and to support greater cross-border flows of trade and investments.

There lies immense opportunities in infrastructure development in Asia Pacific economies but governments continue to under-invest and face challenges in getting infrastructure projects to market and attracting much-needed funds to finance those projects.

The infrastructure deficit across the emerging growth markets in Asia is very substantial – it has been estimated that between 2010 and 2020, Asia will need to spend approximately US$8 trillion[1] in order to maintain current levels of economic growth. The majority of Asian countries require very substantial amounts of spending to be directed towards infrastructure that will allow for growth in their economies. Power is needed to spur growth in manufacturing, water is needed to sustain industry and people, and transportation networks are required to facilitate the movement of raw materials, manufactured goods and people. Without these key ingredients, economies stagnate. Without sustained, intelligent investment in needed infrastructure, it is unlikely that the region would achieve its full potential. Every US$1 invested on infrastructure development is expected to yield additional increases in GDP by US$ 0.05 - 0.25[2] which implies growth by 5% to 25%. Development of infrastructure is also crucial for enhancing the trade competitiveness of countries. Quality and adequate infrastructure will ensure that costs of trade are reduced.

Mature economies like USA, Australia, Japan and Singapore face different types of challenges. Firstly, population growth, demographics and the need to develop infrastructure programmes that allow for good education, healthcare and a focus on providing housing for all become significant issues. Emerging economies do have similar needs for housing, public healthcare and education investment but prioritise economic infrastructure. Secondly, ageing infrastructure requires either rebuilding or refurbishment as mature economies inherit old infrastructure that has not had sustained investment.

One common theme across both mature and emerging economies is budgetary constraint – very few countries can rely solely on the government to fund necessary infrastructure, whether economic (power, utilities, transport) or social (public education or hospital facilities). Therefore, there is a great need to mobilise private sector capital that can be invested into infrastructure.

In this paper, I seek to provide an assessment of the outlook for infrastructure development in the Asia Pacific region, discuss solutions to the challenges facing the sector and share opportunities of which investors are encouraged to take advantage.

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1 *Asian Development Bank and Asian Development Bank Institute, 'Infrastructure for a Seamless Asia', 2009.*
2 *World Economic Forum and PwC, 'Strategic Infrastructure: Steps to prioritise and deliver infrastructure effectively and efficiently', 2012.*

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# *Outlook*

The Asia Pacific infrastructure market is expected to grow by 7% to 8% a year over the next decade approaching $5.36 trillion annually by 2025 and representing nearly 60% of the world total[3]. This also reflects growth in China's spending whose share of global infrastructure spending is expected to rise from 22% in 2012 to 37% in 2025. Following the global financial crisis in 2008 - 2009, the Asia Pacific region has seen significant increase in infrastructure investment; between 2009 and 2013, Asia Pacific region accounted for more than 50% of the global increase in capital spending.

There are a number of key drivers which will support the development of Asia Pacific's infrastructure programme over the coming decade or two.

3 *PwC, 'Capital Project and Infrastructure Spending: Outlook to 2025', 2014*

**Asia's economic prominence** – Asia is now the world's key growth engine. China, India and Southeast Asia offer a very large consumer base and low-cost workforce, with high levels of natural resources. China is becoming increasingly dominant on the world stage, growing in excess of 7% (previous years in excess of 10%), as it develops a sustainable economy that is expanding its reach globally. In Southeast Asia, the ASEAN Block is due to be formed in 2015. This will not only form an important economic counter-balance to China but also allow for more effective trade between ASEAN countries, making them more competitive internationally.

Both China and the ASEAN Block require large amounts of infrastructure investment in order to deliver a growth dividend. Substantial incremental growth could be achieved if ASEAN markets were better connected with each other as well as with China – improved connectivity across infrastructure (transportation networks), better communication networks and more open trade regulations could allow for a growth premium.

**Table: Annual GDP growth rate of selected countries in 2012**

| Country | Annual GDP growth rate |
|---|---|
| India | 4.7% |
| Indonesia | 6.2% |
| China | 7.8% |
| Vietnam | 5.2% |
| Philippines | 6.8% |
| Thailand | 6.5% |
| Cambodia | 7.3% |
| Lao PDR | 7.3% |

*Source: World Bank, 2014*

**Trade competitiveness** – Asia Pacific economies play a significant role on the world economy. China holds the second largest share of 8.1% in the world's total export share. The share of India is 1.7% and the combined share of Indonesia, Malaysia, Philippines, Thailand and Vietnam is 4.7%[4].

**Table: Share of world trade of selected countries in 2012**

| Country | Share of world trade |
|---|---|
| China | 8.1% |
| India | 1.7% |
| Indonesia, Malaysia, Thailand, Vietnam and Philippines | 4.6% |
| Total | 14.5% |

*Source: World Bank, 2014*

These economies also have important trade links among each other. In 2012, intra-ASEAN trade amounts to 24.3% of their total trade volume[5]. In the same year, ASEAN's trade was 12.9% with China, 10.6% with Japan, 5.9% with the Republic of Korea and 2.9% with India[6].

