

Infrastructure PPP in Asia

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Preface

No one can doubt that massive investment in infrastructure is needed throughout Asia and that with the possible exception of the power sector, transportation infrastructure is the most under-funded sector.

We have identified a number of factors which have

- i. restricted project development;
- ii. led to clients not bidding for projects; and
- iii. stalled economic development through lack of investment and funding. Why is this the case? Why is it that despite ambitious development programmes, few projects actually materialise? Are the reasons connected, or are there unique country specific barriers?

Asia faces a number of challenges, not least due to the fragmented nature of the market which can act as a barrier to new investment. There is still a lot to be done: as one respondent noted “there needs to be political will and a lot of homework before PPP can take off in Asia”.

Recent transactions in the global transportation infrastructure market show that PPP does offer viable solutions to meet the infrastructure deficit. The challenge for Asian countries is to develop their own models which not only meets their national needs but which will also satisfy the concerns of sponsors, lenders and other stakeholders.

This is the second of our PPP surveys (following our future of waste survey earlier this year) and I trust the findings will make interesting reading across all parts of the transport industry both in Asia and further afield. I also hope it will serve as a useful aid to the successful development of much needed infrastructure in Asia.

Martin McCann

Global Head of PPP/PFI

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- Sumitomo Mitsui Banking Corporation
- Turnaround Company Limited
- UOB Asia

Methodology

With the assistance of Nanyang Technological University in Singapore we surveyed market participants to understand better the barriers to project development. We are grateful to clients and colleagues who took the time to complete the survey. Responses were received from lenders, insurers, legal advisers, project sponsors and government officials in a broad range of Asian and non-Asian countries.

Respondents were asked to provide their opinion on a seven grade scale on risks in the focus countries and were invited to provide their comments on relevant issues. The risk categories were:

Restrictions on currency exchange, currency exchange fluctuations, currency remittance laws/restrictions on borrowing, depth of swap markets.

Risk Categories	Description
Supply risk	Certainty of supply of goods and materials. Quality of supply, ease of importation of goods, transparent tax regime.
Demand risk	Demand for infrastructure linked to payment. Is patronage a major risk?
Completion risk	Ability to reach financial close and ability to satisfy conditions precedent including land acquisition, construction and commissioning the project on time and on budget.
Operational risk	Skill and experience of operator. Quality of supply of spare parts and materials, energy supply and labour.
Environmental risk	Compliance with environmental law: comprehensive impact studies and viable means of mitigating contamination.
Engineering risk	Complexity of the project and availability of skilled labour, contractors and professionals. Largely mitigated by expertise but can be affected by ground condition, flooding, seismic activity etc.
Political risk	Political violence/terrorism, risk of expropriation and currency convertibility.
Counterparty risk	Quality of counterparties, both governments or other 'offtakers' (credit risk assessment). Reliability of contractors and government licence / permitting departments.
Legal and regulatory risk	Sanctity of contracts, legal transparency, lack of corruption, clear regulation and enforcement of laws.
Foreign exchange risk	Restrictions on currency exchange, currency exchange fluctuations, currency remittance laws/restrictions on borrowing, depth of swap markets.

The countries reviewed were:

- China
- Indonesia
- Malaysia
- Singapore
- Thailand
- Vietnam

“In less developed countries the viability funding gap has to be addressed” (Respondent)

Executive summary

Respondents determined that the most critical risk, regardless of country or indeed sector, was demand risk.

Indonesia is perceived to be the riskiest country in which to undertake projects, followed by Vietnam, China, Thailand, Malaysia and Singapore. However, some countries ranked higher than Indonesia on specific risks namely Vietnam (demand risk and FX risk) and China (environmental risk). Singapore was ranked least risky in all sectors.

There is a clear correlation between risk and the technical complexity of projects with MRT projects posing the most risk on a sectoral basis followed by airports, heavy rail, sea ports and toll roads.

