



InfraCompass

Set your infrastructure policies in the right direction

Global Infrastructure Hub
In cooperation with KPMG



Global
Infrastructure
Hub

A G20 INITIATIVE



INFRASTRUCTURE,
DELIVERED RIGHT,
PROMOTES ECONOMIC
GROWTH AND LIFTS
COMMUNITIES
OUT OF POVERTY.

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FOREWARD

INFRACOMPASS
SET YOUR INFRASTRUCTURE
POLICIES IN THE RIGHT DIRECTION

THE INFRASTRUCTURE GAP AROUND THE WORLD REMAINS WIDE AND IS, IN MANY PLACES, WIDENING. GOVERNMENTS CAN AND ARE REDUCING THIS GAP BY REAPING THE BENEFITS OF PARTNERSHIPS WITH THE PRIVATE SECTOR TO BUILD BETTER QUALITY, MORE COST EFFECTIVE INFRASTRUCTURE.



CHRIS HEATHCOTE
CHIEF EXECUTIVE
OFFICER
GLOBAL INFRASTRUCTURE HUB

INFRACOMPASS IS THE FIRST SYSTEMATIC AUDIT OF INFRASTRUCTURE DATA TO VERIFY WHICH POLICIES AND PRACTICES INCREASE THE FLOW AND QUALITY OF PUBLIC AND PRIVATE INFRASTRUCTURE INVESTMENT. IN DOING SO, INFRACOMPASS SUPPORTS GOVERNMENTS' AND OUR PARTNER ORGANISATIONS' EFFORTS TO DELIVER QUALITY INFRASTRUCTURE.

CHRIS HEATHCOTE
GLOBAL INFRASTRUCTURE HUB

The infrastructure gap around the world remains wide and is, in many places, widening. However, some governments are closing this gap. By tapping into the drivers of successful infrastructure planning and delivery to become more competitive and attractive for investment, they are reaping the benefits through stronger partnerships with the private sector and better quality infrastructure.

InfraCompass pinpoints exactly how they do this. Through the lens of six key drivers, it allows countries to focus on specific areas for improvement or reform, with confidence (based on evidence) that these improvements will make a tangible difference to the delivery of infrastructure, with all its attendant benefits of value for money, cost and time efficiencies, and public trust.



JAMES STEWART
GLOBAL INFRASTRUCTURE
CHAIRMAN
KPMG

INFRACOMPASS IS A NEW GROUND BREAKING TOOL TO HELP GOVERNMENTS AROUND THE WORLD IMPROVE THE WAY THAT THEY ACCELERATE AND DELIVER THEIR MUCH NEEDED INFRASTRUCTURE INVESTMENT

JAMES STEWART
KPMG

Robust governance, capable institutions, leadership and consistent regulatory frameworks, combined with well-planned and procured projects, all contribute to the delivery of successful, valuable infrastructure.

Emerging countries are reforming their practices and attracting greater private investment to increase access to transport, energy, social, water and telecommunications services that are efficient, higher quality and value for money. This in turn delivers greater growth, productivity, jobs and trade.

Using the insights provided by InfraCompass, governments and private investors will be better able to focus on the areas that will result in change and better outcomes for their market. And with leadership and a willingness to pursue the reforms highlighted by InfraCompass, this framework provides a unique opportunity to drive global prosperity and to secure greater social and economic benefits from quality infrastructure.

EXECUTIVE SUMMARY



QUALITY INFRASTRUCTURE ENHANCES QUALITY OF LIFE AND DRIVES GLOBAL GROWTH. INFRACOMPASS HIGHLIGHTS THE POLICIES AND PRACTICES FROM AROUND THE WORLD THAT ARE MOST CLOSELY LINKED TO SUSTAINABLE AND EQUITABLE INFRASTRUCTURE.

EXECUTIVE SUMMARY

INFRASTRUCTURE, DELIVERED RIGHT, PROMOTES ECONOMIC GROWTH AND LIFTS COMMUNITIES OUT OF POVERTY. BUT OFTEN, INFRASTRUCTURE PROJECTS FAIL TO DELIVER THEIR FULL POTENTIAL BECAUSE THEY ARE STYMIED BY WEAK GOVERNANCE OR REGULATORY STRUCTURES, LOST IN BUREAUCRATIC DENSITY, OR POORLY PLANNED.

The infrastructure challenge has been discussed at length, but with very little clarity around the solution. InfraCompass defines the factors that contribute to quality infrastructure and increase private sector participation across the full infrastructure lifecycle.

InfraCompass identifies the key drivers of successful planning and delivery, and allows jurisdictions to focus on the most important drivers affecting their infrastructure market.

InfraCompass – An evidence based approach to delivering quality infrastructure

The nature of infrastructure means that capital commitments are high, ongoing operation and maintenance is expensive and investment decisions can be heavily politicised. Infrastructure markets are complex in nature – they involve the coordination of long term funding and planning, government, community and private markets.

At the same time, low levels of consistent and comparable data across countries make it difficult for decision-makers to fine tune their policies towards better outcomes and learn from best practice among their peers.

InfraCompass breaks down this complexity and identifies the most important drivers of quality infrastructure planning and delivery:

- Robust **governance**, leadership and capable institutions that support the rule of law, transparency and consultation, and effective and independent decision making structures for infrastructure investment
- Consistent and predictable **regulatory frameworks** that are transparent, and welcoming of investment and competition
- **Permits, approvals and land acquisition processes** that are timely, predictable and navigable, and which minimise red tape to appropriate and justifiable levels
- **Planning**, not just of projects, but transparent setting of strategic social economic-environment goals and integrated sectoral and system plans, enabling projects to be measured against clear objectives
- **Procurement practices** that are transparent, enable efficient risk allocation and innovation, deliver value-for-money, enhance competition and provide certainty to all parties

KEY FINDINGS

The 49 countries analysed by InfraCompass account for just over 90% of global GDP and slightly less than 75% of global population. Approximately two-thirds of the countries are classified by the World Bank as 'high income' (also referred to as 'developed'), with the balance classified as either middle or lower income (collectively, 'emerging').

Emerging economies are catching up with developed countries in terms of the quality of their infrastructure, with the list of top improvers over the past decade dominated by emerging countries. Central to this strong performance is that many emerging countries have seen rapid policy development, including:

- better governance through lowering corruption levels and enhancing the rule of law
- improved regulatory quality
- simplifying permit procedures and land administration.

Across economies, there are few stronger drivers of investment than the rule of law. Upstream enabling environment reforms are key to unlocking quality infrastructure environment in over 20 of the countries analysed.

Permits, land acquisitions and environmental approvals policies vary considerably across economies, suggesting there is an opportunity to look for best practice amongst peers. While several emerging and developed countries have very efficient management practices in these areas, some countries struggle to implement these processes efficiently. This has a direct impact on the timely and cost-effective delivery of infrastructure.

The same is true for regulatory and competition frameworks, with fewer restrictions on investment and capital flows, and more consistent and predictable sector regulation that incentivises competition, investment and innovation, needed to fuel global growth.

The ability to see infrastructure projects through to delivery emerges as the area most in need of improvement across the majority of economies, with particular opportunities in emerging markets. The vast majority of developed countries perform better in this element of InfraCompass - not surprising, given that their technical capabilities have been built up over many years. Developed nations with strong track records of delivery and trusted institutions remain the leaders in the delivery and operation of infrastructure assets.

Lower risk perceptions and better historic data lead to more informed decision making by governments and investors. Even so, many infrastructure projects still fail in advanced countries, highlighting the challenges for emerging economies as they look to deliver infrastructure more effectively.