As these countries become more engaged in the global production networks, the role of investing in upgrading infrastructure to facilitate trade becomes significant. The quality of infrastructure services plays a major part in the trade costs of countries engaging in trade which further plays a crucial role in determining the trade competitiveness of countries. The following table shows the accumulated reduction in trade costs resulting from infrastructure investment in the listed countries between the period of 2010 - 2020.

**Table: Accumulated reduction in trade costs resulting from infrastructure investment, 2010 - 2020 (% of trade value)**

| Country | From Transport infrastructure | From Communication |
|---|---|---|
| China | 14.0 | 0.7 |
| Indonesia | 25.3 | 6.6 |
| Malaysia | 11.4 | 1.7 |
| Philippines | 15.6 | 0.0 |
| Thailand | 12.1 | 5.9 |
| Vietnam | 13.2 | 3.1 |
| India | 21.6 | 11.2 |

*Source: Asian Development Bank and Asian Development Bank Institute, 2009*

4 *World Bank, 'World Integrated Trade Solutions', 2014.*
5 *Association of Southeast Asian Nations, 'Intra- and extra-ASEAN trade 2012', 2013.*
6 *Association of Southeast Asian Nations, 'ASEAN trade by selected partner country/region 2012,' 2013.*

The following table shows a positive linkage between reduction in cost of road transportation and economic performance of various countries.

**Table: Aggregate impacts of reduced costs of road transport**

| Aggregate Impact | GDP (%) | Exports (%) |
|---|---|---|
| China | 0.1 | 0.3 |
| Thailand | 1.1 | 2.8 |
| Vietnam | 3.6 | 3.7 |

*Source: Asian Development Bank and Asian Development Bank Institute, 2009*

**Infrastructure deficit** – The infrastructure deficit across the Asia Pacific economies is substantial. The US$8 trillion quoted above was an estimate of the required spending between 2010 and 2020. Very little (comparatively) has been done in Asia during the period 2010 to 2013 if one excludes the enormous infrastructure programme of China. To sustain current growth levels, it will be necessary to inject between US$800 billion and US$1.3 trillion annually into infrastructure projects between now and 2020. This infrastructure deficit for Asia (excluding Australia, New Zealand and Pacific countries in North and South America) is most acute in governmental infrastructure, as follows:

| Sector | US$ trillion |
|---|---|
| Telecommunications | 1.1 |
| Transportion - Roads | 2.3 |
| Transportion - Rail | 0.05 |
| Transportion - Other | 0.1 |
| Power | 4.1 |
| Water and Sanitation | 0.4 |
| **Total** | **8.05** |

*Source: Asian Development Bank and Asian Development Bank Institute, 2009*

The above estimates exclude social infrastructure requirements, infrastructure spending in the Americas, Australia and New Zealand, and take no account of disaster recovery infrastructure spending which is becoming very material.

The Global Competitiveness Report 2013 - 14 rankings out of 148 countries in terms of infrastructure is as follows. The table indicates that for most of the countries in the region, there is need for significant improvement in infrastructure to be competitive at a global level.

**Table: Infrastructure rank of countries**

| Country | Rank (out of 148) |
|---|---|
| Singapore | 2 |
| China | 48 |
| India | 85 |
| Indonesia | 61 |
| Malaysia | 29 |
| Philippines | 96 |
| Vietnam | 82 |
| Thailand | 47 |

*Source: Global Competitiveness Report, 2013 - 2014*

As one can plainly see, the challenge is enormous.

**Resource needs** – The manufacturing countries around our region demand large quantities of natural resources. Furthermore, large infrastructure programmes across all sectors require steel, other metals, sand/ concrete and machinery. Governments and corporate entities are becoming more and more focused on supply chain management – large corporations are looking to save substantial sums of money by improving the way they manage their logistics and making supply chains more effective. As infrastructure improves and connectivity becomes greater, increased efficiencies can be derived.

**Capital** – Capital has become far more mobile than it was in the past. What does that mean? At a basic level, I am able to invest my capital in projects and opportunities across most of the world through either stock exchanges or directly into projects, subject to territorial ownership restrictions. As an example, CitySpring in Singapore invested approximately US$1 billion in the BassLink electricity cable between Melbourne and Hobart, Tasmania. It is becoming increasingly easy for overseas capital to be deployed on local projects.

The competition that then arises between projects and countries in attracting the limited capital available into their market is a basic result of this mobile capital. This key point is often lost on governments, particularly in the emerging markets when considering infrastructure.

**Availability of debt** – The Global Financial Crisis (GFC) fundamentally changed the way infrastructure projects are financed. Immediately after the GFC, debt liquidity contracted to the extent that projects were put on hold or even cancelled. With the failure of the monoline insurers, the bond market faded (limited recovery in some markets now), eliminating a very large pool of capital from the infrastructure market, and governments sought to find alternative solutions to fund their infrastructure.

In the last three years or so, while there has been a return of debt liquidity to the infrastructure market, it is nowhere near the scale or on terms of pre-GFC days. Although liquidity has come back, the form of liquidity is different – tenors are shorter, margins are higher and covenants are more restrictive. The shorter tenors result in refinancing risk issues that the market has had to learn to address; the higher cost of financing makes many projects unviable, placing increased needs on the government to provide subsidy. And even as debt markets continue to gain confidence, with tenors increasing and margins dropping, it is unlikely they will return to pre-GFC levels in the near future. There has been a very limited re-emergence of the bond market. The collapse of the monoline insurance market requires projects to be structured to an investment grade level in order to attract bond financing. This has resulted in few projects that have closed with bond financing.