On a specific basis the highest ranking risk, regardless of sector, was:

Country	Highest ranking risk
China	Legal and regulatory
Indonesia	Political
Malaysia	Demand
Singapore	Demand
Thailand	Political
Vietnam	Legal and regulatory

On a sector specific basis the highest ranking risk, regardless of country, was:

Sector	Highest ranking risk
Airports	Completion
Heavy rail	Demand
MRT	Demand
Sea ports	Demand
Toll roads	Demand

Across all countries MRT projects offer the most opportunities followed by toll roads, sea ports, airports then heavy rail.

Respondents felt that Vietnam and China offered the most PPP transportation opportunities with Singapore and Malaysia offering the fewest. Toll roads and airports were ranked highest in Vietnam; China offers the greatest opportunities in heavy rail whilst Thailand the most for MRT. Indonesia offers the best opportunities in the port sector.

“It appears that the volume of opportunities in a country tends to be highly correlated to the degree of political risk in that country, so that China and Indonesia look as if they will have the highest number of PPP opportunities moving forward, but also are perceived by respondents as having the highest level of political risk” (Norton Rose)

The risk factors

Demand and completion risks score the highest irrespective of sector and country and the overall risk rating was:

1. demand risk
2. completion risk
3. political risk
4. counterparty risk
5. legal and regulatory risk
6. supply risk
7. environmental risk

Demand risk remains the main concern of respondents across countries and sectors. Respondents noted that demand risk should be allocated to governments. Governments must be confident that the relevant project is needed and to stand behind that belief by absorbing demand risk. Too many projects across the region either do not meet the transport needs of the public (and so are under utilised) or cost too much to be of practical use.

It is clear that governments will need to subsidise many projects to alleviate demand risk concerns and public funds will need to be allocated accordingly. Sponsors could be incentivised to deliver future costs savings through the use of PPP output specifications and payment mechanisms which Asian governments have not yet embraced – the PPP model can offer increasing value for money to governments.

Patronage and completion risk scored the highest. This may in part be influenced by the fact that a large number of respondents were bankers, but the conclusion is not surprising: bad economics and delay will always affect projects. The concern relating to completion is not so much a function of the risk of delay caused by sponsors but government delay in the delivery of land or permits. Surprisingly FX risk scored relatively low (5/10) and so does not appear to be viewed as an overriding barrier (with demand, completion, political and counterparty risks ranking ahead of it). Admittedly there is a partial overlap of FX risk with political risk but in our experience the markets are realistic about the benefits of political insurance and its impact on pricing in that even if full protection is available the impact of purchasing such a policy on pricing may be significant. The survey suggests that where patronage and completion risks have been mitigated and the sponsors have engaged with good quality counterparties (government and contractors) that funding will be available, especially in countries where liquid domestic financing is available such as China, Thailand, Malaysia and Singapore.

“In the road sector traffic risk can be significant if the project is not supported by economic growth in the area.” (Respondent)

“Land acquisition remains one of the biggest issues throughout Asia. Most Asian governments do not have the right to acquire land or they not do not use their rights properly.” (Respondent)

Risk by country

Legal and regulatory risks are ranked as the highest risk factors in China and Vietnam. Surprisingly environmental risk is ranked high in Singapore but this is probably because of the comprehensive environmental regulations (and sanctions) in Singapore which will concern sponsors and lenders alike. Our respondents ranked political risk as the most significant risk in Thailand (and this was before the recent coup). Infrastructure development in Thailand is effectively stalled as the market awaits both the identity and policies of the new government and details of the new constitution.

