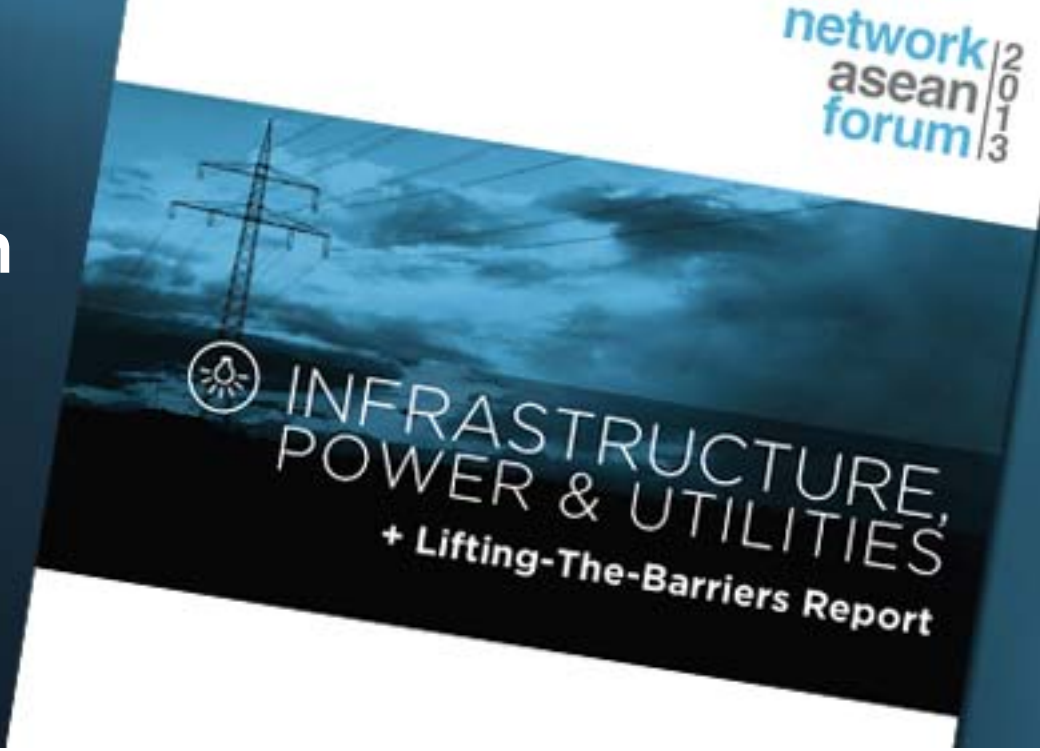
ASEAN Research Digest
SPECIAL EDITION

Research Partner: McKinsey&Company



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The ASEAN Research Digest is a quarterly publication aimed at communicating research findings related to ASEAN integration, cooperation and development that are relevant to business and industry in anticipation of the formation of the ASEAN Economic Community in 2015.

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OVERVIEW

CONNECTIVITY

HEALTHCARE

AVIATION

CAPITAL MARKETS

INFRASTRUCTURE, POWER AND UTILITIES

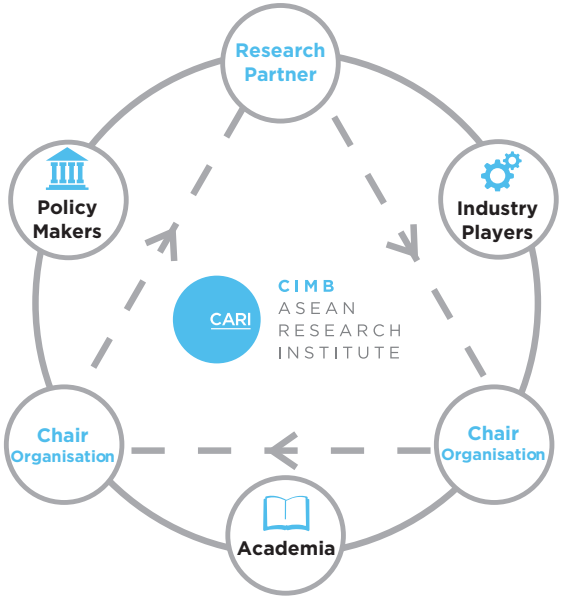
FINANCIAL SERVICES

Research objectives:
The CIMB ASEAN Research Institute (CARI) in collaboration with the ASEAN Business Club (ABC) launched the Lifting-The-Barriers (LTB) Initiative in early 2013 as an integrated year long research platform involving core research as well as stakeholder engagement.