In order to attract debt capital to finance infrastructure in today's world, projects must be structured more effectively, limiting risks which make it easier for banks to lend to much needed infrastructure projects.

**Banking regulation** – Post GFC, regulators turned their attention to the balance sheets of banks. Because of new restrictions under Basel III around minimum capital requirements, banks will limit the amount of exposure they have to long-term debt (hence the shortened debt tenors). This places further pressure on infrastructure financing as banks look to limit long-term lending.

**Urbanisation** – There is a very high degree of urbanisation in Asia's emerging economies. Over the course of the last decade, we have seen huge growth in urban centres as people move from the countryside into cities to live and work. This trend is forecast of to continue, and in many cases accelerate.

**Table: Urban population profile of selected countries in 2012**

| Country | Urban Population (%) | Urban Population Growth (%) |
|---|---|---|
| Indonesia | 51.4 | 2.7 |
| India | 31.7 | 2.4 |
| China | 51.8 | 3 |
| Malaysia | 73.4 | 2.6 |
| Vietnam | 31.7 | 3.1 |
| Thailand | 34.5 | 1.5 |
| Philippines | 49.1 | 2.2 |

*Source: World Bank, 2014*

Currently, the level of urbanisation in the Philippines is 49% and the National Economic and Development Authority expects the rate to reach 65% by 2030. Likewise for China, in the last three decades, the urban population has risen by more than 500 million people. By 2030, China's cities are forecast to contain around a billion people[7]. In China and Indonesia, expectation is that 10 percentage points or more of the total population will shift from the countryside to the cities between now and 2025[8]. With urbanisation and increased population within city centres, and as congestion and pollution become problematic, the demand on utilities will increase substantially and the need for housing will grow. City planners, mayors and their teams need solutions to encourage effective urban planning that provides for the future. As cities grow, more investment needs to be made in transportation networks to reduce reliance on private vehicles; increased housing stock needs to be built to accommodate growing populations, and utilities and public services need investment to satisfy the growing number of urban residents.

7 *The Economist, 'Where China's future will happen', 19 April 2014.*
8 *PwC, 'Capital Project and Infrastructure Spending: Outlook to 2025', 2014.*

### Case Study – Jakarta, Indonesia

The city's huge population and a high rate of urbanisation means that its very limited public transportation network results in heavy congestion which causes long and delayed journeys. This costs the economy an estimated US$2.8 billion in wasted fuel, productivity losses and negative health impact among its residents[9]. In addition to the lack of public transport, Jakarta is spread over a large geographical area and is close to the water table. As a result, whenever there is sustained rainfall and high tide, parts of the city will flood, causing substantial loss to business and damage to infrastructure.

Jakarta is in the process of addressing some fundamental problems that affect its ability to become a first world capital city. A new MRT system is under construction; a monorail system is in development; new toll roads are being planned to alleviate traffic congestion; the port is being partially relocated, while effort is being made to clear water drainage, reclaim land and create flood barriers in the bay north of Jakarta. These are substantial and very costly projects.

**Communication** – Telecommunication capability is becoming increasingly important as businesses rely on their staff's ability to talk to colleagues, customers and suppliers both globally and in a timely manner. An increasing amount of communication is made through email, while businesses look to the internet as a valuable sales channel. Cities and countries that can implement fast and reliable wired and wireless communication networks can gain a competitive advantage over neighbouring countries. This has the dual benefit of increasing the productivity of workers in an economy and encouraging new companies to establish operations in a city or country. However, people's access to communication varies across countries in the region. While mobile cellular subscriptions per 100 people is more than 100 for most of the countries in the region, it is less than 100 for India and China[10]. For access to internet, the picture is more varied, as shown in the table below.

**Table: Internet users per 100 people**

| Country | 2011 | 2012 |
|---|---|---|
| India | 10 | 12 |
| Indonesia | 12 | 15 |
| China | 38 | 42 |
| Malaysia | 61 | 66 |
| Vietnam | 35 | 39 |
| Thailand | 24 | 27 |
| Philippines | 29 | 36 |

*Source: World Bank, 2014*

**Corruption** – Corruption remains a substantial burden to economies globally. Governments' efforts to eradicate corruption are becoming increasingly important as the cost of non-transparency becomes increasingly apparent. New regulations, like the Foreign Corrupt Practices Act and the Bribery Act, will affect the way large corporations approach the emerging markets and the risks they are willing to take to do business in these environments.

**Environmental concerns** – The impact of economic growth on the environment is driving policy change globally. As the need for investment in new technologies and renewable energy increases, the focus on the environmental impact of global warming is also renewed. And with natural disasters regularly occurring, there is a very substantial economic impact that requires enormous amounts of capital for rebuilding efforts.

Low cost economies are attracting big manufacturing companies which place demands on natural resources and require substantial amounts of power, water and other utilities. Often, this investment brings with it a focus on cheap power, for example, that which impacts on the environment – this is no different to the environmental impact the now mature global economies had during industrialisation! However, population levels in Asia are far higher than during the European and North American industrialisation and so one might argue that this environmental impact will be far greater.