“Completion risk is closely related to supply risk. The contractor always passes on price risk to sub-contractors which mean sub-contractors may walk away leading to project delay.” (Respondent)

Rank	China	Overall
1	Legal and regulatory risk	Demand risk
2	Environmental risk	Completion risk
3	Political risk	Political risk
4	Counterparty risk	Counterparty risk
5	Demand risk	Legal and regulatory risk
6	Operational risk	Supply risk
7	Supply risk	Environmental risk
8	Engineering risk	Operational risk
9	Foreign exchange risk	Foreign exchange risk
10	Completion risk	Engineering risk

Rank	Indonesia	Overall
1	Political risk	Demand risk
2	Legal and regulatory risk	Completion risk
3	Completion risk	Political risk
4	Counterparty risk	Counterparty risk
5	Operational risk	Legal and regulatory risk
6	Supply risk	Supply risk
7	Demand risk	Environmental risk
8	Engineering risk	Operational risk
9	Environmental risk	Foreign exchange risk
10	Foreign exchange risk	Engineering risk

Rank	Malaysia	Overall
1	Demand risk	Demand risk
2	Counterparty risk	Completion risk
3	Completion risk	Political risk
4	Supply risk	Counterparty risk
5	Environmental risk	Legal and regulatory risk
6	Political risk	Supply risk
7	Operational risk	Environmental risk
8	Legal and regulatory risk	Operational risk
9	Engineering risk	Foreign exchange risk
10	Foreign exchange risk	Engineering risk

Rank	Singapore	Overall
1	Demand risks	Demand risk
2	Supply risk	Completion risk
3	Environmental risk	Political risk
4	Engineering risk	Counterparty risk
5	Completion risk	Legal and regulatory risk
6	Operational risk	Supply risk
7	Counterparty risk	Environmental risk
8	Foreign exchange risk	Operational risk
9	Political risk	Foreign exchange risk
10	Legal and regulatory risk	Engineering risk

Rank	Thailand	Overall
1	Political risk	Demand risk
2	Demand risk	Completion risk
3	Completion risk	Political risk
4	Legal and regulatory risk	Counterparty risk
5	Supply risk	Legal and regulatory risk
6	Counterparty risk	Supply risk
7	Foreign exchange risk	Environmental risk
8	Environmental risk	Operational risk
9	Operational risk	Foreign exchange risk
10	Engineering risk	Engineering risk

Rank	Vietnam	Overall
1	Legal and regulatory risk	Demand risk
2	Demand risk	Completion risk
3	Foreign exchange risk	Political risk
4	Counterparty risk	Counterparty risk
5	Completion risk	Legal and regulatory risk
6	Political risks	Supply risk
7	Supply risk	Environmental risk
8	Operational risk	Operational risk
9	Environmental risk	Foreign exchange risk
10	Engineering risk	Engineering risk

Indonesia is viewed as the riskiest country for infrastructure development.

In the more risky countries (Indonesia and Vietnam) an initial focus on less riskier sectors may lead to greater success in closing projects in the short term; this would create a track record of successful deals and, perhaps, a platform for the development of more complex projects.

China scores high in both operational and engineering risks for our respondents. With civil works and O&M activities being largely awarded to domestic companies, there still appears to be a question mark over Chinese safety operations and procedures. China was perceived as posing more risk than Vietnam in respect of both these risks but this may be because international and multi-lateral lenders are more prevalent in Vietnamese projects and may impose more stringent conditions than Chinese banks.