In addition to effective planning, procurement and approvals processes, the capability and talent of those following the process - and their leadership, especially when things don't go to plan - are key determining factors in attracting investment and establishing a track record of delivery.

Transparent, consultative strategic plans, backed up by a pipeline of projects, and followed through into investment by governments with bipartisan support, differentiate a few top performers from the rest. Emerging markets, in particular, have improved their public planning processes over recent years with the publication of integrated sector plans and signals to market on investment priorities.

More than half the countries analysed have consistent and equitable procurement interfaces with the private sector. However, countries could reduce their transaction costs and improve deal flow through more consistent, standardised information and tendering processes leading up to procurement.

- **Delivery and operation** of infrastructure assets that continue to provide economic benefits after construction is complete.

All of these drivers contribute to the best possible environment for infrastructure markets.

Further, InfraCompass expands on these drivers to highlight where they are best represented around the world, and in the process serves several important functions:

- Identifies the most important data sources for comparison between countries, and provides a consistent, single source of comparable data.
- Identifies and prioritises the reforms that have the greatest impact on infrastructure markets, to allow countries to understand the options for better practice from across the globe.
- Measures performance data effectively to, for example, establish a country's track record of delivery. This capability allows countries to emulate the private sector, using data as a means of understanding performance against key deliverables.

- Encourages openness and transparency in the sharing of infrastructure data, enabling greater dialogue with communities, government and private sector on infrastructure goals.

In the longer term, by tracking progress over time, InfraCompass can be used to continue to improve infrastructure practices, incentivise reform and innovation, deliver quality infrastructure, and ultimately grow GDP.

This report outlines how InfraCompass defines and assesses the drivers of infrastructure delivery in various jurisdictions. It focuses on six key drivers – three related to policy and three related to delivery and describes the 38 metrics used to measure performance against these drivers across 49 countries. (The methodology used to identify these 38 metrics is discussed in the Technical Appendix.)

A discussion of each key driver is accompanied by commentary on the global context and major findings from the analysis. Case studies provide real life examples of the improvements that can be achieved by focusing on the most valuable drivers for a particular country or jurisdiction.

INFRACOMPASS INCLUDES
49 COUNTRIES ACCOUNTING
FOR OVER 90% OF GLOBAL
GDP AND ALMOST 75%
OF GLOBAL POPULATION



INFRACOMPASS IDENTIFIES THE KEY DRIVERS OF SUCCESSFUL PLANNING AND DELIVERY AND
ALLOWS JURISDICTIONS TO FOCUS ON THE MOST IMPORTANT DRIVERS AFFECTING THEIR
INFRASTRUCTURE MARKET.

DRIVERS OF SUCCESSFUL INFRASTRUCTURE DELIVERY

PINPOINTING STRENGTHS
AND AREAS OF IMPROVEMENT



INFRACOMPASS PINPOINTS STRENGTHS AND AREAS FOR IMPROVEMENT ACROSS SIX DRIVERS.

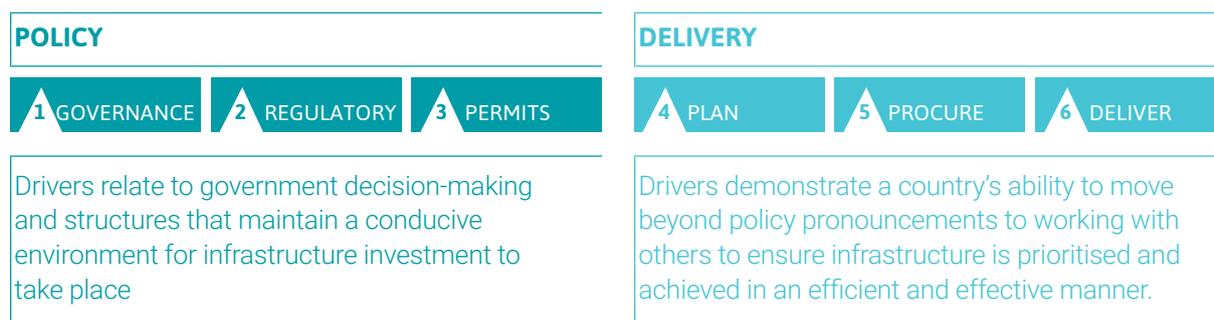
POLICY

- 1 GOVERNANCE
- 2 REGULATORY
- 3 PERMITS

DELIVERY

- 4 PLAN
- 5 PROCURE
- 6 DELIVER

Figure 2 – InfraCompass measurement framework



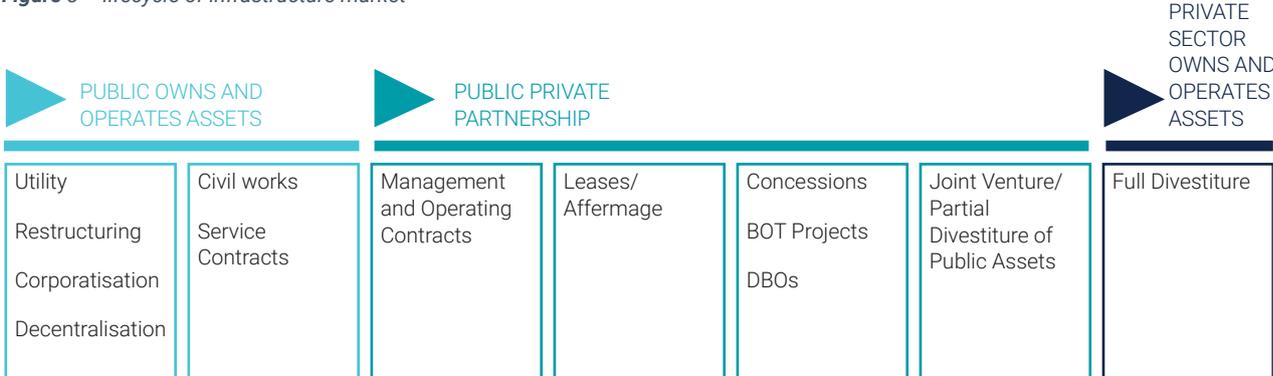
The six drivers represent areas of focus for countries to improve their infrastructure capability and, in doing so, increase the supply and delivery of investment-ready infrastructure projects.

POLICY			DELIVERY		
1 GOVERNANCE	2 REGULATORY	3 PERMITS	4 PLAN	5 PROCURE	6 DELIVER
STRONG LEGAL AND INSTITUTIONAL ENVIRONMENT	OPEN AND CONSISTENT APPROACH FOR INVESTMENT AND COMPETITION	EFFICIENCY OF THE PLANNING APPROVAL AND LICENSING PROCEDURES	GOVERNMENT ABILITY TO COORDINATE AND SELECT PROJECTS	STANDARDISED & TRANSPARENT BID PROCESS	TRACK RECORD IN CONVERTING POLICY TO FUNDED AND QUALITY ASSETS
<ul style="list-style-type: none"> • Rule of law • Control of corruption • Enforcing contracts • Shareholder governance • Conflict of interest protection • Insolvency recovery • Infrastructure agency • Post completion review 	<ul style="list-style-type: none"> • Regulatory quality • Capital account openness • Taxation • Foreign ownership • Insolvency framework • Infrastructure regulation • Competition authorities • State-owned enterprises 	<ul style="list-style-type: none"> • Registering property • Construction permits • Land administration • Business start cost • Business start time • Business start procedures 	<ul style="list-style-type: none"> • Infrastructure plan • Project pipeline • Appraisal guidelines • PPP preparation 	<ul style="list-style-type: none"> • Call for tender • Bid evaluation • Contracting • PPP bids • Bid transparency • Procurement duration • Procurement guidelines 	<ul style="list-style-type: none"> • Infrastructure quality • Infrastructure expenditure • Private finance • PPP activity • Secondary market activity
METRIC					

There are different approaches to infrastructure between economies depending on GDP, population, geography, competitive environment, government, market and historical factors. Identifying underlying reasons for success and drawing out repeatable learnings is no easy feat. In general though, economies tend to evolve from government procured infrastructure, to PPPs and part privatisations, to infrastructure provision by private sector through regulated markets.