9 *Oxford Business Group, 'The Report: Indonesia 2013', 2013.*
10 *World Bank, 'World Development Indicators', 2014.*

# *Challenges*

The infrastructure deficit across Asia is a very well established fact – the ability of Asia to continue growing at current rates will depend largely on how much infrastructure can be delivered in the coming years. Power generation capacity, clean water, effective utility networks and much needed improvements in transportation networks are essential for ensuring Asia is able to fulfil its potential.

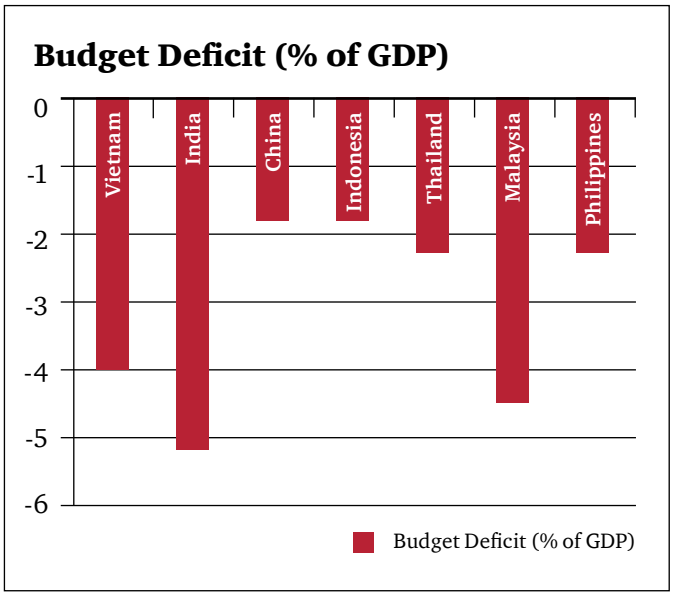
The ability of governments to finance additional infrastructure projects is limited. The following tables show budget deficits in various countries in the region.

**Table: Budget deficit in selected countries, 2012**

| Country | Budget Deficit (% of GDP) |
|---|---|
| Vietnam | -4 |
| India | -5.2 |
| China | -1.8 |
| Indonesia | -1.8 |
| Thailand | -2.3 |
| Malaysia | -4.5 |
| Philippines | -2.3 |

*Source: Asian Development Bank, 2014*

There is sufficient capital within the market to fund the projects that are currently being procured across the region. The global stock of capital managed by pension funds, sovereign wealth funds, insurance companies and other institutional investors is $50 trillion out of which only 0.8% is allocated to infrastructure[11]. However, the projects currently being procured are a small fraction of the infrastructure pipeline that is actually required over the next 10 to 20 years – there is a bottleneck that is markedly slowing down the rate at which well-structured/well-conceived projects are coming to market. These are the "investment barriers" that stop the supply of capital meeting the demand for infrastructure.




*Source: Asian Development Bank, 2014*

Furthermore, as new projects come to market, and if Asia Pacific economies are able to eliminate the investment barriers and bring substantially more projects to market, new sources of capital will be required. The current pool of equity and debt liquidity is sufficient for what is currently being procured – but not enough to satisfy US$10 trillion to US$20 trillion of investment. Interestingly, a large amount of capital is invested across the Asia Pacific into "fixed assets", which includes real estate, mining and resources, and industrial manufacturing/processes. A far lower proportion is invested into the infrastructure that drives economic growth – roads, railways, power and water. For example, Indonesia invests approximately 33.1%[12] of annual GDP in fixed assets each year, while only investing 3.2% in much needed infrastructure like roads, rail and power. In contrast, the USA invests approximately 12.7% of annual GDP in fixed assets each year, while investing 2.6% in infrastructure.

### *Weak legal and regulatory framework*

The legal and regulatory framework that exists within a country is a critical factor in determining the success of any infrastructure market. A weak legal or regulatory framework will block private sector capital and expertise from participation in infrastructure projects that are inherently governmental (power, water, transport). Market participants need to be comfortable that they will be treated fairly in any competitive process, that their investments are secure, and that their intellectual property is respected.

This is a key issue that slows down the ability of emerging markets globally in developing infrastructure stock.

### *Poorly structured or prepared projects*

Effectively planning, structuring and preparing an infrastructure project for market is the most basic fundamental of any successful project.

Sufficient time and money is needed to prepare a project for market – feasibility studies are required to establish the economic and technical viability of a large infrastructure transaction; the project owners need to identify the most appropriate commercial structure that can be achieved within a governing regulatory framework; risks need to be identified and allocated through the contractual documentation in such a way that makes a project bankable; and a tender process that is fair, transparent and understood by the market needs to be adhered to.

*11 The Economist, 'The trillion-dollar gap', 22 March 2014.*
*12 Economic Intelligence Unit*

### Case Study – Asian Financial Crisis, 1997

The Asian Financial Crisis in 1997 led to a fundamental currency crisis in Indonesia. At that time, Indonesia had a number of concessions that had been let to international consortia which invested in the development of large infrastructure projects, primarily in the power sector. The devalued Rupiah placed unmanageable strain on the Indonesian government which ceased its ability to make payments to the international investors. As a result, the government cancelled the concessions with no or inadequate compensation, resulting in substantial losses to the investor market.