The objective was to adopt a vertical approach by means of identifying bottlenecks and barriers hindering free trade of prioritised sectors in the context of the ASEAN Economic Community (AEC).

The LTB Initiative targets six identified sectors which have pressing relevance to the business landscape in ASEAN and will play a major role in the successful formation of the AEC. The six sectors were Connectivity, Healthcare, Aviation, Capital Markets, Financial Services and Infrastructure, Power & Utilities.

RESEARCH STRUCTURE



Two leading **ASEAN corporations** were selected to champion each sector, providing the direction and experiential insight into their industry. The input from these champions, or chair organisations, were key to understanding the issues faced by industry stakeholders and to develop the recommendations as part of the discourse.

CARI's Research Working Committee and its Strategic Advisors also worked closely with each of the six nominated Research Partners in producing these reports.

The Research Partners were either top management consulting firms and academic institutions who provided the technical knowledge and quantitative analysis required.

METHODOLOGY

PHASE I PRELIMINARY RESEARCH

Core research and compilation of qualitative and quantitative input from targeted sectors

PHASE II ABC FORUM

LTB Roundtables + Plenary Sessions

PHASE III LTB REPORTS

The final outcome, a set of white papers, for ASEAN policy makers and community to effect real changes in the region.

Phase I: LTB Preliminary Research
Phase I of the LTB Initiative involves core research and compilation of qualitative and quantitative responses as surveyed from within each of the six business sectors. The outcome of Phase I are the six sector-based Preliminary Papers, intended to provide a base to build discussions on in the next phase.

Phase II: Network ASEAN Forum (NAF) 2013
The NAF was designed to convene six sector based roundtables with the aim of identifying barriers. The NAF served as a platform for different stakeholders to deliberate on relevant issues and to collectively propose viable recommendations to remedy them. Participants of this discussion include regulators, private sector leaders, service providers, manufacturers, academics and many more. The selection of discussants aimed to provide a well rounded and reflective debate.

Phase III: Launch of the LTB Reports
The third and final phase of the LTB Initiative saw the consolidation of all research and discussion materials from Phase I and Phase II. Phase III involved the launch of the final LTB Reports, as a set of white papers presented to the relevant ASEAN policy makers .

ASEAN SHOULD CLEAR REGULATORY FRAMEWORK, IMPROVE PROJECT PREPARATIONS, AND SECURE LONG-TERM FINANCING

Title of Study: Infrastructure, Power and Utilities Lifting-The-Barriers Report
By: McKinsey & Company | **Published by:** CARI, August 2013 | **Chair:** Jaime Augusto Zobel de Ayala, CEO, Ayala Corporation
Chair: Francis Yeoh, Managing Director, YTL Corporation

McKinsey&Company

BACKGROUND

Research objective:
To identify key barriers to ASEAN connectivity in infrastructure, power and utilities, and to provide recommendations on how to remove those barriers.

MULTIPLIER EFFECT OF INFRA-STRUCTURE DEVELOPMENT

- Infrastructure is a rare "win-win" situation which can boost overall economic productivity in the long run and boost employment in the short run.
- McKinsey Global Institute's research suggests:
  - An increase of infrastructure investment by **1% of GDP** could increase direct and indirect employment
    - **by 3.4 million In India**
    - **1.5 million in the US and**
    - **700,000 in Indonesia**
  - Infrastructure investments can also improve health, education and social outcomes.
    - In Assam India, a 1% increase in the electrification rate led to a 0.17% improvement in the literacy rate.

ECONOMIC IMPACT OF INFRASTRUCTURE DEVELOPMENT

- **Competitiveness**
  - According to the World Economic Forum's (WEF) annual survey on business across countries, well-developed infrastructure as a key pillar for country competitiveness.
  - There is significant variability in the quality of existing infrastructure across the ASEAN member states – while Singapore ranks 3rd globally for its world-class infrastructure, the Philippines, Vietnam, Myanmar and Indonesia have relatively low levels of infrastructure.
- **Environment**
  - Most estimates of global infrastructure spend do not account for the additional cost of making infrastructure resilient to the effects of climate change or of lessening the impact of infrastructure on the environment.
  - The environmental costs of infrastructure development in some developing countries have already reached an estimated 4-8% of GDP.
- When delivered well, infrastructure investment can impact economic growth with significant multiplier effects:

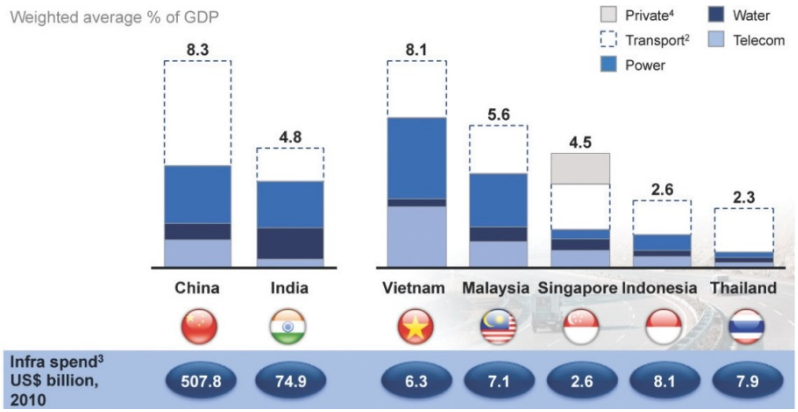
Global average: Infrastructure investment up by 1% of GDP → GDP increases by 1.6%

- The quality and extensiveness of infrastructure significantly impacts economic growth and reduces income inequalities.
  - Transport and telecom infrastructure enables connectivity with less developed and rural communities, increasing access to economic activities.

INFRA-STRUCTURE DEVELOPMENT IN ASEAN

- Failing to meet the infrastructure needs of ASEAN could stifle GDP growth and employment, as well as compromise human development efforts in less-developed ASEAN members.
- ASEAN countries have historically spent an average of **3% of GDP on infrastructure** each year, slightly **below the world average of 3.8%**.
- There has been substantial variability in the infrastructure spend on power, water and telecom between the different ASEAN countries.

Amount spent on infrastructure, 1992–2011



1. Percentage of 2010 world GDP generated by the 86 countries in McKinsey analysis
2. Theoretical estimate for transport in ASEAN countries based on multiple reports and average of equivalent countries in database
3. Excludes transport infrastructure expenditure for ASEAN countries
4. No detailed breakup available for private sector investment in Singapore

Source: IHS Global Insight; GWI; IEA; ITF; McKinsey Global Institute analysis, IMF, World Bank, Ministry of Transport

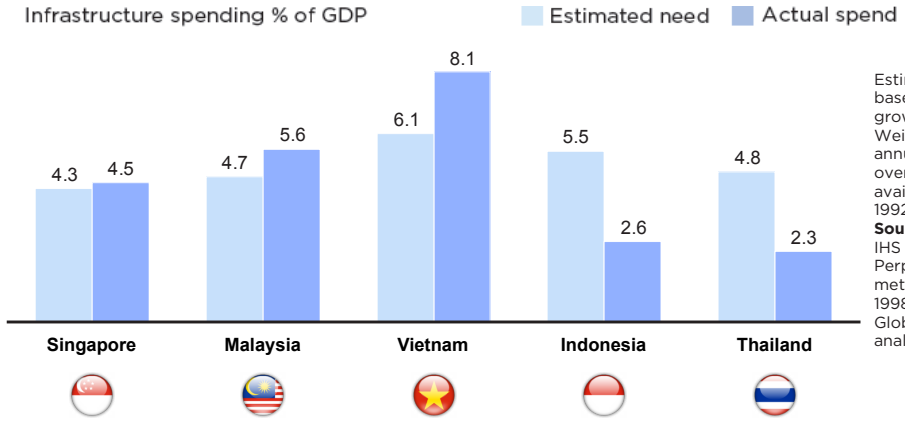
INFRA-STRUCTURE DEVELOPMENT NEED IN ASEAN

- Over the last decade, there have been large investments made in the transport sector across ASEAN, as well as in the power sectors in Vietnam and Malaysia, and the telecom sector in Vietnam.
- McKinsey Global Institutes' research on infrastructure productivity shows that the value of **infrastructure stock** in most economies **averages around 70% of GDP.**

Infrastructure stock = financial value of physical infrastructure assets such as km of roads, # of airport runways etc