The next chapter looks in detail at the six policy drivers, drawing out the key findings from the analysis of the underlying datasets. It discusses examples of reforms that drive quality infrastructure outcomes and investment, based on those countries with strong-performing infrastructure markets.

Figure 3 – lifecycle of infrastructure market



IDENTIFYING UNDERLYING REASONS FOR SUCCESS AND DRAWING OUT REPEATABLE LEARNINGS IS NO EASY FEAT.

INFRASTRUCTURE POLICY DRIVERS

GOVERNMENT DECISION-MAKING AND STRUCTURES THAT MAINTAIN A CONDUCIVE ENVIRONMENT FOR INFRASTRUCTURE INVESTMENT TO TAKE PLACE



POLICY

1 GOVERNANCE	2 REGULATORY	3 PERMITS
<p>LEGISLATION OF KEY PRINCIPLES</p> <p>INSTITUTIONS WITH CLEAR AUTHORITIES</p> <p>INDEPENDENT OVERSIGHT</p>	<p>PRIVATE SECTOR ENGAGEMENT TO PROMOTE QUALITY</p> <p>LOW BARRIERS TO ENTRY FOR INVESTORS</p> <p>ANTI-COMPETITIVE MONITORING</p>	<p>LAND ACQUISITION MECHANISMS</p> <p>PERMITTING COORDINATION</p> <p>INTEGRATED APPROACH TO REDUCE RED TAPE</p>

POLICY

- 1 GOVERNANCE
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GOVERNANCE AND INSTITUTIONS

ACROSS ECONOMIES, THERE WERE FEW STRONGER DRIVERS OF INVESTMENT THAN THE RULE OF LAW. UPSTREAM ENABLING ENVIRONMENT REFORMS WERE KEY TO UNLOCKING QUALITY INFRASTRUCTURE ENVIRONMENT IN OVER 20 OF THE COUNTRIES ANALYSED.

The strength of a country’s governance arrangements and its associated institutions is fundamental to its overall economic performance and infrastructure markets. The quality of the institutional frameworks that govern infrastructure markets is closely linked to the quality of the frameworks that govern the whole economy.

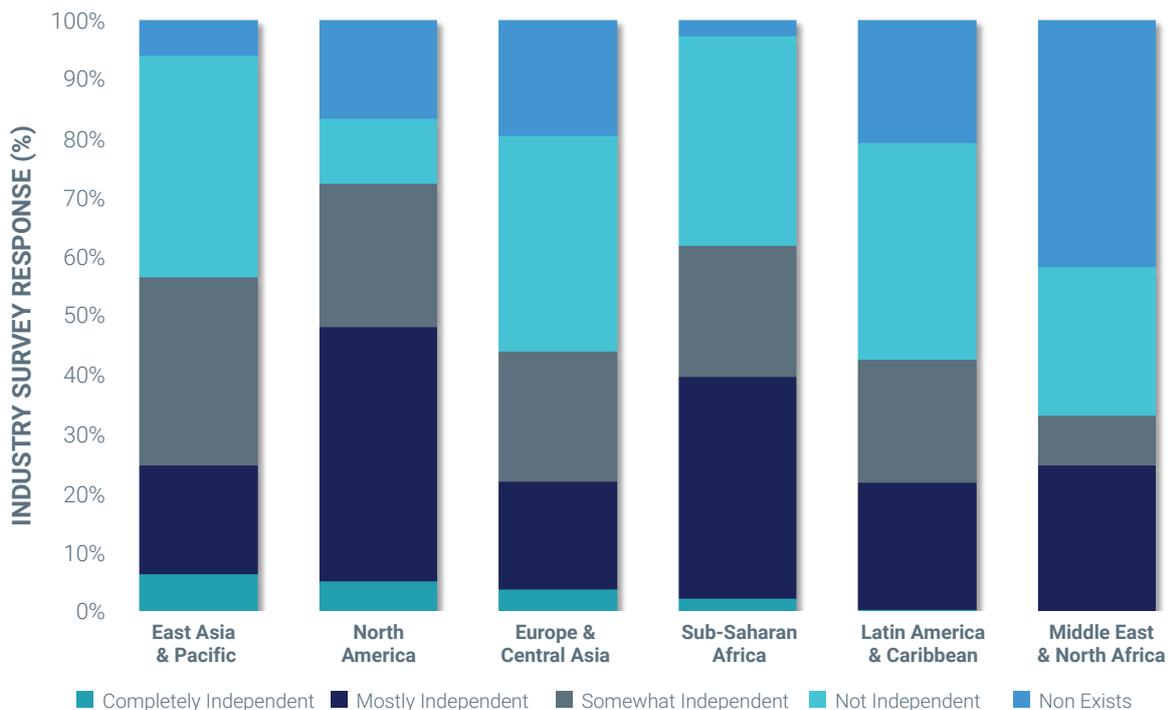
Strong governance enables certainty, transparency and trust in business and Government. This last factor trust is key to facilitating efficient processes and use of resources, and incentivises private investment by minimising risk and improving the certainty of returns.

The combination of long infrastructure project lifecycles, multiple stakeholders and complex contractual arrangements means that strong governance is particularly important for the infrastructure sector.

Governance around funding and project selection decisions can be designed to prioritise transparent, agreed socio-economic outcomes. The OECD and World Economic Forum recommend the establishment of specific infrastructure agencies (termed ‘PPP Units’) to enhance transactional capacity and efficiency within government, and to drive greater standardisation in the procurement process¹.

The GI Hub’s global survey of infrastructure experts, which included consideration of the independence of existing infrastructure agencies, found that very few of these agencies are considered completely independent (see Figure 2)

Figure 2 - Perceived infrastructure agency independence



¹ WEF (2014), Infrastructure Investment Policy Blueprint, February 2014.

Case study: Kenya's reforms trigger stronger private infrastructure market

- In 2010, Kenya established a new Constitution, which secured the independence of the judiciary and formally separated the three powers of the executive, legislature and judiciary. The new Constitution also supported efforts to reduce corruption, with the creation of an independent Ethics Commission to be overseen by the Attorney General. Constitutional reform has been part of an increasing positive trend in Kenya's governance and institutions. The Public Financial Management Act (2012) has also strengthened the role of the Office of the Auditor General, to provide stronger oversight of the executive by the legislature.
- On the World Bank's Rule of Law governance indicator, Kenya has improved significantly, moving from 101 in 2010/11 to 77 in 2014/2015 (out of 212 countries).
- The change in Kenya's governance has been a catalyst for improvement in the country's investment environment and global competitiveness (improving by 12% over the same period), and has been reflected in private sector investor confidence.
- While there have been annual variations in transaction value, overall the private sector market has been stronger since the 2010 reforms. Particularly noticeable is the significant increase in transaction value from \$64 million in 2010 to \$1.5 billion 2011.