Supply risk

Rank	Country
1	Indonesia
2	Vietnam
3	China
4	Malaysia
5	Thailand
6	Singapore

Demand risk

Rank	Country
1	Vietnam
2	Indonesia
3	China
4	Thailand
5	Malaysia
6	Singapore

Completion risk

Rank	Country
1	Indonesia
2	Vietnam
3	Thailand
4	China
5	Malaysia
6	Singapore

Engineering risk

Rank	Country
1	Indonesia
2	China
3	Vietnam
4	Malaysia
5	Thailand
6	Singapore

Operational risk

Rank	Country
1	Indonesia
2	China
3	Vietnam
4	Thailand
5	Malaysia
6	Singapore

Political risk

Rank	Country
1	Indonesia
2	Vietnam
3	China
4	Thailand
5	Malaysia
6	Singapore

Environmental risk

Rank	Country
1	China
2	Indonesia
3	Vietnam
4	Thailand
5	Malaysia
6	Singapore

Counterparty risk

Rank	Country
1	Indonesia
2	Vietnam
3	China
4	Malaysia
5	Thailand
6	Singapore

Legal and regulatory risk

Rank	Country
1	Indonesia
2	China
3	Vietnam
4	Thailand
5	Malaysia
6	Singapore

Overall risk

Rank	Country
1	Indonesia
2	Vietnam
3	China
4	Thailand
5	Malaysia
6	Singapore

Foreign exchange risk

Rank	Country
1	Vietnam
2	Indonesia
3	China
4	Thailand
5	Malaysia
6	Singapore

Risk by sector

Completion risk is ranked highest in the airport sector which may well be a reflection of the difficulties Suvarnabhumi airport has faced in Bangkok, recent procurement difficulties at Indian airports and Fraport's difficulties in Manila. In all other sectors demand risk is ranked highest with concerns regarding patronage specifically cited. Legal and regulatory risk is ranked high for toll roads, MRT and sea ports. Foreign exchange risk is ranked low in the sea and airport sectors which reflects their access to hard currency revenue. FX risk is ranked higher in projects where revenue will be generated in local currency but which will typically require significant capital investment in foreign currency (such as MRT projects).

Toll roads sector

Rank	Risk	Overall
1	Demand risk	Demand risk
2	Political risk	Political risk
3	Legal and regulatory risk	Legal and regulatory risk
4	Counterparty risk	Completion risk
5	Completion risk	Counterparty risk
6	Supply risk	Engineering risk
7	Foreign exchange risk	Supply risk
8	Environmental risk	Operational risk
9	Engineering risk	Environmental risk
10	Operational risk	Foreign exchange risk

Heavy rail sector

Rank	Risk	Overall
1	Demand risk	Demand risk
2	Political risk	Political risk
3	Completion risk	Legal and regulatory risk
4	Legal and regulatory risk	Completion risk
5	Counterparty risk	Counterparty risk
6	Supply risk	Engineering risk
7	Operational risk	Supply risk
8	Foreign exchange risk	Operational risk
9	Engineering risk	Environmental risk

10	Environmental risk	Foreign exchange risk
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Mass rapid transit sector

Rank	Risk	Overall
1	Demand risk	Demand risk
2	Political risk	Political risk
3	Legal and regulatory risk	Legal and regulatory risk
4	Completion risk	Completion risk
5	Engineering risk	Counterparty risk
6	Foreign exchange risk	Engineering risk
7	Counterparty risk	Supply risk
8	Operational risk	Operational risk
9	Supply risk	Environmental risk
10	Environmental risk	Foreign exchange risk

Sea ports sector

Rank	Risk	Overall
1	Demand risk	Demand risk
2	Political risk	Political risk
3	Legal and regulatory risk	Legal and regulatory risk
4	Completion risk	Completion risk
5	Environmental risk	Counterparty risk
6	Supply risk	Engineering risk
7	Engineering risk	Supply risk
8	Counterparty risk	Operational risk
9	Operational risk	Environmental risk
10	Foreign exchange risk	Foreign exchange risk

Airports sector

Rank	Risk	Overall
1	Completion risk	Demand risk
2	Political risk	Political risk
3	Demand risk	Legal and regulatory risk
4	Operational risk	Completion risk
5	Legal and regulatory risk	Counterparty risk
6	Environmental risk	Engineering risk
7	Engineering risk	Supply risk
8	Counterparty risk	Operational risk
9	Supply risk	Environmental risk
10	Foreign exchange risk	Foreign exchange risk

Unsurprisingly the technically complex projects also involve significant risk, with the MRT and airport sectors being ranked first in most areas considered. The opposite is true for toll roads which should, in principle, make these projects easier to procure and finance. Vietnam and Indonesia (viewed together as the riskiest markets) are expected to present the most opportunities in the toll road sector.

With mature infrastructure in place, it is not surprising that Singapore is viewed as offering the fewest opportunities. Surprisingly Malaysia, despite the ninth Malaysia plan, is viewed as offering fewer opportunities but this may be a reflection of the domestic nature of the market. This finding may come as a surprise to the Malaysian government which is intent on attracting foreign investment.