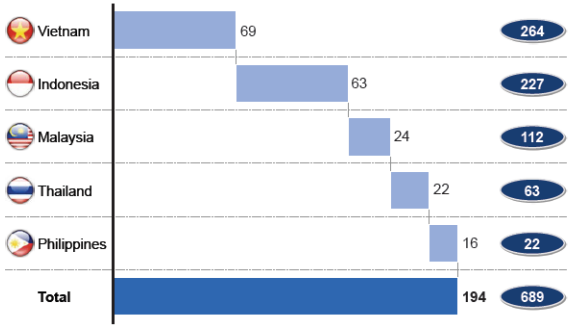
- To accommodate expected GDP growth, ASEAN countries will have to spend at least **US$2.4 trillion in infrastructure investments** from 2013-2030 to maintain the benchmark infrastructure stock.
- For the less developed economies to meet their basic human development needs such as safe drinking water, basic sanitation, and accessible power, they will need to **invest substantially more** than this baseline estimate.
- Indonesia and Thailand will have to substantially increase their infrastructure spending to maintain an infrastructure stock of about 70% of GDP, while Singapore, Malaysia and Vietnam are spending above their estimated need.

Actual spend and estimated need of infrastructure spending as a % of GDP



Estimated need based on projected growth, 2013–30 Weighted average annual expenditure over years of available data, 1992–2011
Source: ITF; GWI; IHS Global Insight; Perpetual inventory method, OECD, 1998; McKinsey Global Institute analysis

Identified mega projects across ASEAN over the next 7-10 years

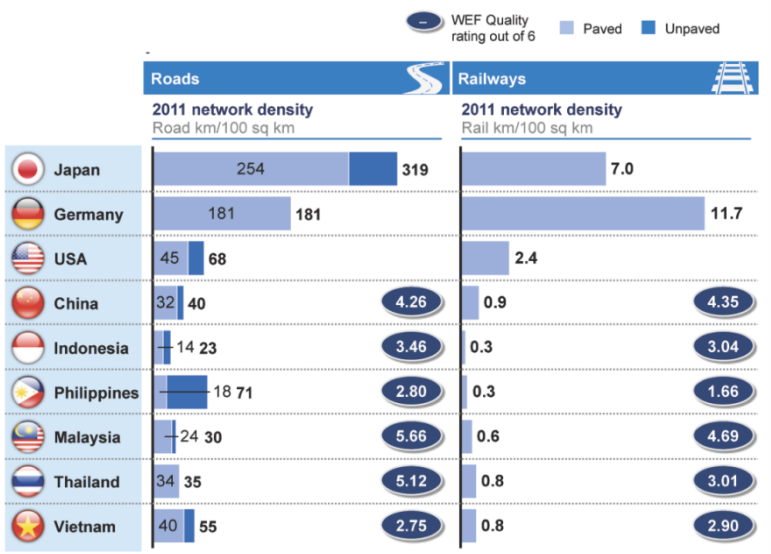


Source: CIA Factbook; Infrastructure Africa, World Economic Forum Survey 2010, McKinsey analysis

- A review of the planned mega projects in ASEAN is encouraging but the estimated US$689 billion falls short of what is required to catalyse economic connectivity across these countries.

ASEAN CONNECTIVITY MASTERPLAN

- The **ASEAN Connectivity Master Plan (ACMP)** envisages major cross-border infrastructure **linkages in roads, rail, power and gas valued at almost US$600** billion during 2006-2015, with the aim of creating a more connected ASEAN that can leverage **lower transport and transaction costs** and consolidate into a **commerce hub.**
- The physical connectivity part of the ACMP includes hard infrastructure in transport, communications and energy, as well as the associated regulatory frameworks.
- Projects that have been launched under the ACMP include:
  - The ASEAN Highway Network
  - Singapore Kunming Rail Link
  - Trans-ASEAN Gas Pipeline
  - ASEAN Power Grid memorandum
- Individually, many of the ASEAN countries lack in basic infrastructure, such as airports roads and rail, which limits their ability to contribute effectively to the regional initiatives.