YEAR	TRANSACTION VALUE (\$M)	NUMBER OF TRANSACTIONS
2010	64	1
2011	1,508	3
2012	424	3
2013	306	2
2014	891	3
2015	1,714	5



Only 4% of respondents in developed countries consider their agencies to be mostly or totally independent. Some emerging countries have experienced positive investment outcomes as a result of improvements in the independence of their infrastructure agencies, such as Kenya (see country case study) and South Africa. Overall, however, the survey found a disconnect between how respondents perceived the strength of governance frameworks at the macro level, and the degree of independence they considered to be good practice at the infrastructure sector level.

References:

O'Brien, T. and Kim, H. (2015) Kenya's Road to Growing Prosperity. The Africa Policy Journal. Posted 7 April. Available at: <https://apj.fas.harvard.edu/kenyas-road-to-growing-prosperity/>

The Republic of Kenya (2010) Constitution of Kenya. National Council for Law Reporting. The Official Law Reports of the Republic of Kenya. Available at: <http://www.kenyaembassy.com/pdfs/the%20constitution%20of%20kenya.pdf>

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How does InfraCompass measure the importance of Governance

InfraCompass measures the strength of a country's governance and associated institutions through eight metrics, as shown in Table 1 below.

Only 4% of respondents in developed countries consider their agencies to be mostly or totally independent.

Table 1 - The metrics that contribute to successful governance and institutions²

METRIC	IMPORTANCE TO INFRASTRUCTURE MARKETS
<p>RULE OF LAW INDEX The effectiveness of criminal and civil law in a society, including enforcement efficiency of the legal process, as well as the likelihood of crime and violence.</p>	
<p>COST OF ENFORCING CONTRACTS, AS % OF CLAIM The cost of legal fees to enforce a contract compared to the value of the debt owed.</p>	
<p>CONTROL OF CORRUPTION INDEX Extent to which public power is used for private gain, including the extent to which government is influenced private interests.</p>	
<p>SHAREHOLDER GOVERNANCE INDEX Measures the practices in place to protect the interests of shareholders.</p>	
<p>EXTENT OF CONFLICT OF INTEREST INDEX Measures the protection of shareholders against the use of company assets for personal gain.</p>	
<p>RECOVERY RATE, CENTS ON THE DOLLAR The amount of money that can be recovered by creditors in the event of loan default.</p>	
<p>DOES THE COUNTRY DO POST-COMPLETION REVIEWS (ASSURANCE) Whether the country conducts Post-Completion Reviews on infrastructure projects to ensure the forecast outcomes are being achieved</p>	
<p>DOES THE COUNTRY HAVE A DEDICATED NATIONAL OR SUB-NATIONAL INFRASTRUCTURE OR PPP UNIT / AGENCY? Whether an infrastructure agency exists to coordinate an integrated approach to infrastructure delivery and policy.</p>	

² For a list of metric data sources see Country Appendix. For further information on importance to infrastructure see Technical Appendix..

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INVESTMENT, REGULATION AND COMPETITIVENESS

LOWER RESTRICTIONS ON INVESTMENT AND CAPITAL FLOWS, AND MORE CONSISTENT AND PREDICTABLE SECTOR REGULATION THAT INCENTIVISES COMPETITION, INVESTMENT AND INNOVATION, ARE NEEDED ACROSS COUNTRIES TO FUEL GLOBAL GROWTH.

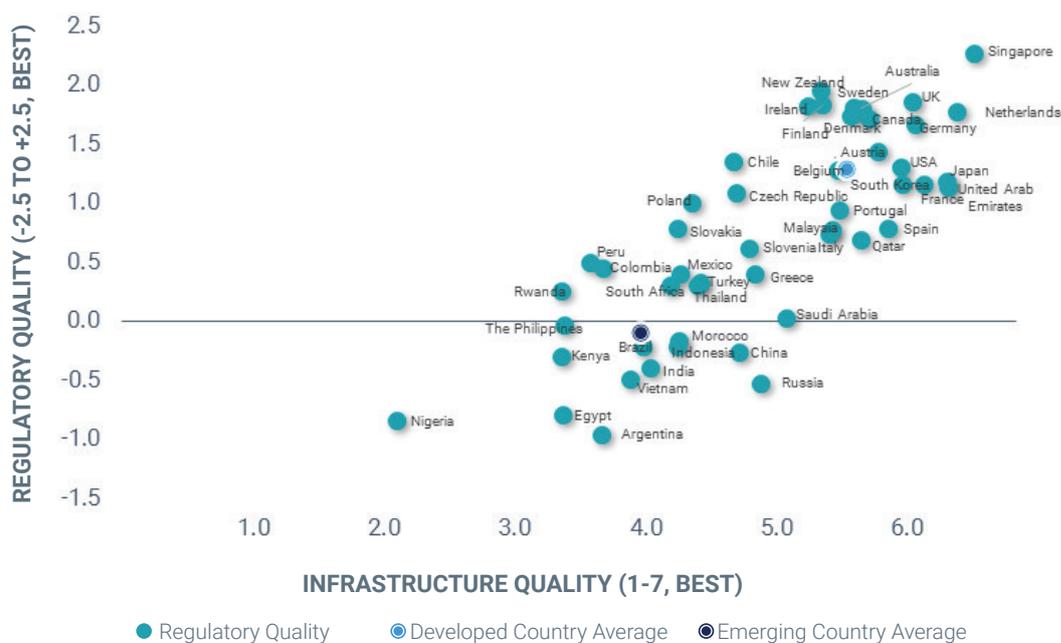
dynamics that shape a country's investment environment, infrastructure markets are also sensitive to regulatory factors, taxation regimes and openness to foreign capital.

Infrastructure is often a monopoly asset. This makes it essential to regulate the monopoly providers, so that a balance is struck between ensuring equitable access to services for consumers, incentivising quality and innovation, and achieving investment returns for the private sector.

Infrastructure assets have traditionally been supplied by governments, and State Owned Enterprises (SOEs) are still prevalent in certain countries³. However, over the past four decades, several advanced economies have seen the privatisation of a number of infrastructure sectors.

The experience of privatisation has not always been a smooth one, as the long time horizon of infrastructure assets is not a natural match with the private sector's need to achieve a return on investment. More recently, the adoption of the Regulatory Asset Base (RAB) approach to regulating infrastructure, such as in utilities and airports, has served to address this inherent inconsistency. Overall, the quality of the regulatory framework is closely linked to the quality of infrastructure that is eventually delivered (see Figure 3).

Figure 3 - Good regulation facilitates the delivery of high quality infrastructure



³ OECD (2015), Infrastructure Financing Instruments and Incentives, OECD Press, Paris.

Case study: Colombia's focus on regulation has made it an emerging economy leader

Colombia has undergone a long period of transition, with the current economic legislation originating from the 1991 constitutional reform that granted the Superintendencia de Industria y Comercio (SIC) the power to review the competitiveness of Colombian markets. In 2006, the National System of Competitiveness was established to coordinate government, private sector and academic activities, with multiple groups established to give voice to the private sector and territories. In 2009, competition regimes that were established at an infrastructure sector level were centralised and allocated to the SIC.

Colombia is continuing to improve its competitiveness, developing and delivering a National Agenda for Competitiveness and Innovation 2014-2019 that focuses on 11 priority areas, including institutional framework and infrastructure.

In line with Colombia's institutional improvements, InfraCompass has identified an improvement in the performance of regulatory quality since the early 2000s. According to the OECD Regulatory Quality Index (which scores countries on a scale from 2.5 lowest to 2.5 highest), Colombia's score increased from -0.8 in 2003 to 0.45 in 2015.