This resulted in a loss of confidence in the Indonesian infrastructure market, and with subsequent credit downgrades from rating agencies led to a collapse of foreign investment into Indonesia. In recent years, Indonesia has taken great strides in addressing the concerns of investors in the infrastructure market:

- The government has been integral in establishing the Indonesian Infrastructure Guarantee Fund, an institution that aims to enhance the investment grade of projects through the provision of guarantees, or capital to bridge funding gaps;
- The government has also worked to establish the required processes and procedures for developing and progressing projects, so that they can be taken to market in a bankable form. These institutions responsible for this include PT Sarana Multi Infrastruktur (SMI) (established to promote and finance infrastructure projects) and Indonesia Infrastructure Finance (IIF) (established to invest in commercially feasible infrastructure projects);
- The government recently passed legislation to ease the compulsory acquisition of land by government for the purposes of infrastructure development. Land acquisition has been a key issue that has stopped the progression of projects – previously, the government awarded contracts to bidders on the assumption that the bidder would acquire the land at the bidder's risk. This is not bankable; and
- Engagement with international institutions – The government has worked with, and utilised the expertise of international organisations such as the Asian Development Bank (ADB), Japan International Cooperation Agency (JICA), World Bank Group and Singapore Cooperation Enterprise (SCE) to great effect. This encompasses the use of their experience in prioritising, developing and tendering projects as well as building the capacity and capability of officials across government institutions.

Once a project is prepared, the market needs be made aware of the opportunity – the project owners need to "sell" the project to the market to attract interest. This is often done through procurement publications and other media, market awareness presentations (e.g., 'Open Days'), or one on one meetings with potential investors. In emerging markets, such campaigns become very important as the private sector evaluates where to invest its constrained capital. Regional governments must recognise that investors, lenders and those operating within the market (advisors, constructors and operators) will place their time and money in jurisdictions and projects offering the best return for the risks assumed.

Prior to commencing formal procurement tender documentation, that clearly articulates the project requirements, the commercial structure and the obligations of all parties need to be drafted and approved by government. These tender documents need to be comprehensive. Poorly conceived tender documentation will result in a sub-optimal or failed procurement process as potential bidders do not want to spend valuable time and money bidding on projects where procuring authorities fail to deliver adequate documentation to the market.

### *Inequitable risk allocation*

Governments can view the involvement of the private sector in projects as a way to transfer all risks to another party. However, governments will always retain some risk, and the project and resultant risks will transfer back to the government in the event of a project failure. Thus governments should not seek to transfer as much risk as possible but instead seek to allocate the risks to the parties that are best able to manage them. This means considering the levers over specific risks, which party controls those levers and therefore are able to manage the risks. Furthermore, governments should consider the price for transferring risk. Risk should be transferred so as to maximise value for money for the government.

### Case study – Road projects in Australia

**Project failure**

Australia has implemented a number of greenfield toll road projects which have been contracted under a Design, Build, Finance and Operate (DBFO) basis, with the private sector taking demand and revenue risk. There have been a number of high profile project failures early on in the contract terms, primarily driven by actual traffic numbers being well below what was forecast at the time of the bids.

**Implications**

Some might argue that these and other similar projects should not be viewed as a failure. When reviewing government outcomes, new infrastructure has been built, often on time and to the required standard, and successfully become operational. The public has benefited from the improved transportation connectivity and the failure of the project company has not resulted in any disruption to them.

However, with the large number of project failures, it is unlikely that investors or project sponsors will support future road projects under the current risk allocation. If they do, then they will require increased rates of return which may well not lead to value for money outcomes for the government. Thus the government must review the risk allocation and revise it so that there is an equitable allocation of risk. In this case, it is likely that the government will need to retain demand and revenue risk, or as a minimum, implement a risk-sharing mechanism. This can be achieved through a number of mechanisms such as an availability payment mechanism which should be developed in consultation with the market. Only then, is it likely that the government will be able to procure further road projects on a public-private partnership (PPP) basis.

In addition to the selected example above, there are other examples of projects failing because of inequitable risk allocation. Governments should seek to avoid tendering projects with such risk allocations by engaging with the market in the project structuring stage to understand their risk appetite and the types of mechanisms that can be put in place to ensure value for money for the government. In addition, when projects fail, governments should analyse the failure and incorporate the lessons learned into subsequent projects that are tendered.

### *Lack of capacity*

Infrastructure projects are large and complex, and similarly, the procurement of them is not an easy process. This is especially true when there is a lack of experience in procuring such projects. Public sector officials require technical, legal and financial skills which must be supported by rigorous procurement processes which allow for decisions to be made and conclusions as well as recommendations to be challenged. Governments and officials should complement their in-house skills with external advice as and when required, to provide specialist knowledge and insight. This naturally comes at a cost, but when compared to the overall cost of the projects, a little investment upfront can reap huge dividends for public finances.

## Case study – The procurement of the InterCity West Coast rail franchise, UK, 2012

### Background

The UK government has an established industry structure for the rail sector which involves letting franchise contracts for the operations and maintenance of specified train services to private sector operators. There are over 20 such franchises which used a common template contract across the franchises.