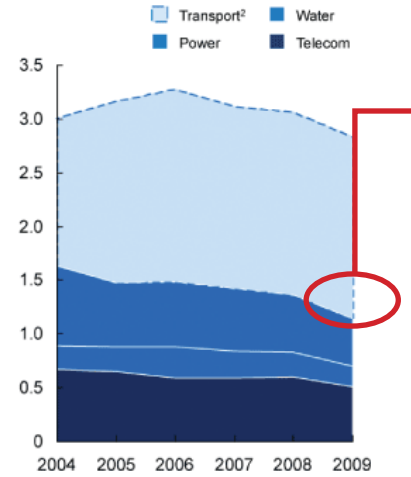
Source: CIA Factbook; Infrastructure Africa, World Economic Forum Survey 2010, McKinsey analysis

BACKGROUND

INDONESIA

- Indonesia's infrastructure challenge is the key impediment to reaching a potential **GDP growth rate of 8%,** according to McKinsey Global Institute.
- The government has acknowledged that **Indonesia needs around US$30 billion annually** (4 % of GDP) in infrastructure investment for the next 5 years.
- The capacity of the road network on the island of Java, home to about 60% of the population, **would need to be tripled** but has seen limited expansion in the last decade.
- Law and regulation changes as well as new initiatives are being instituted to enable faster infrastructure development, including
  - the "fast-track" electricity development programmes (2006)
  - private sector participation in electricity (2009)
  - the land acquisition law (2012)
- Infrastructure spending in nominal terms has been on the rise but it has consistently stayed well below 2% of GDP.
- Government initiatives have thus far been insufficient in catalysing the infrastructure development that the country needs.

Infrastructure spending, 2004-2009



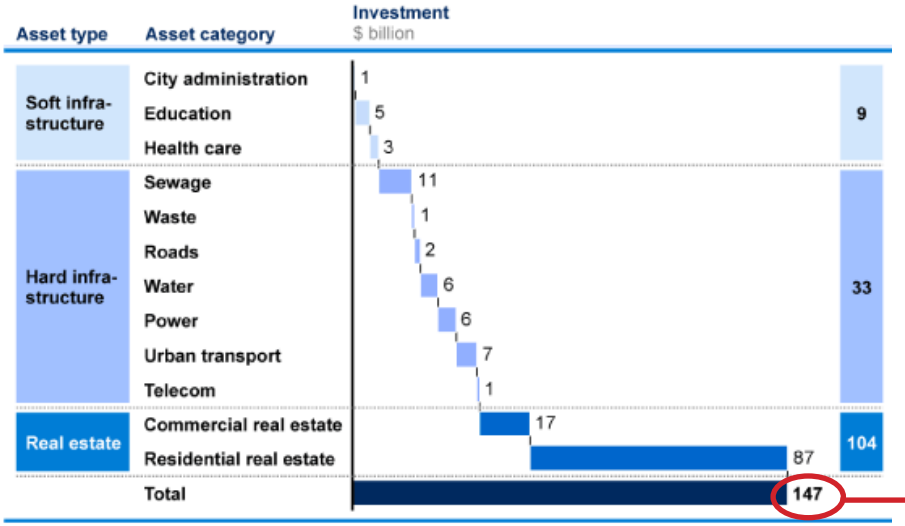
Source: McKinsey Global Institute analysis, : Indonesia's Ministry of National Development Planning

Indonesia's infrastructure spending excluding transport is far below 2% of GDP.

MYANMAR

- In 2011, Myanmar spent **only US$800 million on infrastructure**. However, the country has the potential to quadruple the size of its economy, from US$45 billion in 2010 to over US$200 billion in 2030 but in order to support the targeted 8% GDP growth, Myanmar needs to increase its infrastructure stock.
- Myanmar is estimated to need a **total infrastructure and real estate investment of US$320 billion between 2010-2030**, according to McKinsey Global Institute report on Myanmar.
- About 60% of this investment needs to be in residential and commercial real estate, but power plants, water infrastructure, road and rail networks also require substantial investment.
- With increasing urbanisation, **large cities alone will need about 45%** of the estimated infrastructure need.
- There are several megaprojects being planned by the government, including:
  - Dawei special economic zone
  - Sittwe port on the Indian Ocean
  - Kyaukpyu Industrial Zone

Infrastructure need of large cities in Myanmar



Source: McKinsey Global Institute CityScope Database 2.0; Pike Research; Japan International Corporation Agency; McKinsey Infrastructure Practice benchmarks per asset type; McKinsey Global Institute analysis

Large cities in Myanmar would likely need to invest US$147 billion from 2010-2030 to upgrade infrastructure for existing population and new arrivals.