“The general perception that all PPP should transfer demand risk to the private sector is altogether flawed” (Respondent)

“Legal, regulatory and concession frameworks must be fair, clear and consistently reinforced for private sector investors and lenders to take market risk” (Respondent)

Supply risks

Rank	Sector
1	Heavy rail
2	Sea ports
3	Airports
4	Toll roads
5	Mass rapid transit

Demand risks

Rank	Sector
1	Heavy rail
2	Toll Roads
3	Mass rapid transit
4	Sea ports
5	Airports

Completion risks

Rank	Sector
1	Airports
2	Mass rapid transit
3	Heavy rail
4	Sea ports
5	Toll Roads

Operational risks

Rank	Sector
1	Airports
2	Mass rapid transit
3	Heavy rail
4	Sea ports
5	Toll Roads

Environmental risks

Rank	Sector
1	Airports
2	Sea ports
3	Heavy rail
4	Mass rapid transit
5	Toll Roads

Engineering risks

Rank	Sector
1	Mass rapid transit
2	Airports
3	Sea ports
4	Heavy rail
5	Toll Roads

Political risks

Rank	Sector
1	Mass rapid transit
2	Airports
3	Heavy rail
4	Toll Roads
5	Sea ports

Counterparty risks

Rank	Sector
1	Toll Roads
2	Mass rapid transit
3	Heavy rail
4	Airports
5	Sea ports

Legal and regulatory risks

Rank	Sector
1	Mass rapid transit
2	Airports
3	Heavy rail
4	Toll Roads
5	Sea ports

Overall risks

Rank	Sector
1	Mass rapid transit
2	Airports
3	Heavy rail
4	Sea ports
5	Toll roads

Foreign exchange risks

Rank	Sector
1	Mass rapid transit
2	Heavy rail
3	Toll Roads
4	Sea ports
5	Airports

Market opportunities

By country

Toll roads

Rank	Country	Overall
1	Vietnam	Vietnam
2	Indonesia	China
3	China	Indonesia
4	Thailand	Thailand
5	Malaysia	Malaysia
6	Singapore	Singapore

Heavy rail

Rank	Country	Overall
1	China	Vietnam
2	Vietnam	China
3	Indonesia	Indonesia
4	Thailand	Thailand
5	Malaysia	Malaysia
6	Singapore	Singapore

Mass rapid transit

Rank	Country	Overall
1	China	Vietnam
2	Vietnam	China
3	Indonesia	Indonesia
4	Thailand	Thailand
5	Malaysia	Malaysia
6	Singapore	Singapore

Sea ports

Rank	Country	Overall
1	Thailand	Vietnam
2	China	China
3	Indonesia	Indonesia
4	Vietnam	Thailand
5	Malaysia	Malaysia
6	Singapore	Singapore

Airports

Rank	Country	Overall
1	Vietnam	Vietnam
2	Indonesia	China
3	China	Indonesia
4	Thailand	Thailand
5	Malaysia	Malaysia
6	Singapore	Singapore

By sector

China

Rank	Sector	Overall
1	Mass rapid transit	Mass rapid transit
2	Toll roads	Toll roads
3	Sea port	Sea port
4	Heavy rail	Heavy rail
5	Airport	Airport

Singapore

Rank	Sector	Overall
1	Mass rapid transit	Mass rapid transit
2	Sea port	Toll roads
3	Toll roads	Sea port
4	Airport	Heavy rail
5	Heavy rail	Airport

Indonesia

Rank	Sector	Overall
1	Toll roads	Mass rapid transit
2	Sea port	Toll roads
3	Mass rapid transit	Sea port
4	Airport	Heavy rail
5	Heavy rail	Airport

Thailand

Rank	Sector	Overall
1	Mass rapid transit	Mass rapid transit
2	Toll roads	Toll roads
3	Sea port	Sea port
4	Heavy rail	Heavy rail
5	Airport	Airport

Malaysia

Rank	Sector	Overall
1	Mass rapid transit	Mass rapid transit
2	Toll roads	Toll roads
3	Sea port	Sea port
4	Heavy rail	Heavy rail
5	Airport	Airport