This improvement has been accompanied by stronger outcomes for the country's infrastructure markets, including an increase in total infrastructure expenditure of 80% in the five years to 2015 (rising from \$5.3 billion in 2011 to \$9.5 billion in 2015), and in private financing activity, with 12 transactions at a value of \$7.7 billion recorded in 2016 - well above the five year average of six transactions and \$4 billion.

References:

IJ Global, 2016, Private Sector Infrastructure Transactions.

Miranda, J, 2016, How can Colombia Become More Competitive? Available at: <https://www.weforum.org/agenda/2016/06/how-colombia-has-become-more-competitive/>

OECD, 2015, Competition and Market Studies in Latin America. Available at: <http://www.oecd.org/daf/competition/competition-and-market-studies-in-latin-america2015.pdf>

World Economic Forum, Global Competitiveness Index, Historical Dataset. Available at: reports.weforum.org/global-competitiveness-index/

World Bank, Worldwide Governance Indicators. Available at: info.worldbank.org/governance/wgi/



The more attractive a country's regulatory environment is for investors, the more likely it is that capital will flow to that country. Nonetheless, other factors are also important, including the level of restriction on foreign capital and relative taxation rates.

While restrictions on private ownership have decreased in the last few decades, they are still relatively common, particularly in relation to Foreign Direct Investment (FDI). This is especially true for infrastructure markets where there is a higher likelihood that SOEs operate as public monopolies. Country-specific approaches to limit foreign direct investment or ownership can discourage innovative and efficient private providers, while also increasing the level of capital required from within the local market⁴. This may in turn prevent a project from proceeding, if local capital is either not available or is too costly to secure.

Taxation can also be a barrier to entry. High rates of taxation, such as those imposed on multiple aspects of investment (e.g. on capital goods and raw materials) or by multiple levels of government, can discourage investors from participating in a particular territory, and drive foreign investors to invest in countries with more attractive tax regimes⁵.

⁴ OECD (2015), *Fostering investment in infrastructure: lessons learned from OECD Investment Policy Reviews*

⁵ WEF (2014), *Infrastructure Investment Policy Blueprint*, February 2014.

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How does InfraCompass measure the effectiveness of regulation for infrastructure markets?

The investment, regulatory and competition framework driver in InfraCompass is assessed through eight metrics, as shown in Table 2.

The more attractive a country's regulatory environment is for investors, the more likely it is that capital will flow to that country.

Table 2 - The metrics that contribute to a competitive and open infrastructure market⁶

METRIC	IMPORTANCE TO INFRASTRUCTURE MARKETS
<p>REGULATORY (INCLUDING COMPETITION) QUALITY</p> <p>The effectiveness of policies and legislation to discourage uncompetitive or discriminatory practices while still encouraging private sector market participation.</p>	
<p>CAPITAL ACCOUNT OPENNESS</p> <p>How open a country is to foreign investment, measured by a variety of financial flows such as foreign direct investment.</p>	
<p>PREVALENCE OF FOREIGN OWNERSHIP</p> <p>The level of foreign company ownership as an indicator of openness to foreign investment in a country.</p>	
<p>SCOPE OF ACTION OF COMPETITION AUTHORITIES</p> <p>The ability of competition authorities to discourage, investigate and prosecute uncompetitive behaviour.</p>	
<p>STRENGTH OF INSOLVENCY FRAMEWORK</p> <p>How efficient is the process to dissolve and pay off the debts of a company that is insolvent.</p>	
<p>EFFECT OF TAXATION ON INCENTIVES TO INVEST</p> <p>Whether the taxation structure of a country (such as level of company tax) encourages or discourages foreign and domestic investment.</p>	
<p>PRODUCT MARKET REGULATION BY NETWORK SECTORS</p> <p>How restrictive and/or effective the level of regulation imposed on a sector (e.g. electricity) is.</p>	
<p>SCOPE OF SOE</p> <p>How much of the market by sector is owned and controlled by State Owned Enterprises as opposed to private sector.</p>	

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PERMITS, LICENSES AND LAND ACQUISITIONS

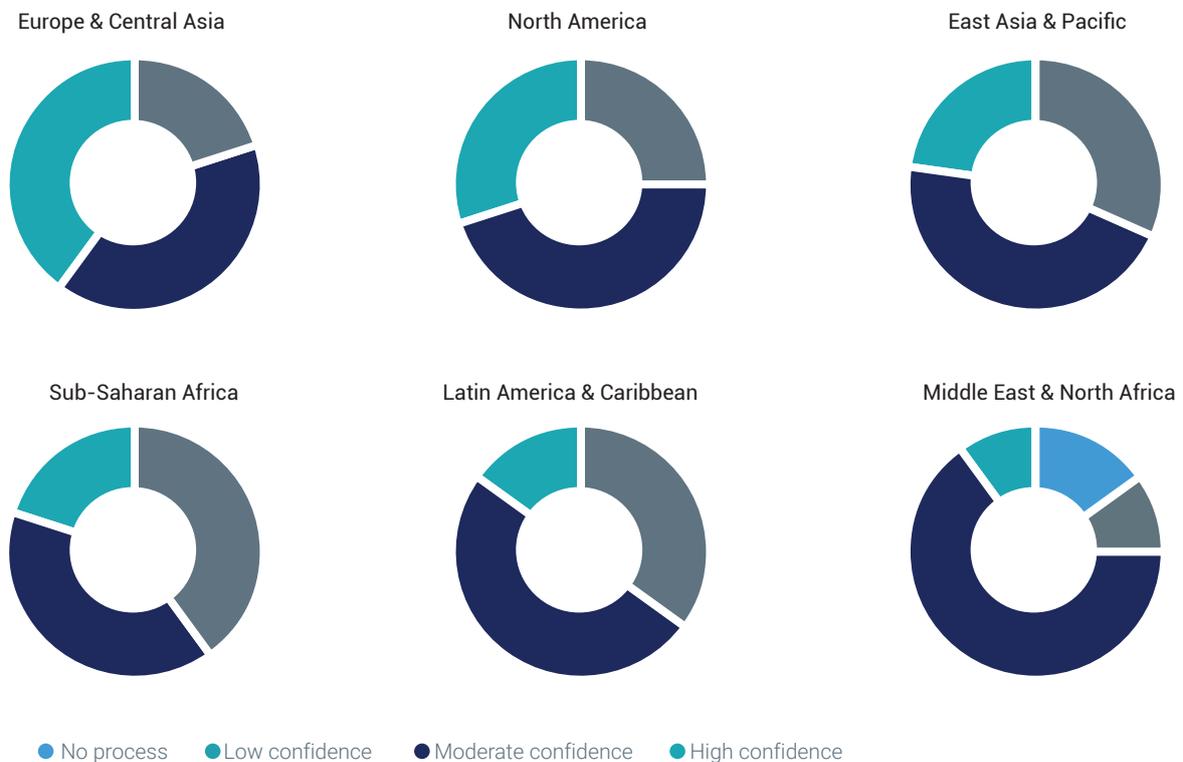
EMERGING AND DEVELOPED COUNTRIES ALIKE HAVE DEVELOPED VERY EFFICIENT PRACTICE TO MANAGE LAND, ENVIRONMENT AND COMMUNITY APPROVALS. BUT THERE IS ROOM FOR IMPROVEMENT, WITH SOME COUNTRIES STRUGGLING TO IMPLEMENT THESE PROCESSES EFFICIENTLY. THIS HAS A DIRECT IMPACT ON THE TIMELY AND COST-EFFECTIVE DELIVERY OF INFRASTRUCTURE.