### Revised tender terms

Following issues with the template contract arising from the recession in the UK following the GFC, the government looked to revise the template contract to rectify some of these problems. One area of revision was the allocation of revenue risk between the government and operators. Previously, operators had taken full revenue risk between two levels, above and below which, revenue was shared with or supported by the government. This was known as the 'cap and collar' regime. This regime led to perverse incentives which were only evident when passenger revenue fell as a result of the recession.

Thus, the government decided to change this regime and implement a new system in future contracts. This new regime adjusted the revenue support mechanism and introduced a subordinated loan facility. The West Coast franchise was to be the first franchise let under these new terms.

### Procurement process

The Department for Transport (DfT) conducted the tender process during 2012 and provisionally awarded the contract to FirstGroup. This award was then challenged by one of the failed bidders, Virgin, who initiated legal action against the department and its tender process. During preparation for its defence against the legal challenge, the department identified issues with its tender process and was forced to cancel the award.

A subsequent review of the procurement process by the National Audit Office made a number of recommendations [Lessons from cancelling InterCity West Coast franchise competition, National Audit Office, UK] that should be implemented for future tender processes. These included:

- Providing training to staff on any new tools or policies;
- Regular reviews of staffing to ensure it is appropriate both in terms of numbers and skills; and
- The department should appoint someone with sufficient seniority to oversee each significant commercial transaction and major project.

### Outcomes

With the cancelling of the award, the department was forced to agree to an interim management contract with the existing operator and retender the contract at a later date. The Public Accounts Committee estimated that the cost to the taxpayer of the failed procurement was in the region of GBP 50 million. This was the cost for DfT advisers and compensations for the bidders. This does not include the significant opportunity cost of delayed investment in the franchise and the loss in market support for the franchising programme and the department's procurement process. The department has had to undertake a number of initiatives to restore investor confidence in the franchise programme and this can only be truly done once a number of new franchises have been successfully procured.

### *Suggestions for governments before a tendering process*

- There is no 'quick-fix' to increase the capacity of public sector officials – it does take time and investment – but the implementation of a number of programmes will lead to tangible benefits. Seek partnerships with other countries to share staff, skills and experience or participate in regional initiatives such as the Temasek Foundation Leaders in Urban Governance Programme;
- Work with international development organisations such as the ADB, AusAid as well as the World Bank and implement their procurement processes and guidelines for projects. These processes and guidelines are well understood and respected by the international infrastructure and financing community, giving some comfort to these parties as to the robustness of the processes and project information;

- Develop a central pool of resources. Often, the quickest way to increase capacity is to develop a central, specialised pool of resources where expertise lies. These resources can be deployed to high risk and complex projects and support implementing agencies and procurement bodies in developing and procuring projects. This can be through the sharing of staff or requiring projects to involve the central pool in the approval and procurement process of the projects. Staff will quickly gain experience across the project lifecycle and be able to share learnings across future projects and sectors; and
- Use external advisers. Advisers have developed and procured projects across sectors and countries multiple times. They can use this knowledge base and experience and apply it to the specific projects being developed, helping to ensure that bankable projects are taken to market and the tendering process is robust as well as transparent.

The private sector suffers similar issues in emerging markets, where there has not been a long and sustained infrastructure procurement and financing programme. Emerging markets often lack advisory capability (legal, technical and financial), a robust construction market that is able to address the many risks inherent in large scale infrastructure, a banking and capital market that can sustain and fund all the required infrastructure needs of a country, and finally, the operator capability that is required to deliver efficient operations and asset management. Therefore, capacity limitations do exist across the market – this capacity crisis needs to be addressed by all parties.

### *Imbalance between risk and return*

Equity and debt financiers will invest their capital in markets that offer fair and equitable returns for the risks being taken. In simple terms, most foreign investors and financiers will assess projects in jurisdictions in which they have operations or are contemplating operations to understand the risks they will be exposed to and whether they will be able to compete with the local market (or be treated equitably). If the returns offered by a specific project do not fairly compensate advisors, investors and lenders, builders, or operators, they will invest their money in competing projects and jurisdictions that do.

For example, I am a UK-based investor looking to invest my capital in infrastructure. I have the option to invest my capital in a UK Private Finance Initiative (PFI) Road Project and generate a 10% return, where the government pays a unitary payment for availability and the government provides the land. I also have an opportunity to invest in a road project in an emerging market where I will generate 14%, but will have to acquire the land and am exposed to traffic and tariff risk. In addition, as I am based in the UK, I am not familiar with the emerging market and am nervous about the new procurement process which is untested or whether I will be treated equally with other bidders. My investment decision becomes easy – I will not take the risk to invest in the emerging market in this instance as the return is simply not good enough to compensate for the project and sovereign risks.

# *Solutions*

Both mature and emerging markets need to urgently address the infrastructure deficit that has developed over time – emerging markets need new infrastructure while mature markets need to refurbish and refresh old, inefficient infrastructure. Capital is needed from the government and the private sector in order to deliver on the infrastructure promise. The starting point should be to get the basics right, establishing a strong foundation on which to procure your infrastructure needs.