KEY FINDINGS

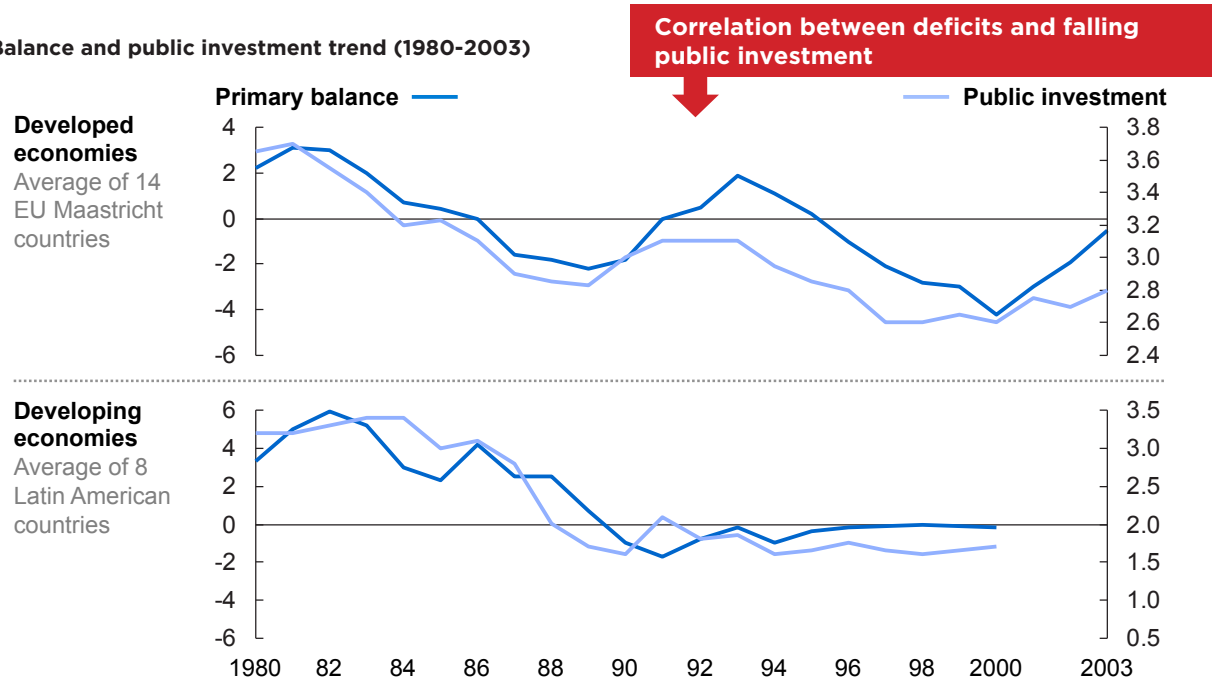
- Sustaining the level of infrastructure investment required within the ASEAN countries will be challenging, let alone delivering on the large-scale cross-border projects envisioned by the ACMP.

The study identifies four main barriers.

1. Fiscal constraints

- In ASEAN today, the **debt to GDP ratio** is on average 50%:
  - Malaysia = 53%
  - Philippines = 51%
  - Vietnam = 45%
- With such high debt to GDP ratios, these countries are under **fiscal pressure** to bring public debt down to more manageable levels.
- Many countries also face the **challenge of removing subsidies** from the government budgets, such as in Indonesia where petrol and electricity subsidies take up about 20% of the government budget.
- These governments need to make choices between long term infrastructure and more immediate priorities such as education and healthcare.
- Academic research has shown that there is **correlation between rising deficits and falling public investment.**
- Part of the problem is that most governments use cash-accounting standards that do not sufficiently differentiate between long term investment and near-term consumption.

Balance and public investment trend (1980-2003)



Note: Not to scale.

Source: Calderón and Servén (2004); Fitch database; World Development Indicators; McKinsey Global Institute analysis

- Some have hoped that **increased private financing**, particularly from institutional investors such as pension funds, insurance companies, and sovereign wealth funds, will help address the growing need for infrastructure finance.
- In addition, **public-private partnerships (PPPs) and privatisation of state-owned assets** are often viewed as an important part of the solution to infrastructure financing challenges.
- However, governments are often poorly prepared to tap into private financing due to **unclear allocation of risk and returns** between the public and private sector, and often **lack the legal, regulatory and institutional frameworks** that are a critical prerequisite for successful PPPs.
- Moreover, **private financing is significantly more expensive** than public debt, and the high efficiency linked to the private sector can be achieved via design-build-operate contracts.