Long term certainty about infrastructure requirements is also important for effective land acquisition, ensuring long lead times for planning and stakeholder engagement on land requirements, and enabling corridor preservation where possible. The OECD's country Investment Policy Reviews identified significant costs associated with land acquisition when it was not properly included in the project planning and feasibility stage⁷.

Land acquisition

Clear and accessible land acquisition legislation is required to ensure both public and private parties are aware of when, and by what process, acquiring land is appropriate. While the vast majority of the countries surveyed in InfraCompass had some form of government 'compulsory acquisition' ability, the degree to which it is used effectively to reduce costs for particular projects varies widely (see Figure 4).

Figure 4 – Respondents' confidence in ability to acquire land ('compulsory purchase') in a timely manner



⁷ OECD (2015), Fostering investment in infrastructure: lessons learned from OECD Investment Policy Reviews

Case study: Faster administration processes make Malaysia more competitive

- The reform of land registration in the Malaysian state of Sarawak was spearheaded by Sudarsono Osman, who was appointed the Director of Land and Survey Department in 2006. The reform empowered land registry staff to improve the efficiency of the department, and resulted in a number of modifications to streamline applications processes and improve the ability to cross check information.
- By 2007, significant improvements had been made to processing times. By 2009, all 11 divisional registries were processing at least 98% of land titles in a day.
- According to the World Bank's Quality of Land Administration Index (which scores countries between 1 and 30), at 27.5 Malaysia is currently exceeding not only the emerging country average, but also the developed country average (22.4). It is also exceeding the developed country average for the number of days to register a property (13 days for Malaysia, as opposed to an average of around 20 days).
- Malaysia has also improved its overall competitiveness, with an average annual improvement of 2% between 2011 and 2015, and increased its total spend on infrastructure by 39% over the same period (from US\$8.5 billion in 2011 to US\$11.8 billion in 2015).

References:

Centre for Public Impact (2016) Reforming land registration in the Malaysian state of Sarawak. Available at: <https://www.centreforpublicimpact.org/case-study/empowering-operational-staff-land-registration-in-sarawak-malaysia/>

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IJ Global (2016) Private Finance Investment in Infrastructure.



Environmental and social considerations

Infrastructure agents, whether public or private, must ensure that infrastructure projects do not impose unacceptable environmental or social impacts on the community. Mechanisms such as permits, licences, planning and environmental reviews can be time-consuming and costly, but are nonetheless necessary, and their implementation throughout the project lifecycle can influence public trust and buy-in to future proposals⁸.

Conversely, inefficiencies in this process can add time, costs and risks to projects. As far as possible, a single agency should be responsible for regulation, land titles and permits, as well as planning and environmental assessment⁹. Efficient government processes are an important factor for the private sector when making investment decisions. Analysis by the World Bank has shown that there is a strong relationship between FDI inflows and economies that perform better on 'doing business' measures, which may suggest that greater regulatory and bureaucratic efficiency makes a jurisdiction more attractive to foreign investment¹⁰.

8 Boele, R (2016) Insight – The Power of Social License. Available at: <https://assets.kpmg.com/content/dam/kpmg/pdf/2016/06/insight-magazine-8.pdf>

9 WEF (2014), Infrastructure Investment Policy Blueprint, February 2014.

10 Anderson, J. and Gonzalez, A. (2012) Does Doing Business matter for foreign direct investment? Washington: World Bank Group.

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How does InfraCompass measure the efficiency of land acquisition and permit processes?

The permits, licenses and land acquisitions driver in InfraCompass is measured through six metrics that focus on the quality and efficiency of government processes to enable infrastructure project development and business development. These are described in Table 3.

Mechanisms such as permits, licences, planning and environmental reviews can be time-consuming and costly, but are nonetheless necessary, and their implementation throughout the project lifecycle can influence public trust and buy-in to future proposals.

Table 3 - The metrics that demonstrate efficient processes for permits and licensing¹¹

METRIC	IMPORTANCE TO INFRASTRUCTURE MARKETS
<p>QUALITY OF LAND ADMINISTRATION The reliability and transparency of data such as land titles, and the extent of geographic coverage of land administration systems, as well as aspects of dispute resolution for land issues.</p>	
<p>TIME REQUIRED TO START A BUSINESS (NUMBER OF DAYS) The total number of days required to register a firm.</p>	
<p>COST TO START A BUSINESS, % OF GNI PER CAPITA Cost to start a business as recorded as a percentage of the economy's income per capita</p>	
<p>REGISTERING PROPERTY, NO. OF DAYS Number of days taken to register a property.</p>	
<p>DEALING WITH CONSTRUCTION PERMITS, NO. OF DAYS The number of days to deal with construction permits.</p>	
<p>NUMBER OF PROCEDURES TO START A BUSINESS The total number of procedures required to register a firm.</p>	

⁸ For a list of metric data sources, see Country Appendix. For further information on importance to infrastructure, see Technical Appendix.

DRIVERS OF DELIVERY

PROCESSES AND ACTIVITIES KEY TO EFFECTIVE AND EFFICIENT FUNCTIONING OF THE INFRASTRUCTURE LIFECYCLE.



DRIVERS OF DELIVERY

4 PLAN	5 PROCURE	6 DELIVER
<p>VISION AND STRATEGY</p> <p>INTEGRATED SECTOR AND CROSS-AGENCY COORDINATION</p> <p>ROBUST PRIORITISATION PROCESS</p>	<p>TRANSPARENCY THROUGHOUT PROCESS</p> <p>STANDARDISED EVALUATION AND CONTRACTUAL FRAMEWORKS</p>	<p>MOBILISATION OF PROJECT FUNDING</p> <p>PARTNERING WITH PRIVATE SECTOR (WHERE NEEDED)</p> <p>CONSISTENT RENEWAL OF ASSETS</p>

PLANNING AND SELECTING INFRASTRUCTURE PROJECTS

TRANSPARENT, CONSULTATIVE STRATEGIC PLANS, BACKED UP BY A PIPELINE OF PROJECTS, AND FOLLOWED THROUGH INTO INVESTMENT BY GOVERNMENTS WITH BIPARTISAN SUPPORT, DIFFERENTIATE A FEW TOP PERFORMERS FROM THE REST. EMERGING MARKETS, IN PARTICULAR, HAVE IMPROVED THEIR PUBLIC PLANNING PROCESSES OVER RECENT YEARS WITH THE PUBLICATION OF INTEGRATED SECTOR PLANS AND SIGNALS TO MARKET ON INVESTMENT PRIORITIES.

The process of infrastructure planning can be seen as the first step in a project's lifecycle, and more broadly helps to articulate the overarching strategic objectives and visions for what a country or a region aspires to become. This can span economic, social and environmental objectives.

Infrastructure planning is not separate from wider economic and spatial planning, as land use drives the demand for infrastructure, and infrastructure enables the use of land. Because of the inter-relationships between different infrastructure assets (such as a rail line and the electricity that powers it), it is important to coordinate the planning of infrastructure. Cooperation across agencies and levels of government, as well as broad consultations with end-users and other relevant stakeholders, are often cited as key ingredients in successful planning¹².

Given the large scale, capital intensive and complex nature of infrastructure projects, proper planning is important to test project options and ensure that the final project scope is the best way to address the strategic objectives. From a private sector perspective, planning can help reduce the risk of scope change, and helps optimise future financial return by clearly identifying lifecycle benefits and costs. This results in greater competitiveness and economic growth, with an estimated economic return of between 5% and 25% for every dollar spent on well planned infrastructure¹³.

Ultimately, there will always be restrictions on the delivery of infrastructure in a country, whether determined by how long it takes to deliver an infrastructure plan, budgetary limitations or the capacity of contractors to deliver. Therefore, an important aspect of infrastructure planning is prioritisation.