At a very basic level, governments should develop rigorous procurement processes that are transparent: pipeline management should focus on priority and developing projects effectively using precedents from past transactions, but then adapted for local regulations. This section dicusses some of these principles in more detail.

### Case study – Philippines Public-Private (PPP) Centre

**Background**

The Aquino administration identified the delivery of infrastructure as a key priority for its government. To facilitate this, the administration set about reforming the regulations and government machinery. One key initiative was the establishment of The Public-Private Partnership (PPP) Centre – a new government agency mandated to monitor and facilitate the implementation of Philippines' PPP Programme.

**Responsibilities**

The PPP Centre was given wide-ranging responsibilities and accompanying funding and resources to carry out its objectives:

- Provide training and capacity development to Local Government Units (LGUs) / Implementing Agencies (IAs);
- Fund pre-investment activities such as business cases and feasibility studies;
- Provide technical assistance in the review of a project's financial and economic viability;
- Assist and advise in the preparation of bid documents during the procurement process and the evaluation of bids;
- Monitor implementation;
- Establish and manage a central database of PPP projects; and
- Recommend improvements to timelines in processing PPP projects.

**Outcome**

As of April 2014, the PPP Centre has successfully awarded a total of seven projects across a number of sectors including airports, schools and roads. These projects all went through a competitive bidding process and attracted keen interest from local and international companies and investors.

**Key Success Factor**

A key success factor of the PPP Centre is that it has received tremendous support from senior government officials, including the President. This has enabled the centre to work across various government agencies and ease the progression of projects through the development and approval process. Furthermore, the PPP Centre has harnessed the skills and resources of the ADB to implement robust frameworks, guidelines and knowledge sharing.

### *Focus on developing legal and regulatory frameworks*

A number of the emerging markets in the Asia Pacific region do not have legal or regulatory frameworks that allow for effective development of an infrastructure programme – for example, some governments are not allowed to provide subsidies for PPP projects where the private sector is tasked with designing, building, financing and operating projects. Because the project does not provide sufficient revenues on a standalone basis to cover the cost of investment, government subsidies are required to make the project bankable. Legislation is required to allow for subsidy to be offered by government. Current examples where legislation is being passed to allow for this are Philippines, Thailand and Indonesia where new viability gap funding laws are being passed.

The emerging market economies should identify key gaps within their legal framework and then draft regulations and laws that address these gaps. The laws that are passed should look to global precedent in order to make this process more efficient (why reinvent the wheel otherwise?), and ensure that the market can easily understand and respond to these new laws.

Strong institutions need to be established to drive infrastructure procurement programmes. The PPP Centre of the Philippines and the Indonesia Infrastructure Guarantee Fund are good examples of institutions that have been established to support the effective development of infrastructure projects. However, it is important that central governments provide sufficient decision-making powers to these institutions to ensure a controlled prioritised approach to projects. While establishing strong governing institutions, governments should also develop clear procurement frameworks that encourage transparent bidding processes.

### *Precedent*

A number of markets have very good infrastructure programmes that have been developed over a long period of time, showing successful delivery of projects across numerous sectors. Australia, South Africa, the UK, Canada and Japan all offer good examples of how a government might approach both its infrastructure needs but also contrasting project structures. It is important that emerging market economies recognise globally accepted principles and commercial positions when structuring projects and drafting contracts. Furthermore, some emerging markets have good local success stories – governments should be looking to these projects to identify the critical success factors that allowed these projects to close.

## Case Study: Mong Duong II Independent Power Producer (IPP), Vietnam

Mong Duong II (MD2), a 1,240 MW coal-fired power plant in Vietnam, closed in 2012 with international equity and debt being injected into the project. The project will cost US$ 1.95 billion to develop, with the debt component being US$ 1.4 billion and repayable over an 18-year tenure.

MD2 is being developed under a robust build-operate-transfer (BOT) structure, using the well-tested Vietnamese BOT framework. Some key aspects of the project include:

- A 25-year power purchase agreement (PPA) with state-owned Electricity of Vietnam;
- A BOT-type concession agreement with the Ministry of Industry and Trade (MOIT);
- A government guarantee and undertakings (GGU) with the Government of Vietnam;
- A coal supply agreement with Vinacomin; and
- Ancillary agreements for land lease and water supply.

The MD2 project also has a number of commercial benefits associated with its convenient location, such as being in close proximity to coal mines allocated to the project by Vinacomin, having good connectivity to the national power transmission grid, and having good transportation infrastructure and access to cooling water.

Because the project was attractive both contractually and commercially, AES Corp (the project sponsor) was able to bring in new equity partners to the project – South Korea's POSCO Power Corp and China Investment Corporation (CIC), holding interests of 30% and 19% respectively. AES Corp also appointed South Korea's Doosan Heavy Industries & Construction to be the main contractor for MD2. This was the first time that the South Korean entities had participated in a Vietnamese transaction and their involvement subsequently influenced the financing structure – seeing South Korea's export credit agencies' (KEXIM and K-Sure) participation in Vietnam's power sector for the first time.

Even with the devaluation of Vietnam's currency, coupled with high inflation, a negative economic outlook at the end of 2010 and state-owned Vinashin's debt issues, the non-recourse financing was successfully closed on the back of the project structure. MD2 is hoped to set a precedent for power projects in the country as Vietnam seeks to procure further generation capacity to meet its increasing demand over the next decade.