Vietnam

Rank	Sector	Overall
1	Toll roads	Mass rapid transit
2	Sea port	Toll roads
3	Mass rapid transit	Sea port
4	Airport	Heavy rail
5	Heavy rail	Airport

Some of the opportunities

Country	Sector	Opportunity
China	Toll road	35km, US\$1.125 Qingdao Gulf Bridge Project
China	Mass rapid transit	Beijing Metro Line 4 and Beijing Metro Line 9 projects
China	Port	US\$500 million Phase 3 Dalian port expansion
Indonesia	Port	US\$237m Margagiri - Ketapang ferry terminal, Margagiri - Baten province
Indonesia	Airport	US\$226m Soekarno Hatta terminal extension and cargo terminal facilities, Jakarta
Indonesia	Toll road	104 km toll road from Jogja - Bawen, Central Java
Indonesia	Toll road	84 km toll road from Ngawi - Kertosono, Central Java
Indonesia	Toll road	75.7 km toll road from Semarang - Solo, Central Java
Malaysia	Toll road	Second Penang bridge proposed
Malaysia	Heavy rail	North-South railway double tracking project
Malaysia	Heavy rail	Kuala Lumpur - Singapore high speed link proposed
Singapore	Toll road	The government has announced the possibility of PPP structures to be used on future road projects
Thailand	Mass rapid transit	Planned development of the Blue, Orange, Purple and Green lines in Bangkok. Total track - 271 km
Thailand	Port	New ports proposed in Pak Bara and Songkhla 2.
Thailand	Heavy rail	130 km link between new Pak Bara and Songkhla 2 ports to form 'southern landbridge'
Thailand	Toll road	The Department of Highway's master plan comprises 4,150 km of 13 motorways to be built by 2016. Within this plan 900 km has been identified in 8 projects
Thailand	Heavy rail	The State Railways of Thailand propose 832 km of double tracking to be laid on the national network
Vietnam	Mass rapid transit	Ho Chi Minh City proposed Routes 5 and 6
Vietnam	Toll road	Nhieu Loc - Thi Nghe Elevated Road, Ho Chi Minh City

Norton Rose in Asia

We serve the Asia infrastructure markets through an integrated team of specialists based in Bangkok, Beijing, Hong Kong, Shanghai and Singapore.

Recent successful transportation infrastructure projects

Sector	Country	Project	Norton Rose's Role
Airport	Cyprus	Paphos and Larnaca Airports	Adviser to sponsor consortium, Hermes Airports
Airport	Turkey	Dalaman Airport international terminal	Adviser to lender, HVB AG
Mass rapid transit	Thailand	New suvarnabhumi airport rail link	Adviser to sponsor, Siemens
Mass rapid transit	UK	Refurbishment of London Underground	Adviser to 29 syndicated lenders
Port	China	Acquisition of an interest in Changshu Xinghua Port, located on the Yangtze River	Adviser to purchaser, Macquarie International Infrastructure Fund
Port	Poland	Gdansk Container Terminal	Adviser to lender, DVB Bank
Port	China	Terminal Port Facility in Ningbo	Adviser to lender, BNP Paribas
Toll Road	Canada	Golden Ears Bridge	Adviser to lenders, Dexia Credit Local, DEPFA Bank and monoline insurers Ambac and XL
Toll Road	Germany	Advising on the structure of the Federal toll road programme known as the "A-Model"	Adviser to Federal Ministry of Transport
Toll Road	Ireland	N25 Waterford Bypass	Adviser to lenders, BBVA, Banco Santander and the European Investment Bank
Heavy Rail	China	Railway from Yantai to Qingdao	Adviser to sponsor, Alstom Transport

Contacts

Bangkok

Somboon Kitiyansub

Beijing

Jean-Marc Deschandol

Steven Towell

Hong Kong

Peter Haslam

London

Martin McCann

Shanghai

Jim James

Singapore

Jeff Smith