2. Lack of investor-ready PPP project pipeline

- Some ASEAN countries have launched portfolios of PPP projects to tap into private financing, including Thailand, Indonesia and Philippines.
  - Indonesia estimates that only 15% of their required investment can be financed by the public sector, the remaining will need to rely on PPPs.
  - The Philippines has prepared over 16 PPP projects worth more than US$ 4 billion, but has only successfully bid out two.
- The **low success rate for PPPs** across ASEAN can be attributed to **poor project selection, lack of sufficient preparation** for the private sector to adequately assess the project viability, and disagreement over the **allocation of risk and returns** between the public and private sectors.
- Some of the **root causes** of poor planning and decision making include the **failure to link infrastructure planning** to broader social and economic goals, routine **under-estimation of costs** and **over-statement of benefits**, the pressure to allocate resources to cater to **narrow political interests**, and in some cases **corruption**.
- Another cause of PPP failure is the inability of the public and private sector to agree on the allocation of roles and responsibilities.
- **Lack of clarity** on policies around market structure, pricing and subsidies, and ownership and finance can lead to delays in implementation.
- Finally, there is a lack of **capability** to design, structure, and deliver PPP projects in the government entities to meet the growing demand in many ASEAN countries.
- These factors have contributed to the **limited pipeline of PPP projects** in the region and must be addressed to catalyse future infrastructure development.

KEY FINDINGS

3. Complex execution due to regulatory and institutional inefficiencies

- Regulatory and institutional **inefficiencies are a major hindrance** to both public and private sector investment in infrastructure.
- Securing regulatory approvals usually takes many years and sometimes longer than the actual construction time.
- The necessary **involvement of various stakeholders** such as environmental interest groups, local administrative authorities, communities, and businesses and property owners can **further slow down** the process.
- **Land acquisition** is often one of the main regulatory hurdles.
  - In Indonesia, laws are being drafted to prevent minority land owners to hold up the land acquisition process to gain from land speculation.
  - In Malaysia and Singapore, laws allow the government to acquire land for projects that are deemed to be in the public interest.
- These processes can and should be shortened significantly. Best practice in issuing permits involves the rigorous **prioritisation of projects, clear roles and responsibilities, transparency on performance,** and **time-bound process steps**

4. Ineffective governance systems

- The delivery of services should happen within a framework of well-defined systems with effective coordination between the critical actors.
- In the case of infrastructure, **the system often functions poorly**, and many critical actors do not regard infrastructure as a system but think in terms of single projects.
- There are typically **multiple authorities**, agencies and ministries involved covering different sectors (i.e. roads, rail) and different functions (i.e. financing, contracting).
- There is also often **not a clear separation of technical and political responsibilities**, and the long-term view required for infrastructure investments is often missing.
- The **lack of capability** in effective planning, delivery and operation of infrastructure is also considered to be a major barrier to effective implementation.

Three major near-term recommendations:

- The study provides three **major near-term recommendations** to potentially catalyse infrastructure development in the region.

1. A coherent transparent regulatory framework

- **Stable regulations** that invite private sector participation, especially in large scale infrastructure is vital to achieve the goals of the ACMP and AEC 2015.
- ASEAN should set up an **Institute for Regulators**, along the lines of the Asian Corporate Governance Association, which would train high calibre regulators that understand the benefits of coherent transparent regulations.
- ASEAN should also create **forums for exchanging knowledge** and best-practice solutions across ASEAN.

2. Sufficient upfront investment in and review of project preparation

- **Sufficient investment** in the early stages of **project selection and preparation** is critical to ensuring that the right infrastructure is built at optimal cost.
- Every project should go through a **detailed cost-benefit** or **feasibility analysis** as well as a business case analysis to decide how to finance the project.
- The **feasibility studies must be credible.** Insufficient data and lack of rigorous analyses result in misinformation on costs and inaccurate demand projections.
- ASEAN governments should establish mechanisms that encourage upfront investment in rigorous and high-quality project preparation.
  - The Ministry of Finance could set up a **national revolving fund** that is dedicated to reimbursing the project preparation costs