The prioritisation of infrastructure projects should be driven by their ability to contribute to strategic objectives and, at a more granular level, by their economic viability – the whole of lifecycle costs and benefits of the project. Other factors such as project readiness can also be considered. Across all of these considerations, however, the key to successful project selection is a consistent, transparent and robust government approach to planning and prioritising expenditure, taking account of political and other objectives.

While there is demonstrated merit in infrastructure planning, the way in which this planning is carried out may differ between countries for a number of reasons and this can make it difficult to compare approaches between countries.

12 OECD (2015), Policy Framework for Investment 2015 Edition, OECD Publishing, Paris.

13 World Economic Forum (2012) Strategic Infrastructure, Steps to Prioritise and Delivery Infrastructure Effectively and Efficiently. WEF, Geneva.

Case study: Better planning helps South Africa deliver more infrastructure

- South Africa's infrastructure planning and prioritisation process was fragmented and conducted by individual agencies across the country. Recognising the need for greater consistency, the Presidential Infrastructure Coordinating Commission (PICC) was established in 2011 with responsibility for planning and prioritising major public infrastructure projects and coordinating with multiple levels of government.
- In 2012 the PICC published the country's first National Infrastructure Plan, which prioritised 18 Strategic Integrated Projects (SIPs) seen as key for promoting economic growth and supporting service delivery to the poor. They cover seven broad types of infrastructure: geographic, spatial, energy, social, knowledge, regional integration, and water and sanitation. Each of the SIPs focuses on a goal, rather than a specific project or sector, and therefore requires government to integrate activity and investment across various sectors to achieve these goals.
- PICC's mandate is also to ensure the systematic selection, planning and monitoring of large infrastructure projects, with accountability for the country's growth, development and employment targets. All infrastructure projects funded from the National Treasury require a full feasibility study before funding can be approved. The study also requires wider economic analysis on the project's impact on job creation, Gross Domestic Product (GDP), tax revenues and environmental impact, and considers factors such as deliverability, governance and asset management.
- This innovative strategy to coordinate infrastructure planning has resulted in InfraCompass identifying South Africa as a strong performer in terms of the 'planning and selection' driver.
- Infrastructure expenditure has increased at an average annual rate of 8% since the launch of the National Infrastructure Plan in 2012. Private investment in infrastructure has also increased since the program's inception, with average annual private investment growing from approximately US\$2.4 billion (2010-2012) to US\$4.9 billion (2013-2015). This data does not represent recent developments in South Africa's infrastructure market which have affected private investment.



References:

Financial and Fiscal Commission (2017) Responding to South Africa's Infrastructural Challenges. Submission for the 2016-17 Division of Revenue. Available at: www.ffc.co.za/docman-menu-item/2015/963-submission-2016-2017-final [Accessed 13 March 2017].

KPMG Global (2016) Assessing the True Value of Infrastructure Investment: South Africa. Available at: <https://assets.kpmg.com/content/dam/kpmg/pdf/2016/02/value-of-infrastructure-investment.pdf>

IJ Global (2016) Private Finance Investment in Infrastructure.



Table 4 - The challenges of comparing infrastructure planning and project selection across countries

	<p>GOVERNMENT STRUCTURE</p> <p>Are there multiple agencies with different infrastructure responsibilities, or is decision making centralised? The governance structures within a country will influence the level of coordination required to deliver an integrated plan.</p>
	<p>PLANNING CAPABILITY</p> <p>Some countries have had more opportunity to develop technical capability and skills levels that give them the ability to plan more effectively.</p>
	<p>CONFLICTING PLANNING AND BUDGET CYCLES</p> <p>If a budget cycle conflicts with the planning cycle, funding may not be available to deliver the identified projects. Equally, if funding is allocated before planning is complete, the result can be the delivery of sub-optimal projects.</p>
	<p>STRENGTH AND CONSISTENCY OF QUANTITATIVE ASSESSMENT</p> <p>Poorly developed or inconsistent quantitative assessment can produce inconsistent or biased project prioritisation. This can result in poor project selection and community cynicism.</p>
	<p>SERVICE DELIVERY STANDARDS</p> <p>The way in which services are provided can impact on the viability of future infrastructure projects. Private sector involvement, the level of user pays and customer experience all set community expectations about the type, quality or cost of new infrastructure.</p>
	<p>FLEXIBILITY AND RESPONSIVENESS OF THE PLANNING PROCESS</p> <p>Infrastructure planning and delivery have long lead times, and governments cannot always anticipate what economic or societal changes might occur in the future. Plans need to be flexible to respond to these changes, particularly when the delivery of the plans is legislated.</p>

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How does InfraCompass measure infrastructure planning and project selection?

The planning and selection metrics in InfraCompass (shown in Table 5) do not provide a deep assessment of relative country capability in the planning and prioritisation of infrastructure assets. Instead, they are intended to provide informative comparisons through the following two lenses:

- Evidence of government capability in planning and coordination across multiple infrastructure sectors
- Indications of quality and consistency in project preparation processes, including appraisal practices.

Infrastructure planning is not separate from wider economic and spatial planning, as land use drives the demand for infrastructure, and infrastructure enables the use of land.

Table 5 - The metrics that contribute to successful planning and selection of infrastructure projects¹⁴

METRIC	IMPORTANCE TO INFRASTRUCTURE MARKETS
<p>PREPARATION OF PPPS Appraisal of a project to determine whether a Public-Private Partnership is justified and the best financing instrument for the project.</p>	
<p>DO THE NATIONAL AND SUB-NATIONAL INFRASTRUCTURE PLANS CONTAIN PROJECT PIPELINE? Whether the country has sufficiently articulated its prioritisation of projects through the public release of an infrastructure project pipeline.</p>	
<p>DOES THE COUNTRY HAVE A NATIONAL OR SUB-NATIONAL INFRASTRUCTURE PLAN? Whether the country has a multi-sector approach to planning future infrastructure in an integrated way.</p>	
<p>DOES THE COUNTRY HAVE GUIDELINES FOR THE APPRAISAL OF INFRASTRUCTURE PROJECTS? Whether the country has a consistent documented approach to assessing each potential infrastructure project to ensure it meets the needs of its citizens and provides value for money.</p>	

¹⁴ For a list of metric data sources, see Country Appendix. For further information on importance to infrastructure, see Technical Appendix.

POLICY



DELIVERY



PROCURE

OVER HALF THE COUNTRIES ANALYSED HAVE CONSISTENT AND EQUITABLE PROCUREMENT INTERFACES WITH THE PRIVATE SECTOR. HOWEVER, COUNTRIES COULD REDUCE TRANSACTION COSTS AND IMPROVE DEAL FLOW THROUGH MORE CONSISTENT, STANDARDISED INFORMATION AND PROCESSES LEADING UP TO PROCUREMENT.

The procurement process is often the stage at which the private sector becomes engaged in new infrastructure projects, whether in the design and construction of assets or through outright ownership. The clarity, transparency and consistency of infrastructure procurement is therefore essential to ensuring effective outcomes throughout the asset lifecycle, from construction to operations.