Commercial structures and project contracts that include precedent-setting cases from successfully financed/ delivered projects will attract interest and are more likely to successfully close than those that ignore past successes. Therefore, governments should be looking to identify key clauses in contracts that do drive bankability and then base commercial positions on precedent clauses elsewhere – for example, compensation on termination provisions.

### *Project structuring – a focus on equitable risk allocation and fair return*

Infrastructure projects are large, long-term risky endeavours. From the moment a procurement process for an asset commences to the moment that infrastructure asset is decommissioned, government and the sponsors of the project are exposed to risk. When defining a commercial structure for a project, irrespective of whether the project is a traditional government procurement or a public-private partnership, risk needs to be identified and mitigated. The basic principle for any infrastructure project is that individual risks should be borne by the party best placed to manage and mitigate that risk.

For example, a construction company is best placed to manage and deliver a construction programme which is its core skill– government is not equipped to do so, and therefore should look to transfer construction-related risks to the entity that is awarded a construction project. The risks of overspend and delay could be borne by the constructor through a fixed price turn-key construction contract that includes liquidated damages and performance bonds (traditional procurement).

A good PPP contract would transfer this risk to the special purpose vehicle (SPV) which is awarded the contract – the SPV is incentivised to deliver the project on time and budget through the concession and tariff arrangements (if the asset is not delivered on time with associated services, no payments are made to the SPV which impacts on their return and erodes the SPV's ability to pay banks), and the SPV then passes some of these risks to the constructor through its own fixed price turn-key construction contract (which includes liquidated damages and performance bonds).

A failure to recognise that risk allocation needs to be equitable will lead to more expensive, or in some instances, unbankable projects. Funders, constructors and operators will price risk into the cost of the project (as should government if they are procuring through a traditional procurement method), and in extreme cases, withdraw bids or fail to find financing if risk allocation is not sensible.

### *Alternative sources of financing*

Earlier, the challenges of financing infrastructure projects were discussed. It is increasingly challenging to finance infrastructure projects following the GFC and the implementation of new rules under BASEL III. With government budgets still constrained and the need for infrastructure still immense, governments must look to release alternatives sources of financing.

These alternative sources of financing include insurers, pension funds and endowment funds. These investors have long-term investment horizons and trillions of dollars of cash that need investing. Thus, infrastructure investment should be attractive to them. However, their allocation of funds to the infrastructure sector is as low as 0.8%[13] and almost exclusively directed towards mature economies (for direct infrastructure investment). Generally, pension funds, infrastructure funds or sovereign wealth funds will not invest in greenfield projects as they do not want exposure to construction risk.

The large institutional infrastructure investors in Europe, North America and Australia focus the majority of their infrastructure investment allocation on mature economies and assets. Emerging market economies need to therefore focus on developing legal frameworks, institutional strength and consistency to attract this capital.

Thus, governments must work to target these investors by taking to them brownfield projects and looking to recycle the cash generating or structuring greenfield projects in such a way that they can get their investment committees comfortable with the risk allocation.

*13 The Economist, 'Infrastructure financing: A long and winding road,' 22 March 2014.*

# *Opportunities*

The opportunities across the Asia Pacific region are substantial when considering the need for infrastructure. Much needs to be done to grow the power and utility capabilities of emerging market economies, the transportation networks that connect economic activity within a country and those that allow for effective trade between nations.

The mature markets across Asia Pacific face a different set of challenges – how to replenish the ageing infrastructure that is eroding their competitiveness. The backlog of maintenance and asset regeneration is growing. Coupled with this, mature governments face budgetary constraints that demand the private sector's involvement in infrastructure investment.

The demand for companies in the Asia Pacific region to invest in infrastructure is very apparent. However, one must recognise that the opportunity for such investment lagging behind demand is due to the slow pace of change in improving the way infrastructure is procured in the emerging markets. Until governments recognise the need to address investor concerns, the infrastructure gap will continue to grow.

# About the Authors

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Mark is the PwC Capital Projects and Infrastructure leader for the Asia Pacific Region and has extensive experience in structuring projects that straddle the complex interface between public and private partnerships. He has been integral to the development of numerous project structures, risk allocation and mitigation strategies and the related funding solutions in various sectors in the UK and across Asia Pacific (transport, health, leisure, defence, IT, water and waste water). He leads a team of over 140 professional staff that deliver solutions to complex infrastructure problems across the infrastructure lifecycle – from early feasibility, through to procurement, capital programme reviews, commercial and financial structuring, including debt and equity raising, work out solutions for failing projects and of course secondary market infrastructure activity.

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Oliver is a Senior Manager, Capital Projects and Infrastructure at PwC Singapore. He has deep experience across infrastructure sectors and has advised infrastructure developers and governments across Asia, UK, America and the Middle East. Oliver has advised bidders during numerous PPP transactions including rail franchises in the UK and airport concessions in the Philippines. He has also advised governments on the procurement of large scale infrastructure projects. Previously, Oliver was a Rail Policy Advisor at the UK HM Treasury where he advised government ministers on multi-billion dollar procurement projects and the concession contract for the UK's only High Speed Rail infrastructure.

# To discuss the issues


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