3. Creating mechanisms for long-term financing

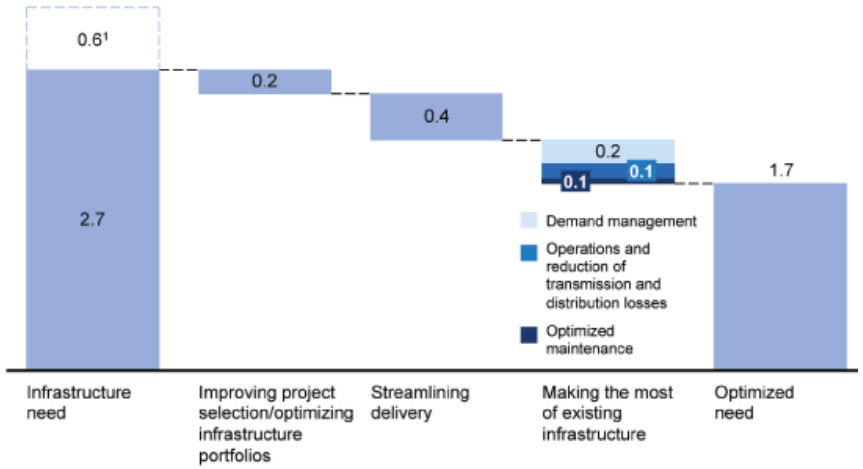
- To **incentivise the private sector** to invest in infrastructure ASEAN should set up mechanisms, such as infrastructure guarantee funds, transparency on foreign investors' operations, and domestic bond market development.
- **Partnerships** between national infrastructure guarantee funds and multilateral organisations, would help increase investor confidence.
- **Improving the fund flow** in ASEAN, including pooling investments for infrastructure projects from multiple AMS, could open up the market for long term foreign investment as well.

KEY FINDINGS

- While the above listed near-term recommendations are steps in the right direction, they will be **insufficient** to meet the growing demand in ASEAN.
- In order to realise the ASEAN connectivity goals, ASEAN governments and the private sector need to **re-think** how they can make the **infrastructure sector more productive**.
- A recent McKinsey Global Institute Report has found that by scaling up best practice in selecting and delivering new infrastructure projects, and getting more use out of existing infrastructure, **nations could obtain the same amount of infrastructure for 40% less**, meaning a **60% improvement in infrastructure productivity.**

Global infrastructure investment need and how it could be reduced

Yearly average, 2013–30
$ trillion, constant 2010 dollars



1 Telecom investment need beyond the scope of this paper.
Source: McKinsey Global Institute analysis

- Achieving these productivity gains will not require ground breaking innovation, but merely the application of established and proven practices from across the globe.
- McKinsey research finds that pulling three main levers can deliver the potential savings:

1. **Improving project selection and optimising infrastructure portfolios**
2. **Streamlining delivery**
3. **Making the most of existing infrastructure assets**

CONCLUSION

- ASEAN countries continue to invest in poorly conceived projects, take a long time to approve them, miss opportunities to innovate in how to deliver them, and then don't make the most of existing assets before starting new expensive projects.
- Full ASEAN connectivity will only be achievable when each individual country attains a certain **basic level of infrastructure.**
- It is the responsibility of ASEAN governments to come together and create a stable **regulatory and policy environment** for potential investors to catalyse the much-needed infrastructure development.

Summary of recommendations to lifting the barriers

FISCAL CONSTRAINTS	
Barriers	**Recommendations**
Fiscal pressure in ASEAN nations limits direct public investment.	Governments should encourage private investment by setting up mechanisms, such as infrastructure guarantee funds, transparency on foreign investors' operations, and domestic bond market development.
PUBLIC-PRIVATE PARTNERSHIPS	
Barriers	**Recommendations**
There is a lack of a robust pipeline of projects that can be financed by the private sector.	AMS should invest sufficiently in project preparations to help the private sector assess viability of projects.
REGULATORY AND INSTITUTIONAL INEFFICIENCIES	
Barriers	**Recommendations**
Uncertain local regulatory and permitting processes cause delays.	ASEAN should set up an Institute for Regulators to implement the culture of coherent transparent regulations in ASEAN.
GOVERNANCE SYSTEMS	
Barriers	**Recommendations**
The lack of strong institutional frameworks inhibits effective coordination.	AMS should clarify the division of responsibilities between politicians and technocrats. Policy makers should set the strategic directions while experts choose projects and execute.

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