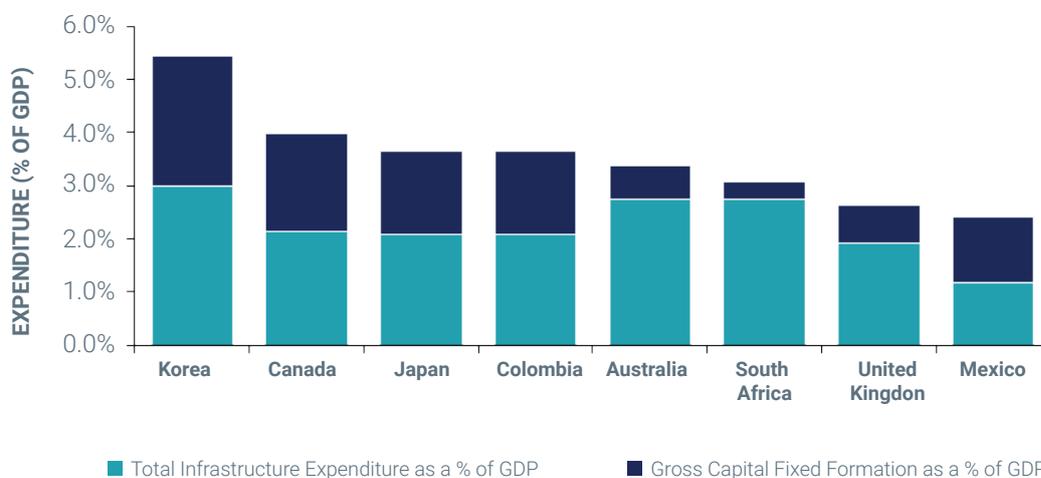
The process by which infrastructure assets are procured is essential to ensuring value for money for the public purse and desirable outcomes for the consumers of the services provided by these assets. The vast majority of infrastructure assets are procured through the public sector, before being passed to the private sector to construct,

operate or own. To put this in context, Figure 5 shows investment in infrastructure as part of overall government capital outlay in selected OECD countries, where consistent data is available.

Procurement processes have an impact on infrastructure market outcomes primarily through the cost of tendering and barriers to market entry. Both of these factors can lead to poor outcomes for the economy, with higher project costs leaving fewer funds available to carry out other projects. Effective procurement practices have the following characteristics:

- Clear, fair and transparent to both local and foreign bidders
- Encourage competition and remove barriers to entry
- Incentivise innovation in construction and delivery
- Mirror the complexity of the project or program being undertaken
- Reflect the capability of the procuring body and the capacity of the supply chain
- Provide a realistic framework for risks and returns.

Figure 5 – Level of infrastructure spend compared to Gross Fixed Capital Formation (as a % of GDP)



Case study: Mexico - a leader in transparent PPP procurement

- Mexico has been actively working to improve public procurement and has partnered with the OECD to implement the OECD Competition Committee's Guidelines for Fighting Bid Rigging in Public Procurement.
- The OECD has collaborated with multiple agencies in Mexico since 2011 including Mexico's Social Security Institute (IMSS), Mexico's Competition Commission and the Comisión Federal de Electricidad. As a result, Mexico currently outperforms even the developed country average in transparency of PPP procurement, bid evaluation and the calling for tenders process.
- Over the five years since 2011, Mexico's competitiveness has improved by an average 2% annually and total infrastructure investment increased by 23%, from US\$13.4 billion in 2011 to US\$16.5 billion in 2015.
- There has also been increased private sector investment in infrastructure in Mexico since 2011. An average 19.4 transactions at US\$14.1 billion was recorded between 2012 and 2016, compared to nine transactions totalling US\$3 billion in 2011. Notably, 2012 was a key contributor to this average, with 24 transactions and a total of US\$24.1 billion invested in that year alone.



Getting all these factors right is difficult, even in economies where there is a high level of experience and capabilities. A 2007 review of the UK's Highways Agency identified a trend of high outturn costs compared to initial business case estimates. Alongside the lack of capability to estimate costs and weak risk management, the method of procurement was one of the key causes identified for this failure.

In Australia, the arrival of international contractors in the local construction market has changed the competitive dynamic, and is expected to increase competition, reduce construction costs and accelerate delivery. Historically, the dominance of a few local construction firms and the complexity of the tendering process had created a barrier to entry for international contractors, which kept upward pressure on project costs and reduced the capacity of the market to deliver.

Appropriate risk allocation is at the heart of the procurement process. Allocating risks to the party best able to control them delivers greater value for money from the project. It can manage project complexity, reduce project failure rates, and encourage innovation from the party best placed to see it through.

References:

OECD, (2013) Fighting Bid Rigging in Public Procurement in Mexico. Available at: <https://www.oecd.org/daf/competition/MexicoSSSTEBidRiggingENG.pdf>

OECD, (2015) Fighting Bid Rigging in Public Procurement in Mexico. Available at: <http://www.oecd.org/daf/competition/FightingBidRigging-Mexico-CFE-Report-2015.pdf>

World Economic Forum, Global Competitiveness Index, Historical Dataset. Available at: reports.weforum.org/global-competitiveness-index/

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How does InfraCompass measure procurement frameworks?

The procurement driver in InfraCompass is measured through seven metrics, as shown in Table 6.

Procurement processes have an impact on infrastructure market outcomes primarily through the cost of tendering and barriers to market entry.

Table 6 – The metrics that demonstrate efficient procurement of infrastructure ¹⁷

METRIC	IMPORTANCE TO INFRASTRUCTURE MARKETS
<p>PROCUREMENT OF PPPS, 0-100 (BEST) How clear, fair and transparent the PPP procurement process is.</p>	
<p>BID EVALUATION Assesses transparency, accessibility, fairness of bid opening and evaluation stages, as well as feedback to unsuccessful bidders.</p>	
<p>CALLING FOR TENDERS How equitable and accessible the tendering process is.</p>	
<p>DEGREE OF TRANSPARENCY IN PUBLIC PROCUREMENT Transparency of the process for the award of public contracts.</p>	
<p>AVERAGE PROCUREMENT DURATION (IN MONTHS) The time (in months) from public announcement of a project to the award of a contract.</p>	
<p>POST AWARD MANAGEMENT OF PROCUREMENT CONTRACT Management of contract changes or cancellation, as well as the process to close the contract at the completion of the project.</p>	
<p>DOES THE COUNTRY PUBLISH GUIDELINES FOR THE PROCUREMENT OF INFRASTRUCTURE PROJECTS? How well documented and prescriptive the procurement process is.</p>	

¹⁷ For a list of metric data sources, see Country Appendix. For further information on importance to infrastructure, see Technical Appendix.

DELIVERY AND OPERATIONS

DEVELOPED NATIONS WITH STRONG TRACK RECORDS OF DELIVERY AND TRUSTED INSTITUTIONS ARE LEADERS IN THE DELIVERY AND OPERATION OF INFRASTRUCTURE ASSETS. LOWER RISK PERCEPTIONS AND BETTER HISTORIC DATA LEAD TO MORE INFORMED DECISION MAKING BY GOVERNMENTS AND INVESTORS. HOWEVER, EMERGING ECONOMIES ARE, ON AVERAGE, ATTRACTING GREATER PRIVATE INFRASTRUCTURE INVESTMENT AS A PROPORTION OF GDP THAN DEVELOPED ONES – 0.34% VERSUS 0.24% – AS WELL AS HIGHER TOTAL INFRASTRUCTURE INVESTMENT AS A PROPORTION OF GDP, ILLUSTRATING THE IMPORTANCE OF ECONOMIC INFRASTRUCTURE PROJECTS TO THEIR ECONOMIES AND THEIR EFFORTS TO ACCELERATE GROWTH THROUGH INFRASTRUCTURE INVESTMENT.

Ultimately, the combination of governance and regulatory frameworks, permits, planning and procurement should result in the delivery of the infrastructure that a country needs, in terms of its ability to service the requirements of citizens and industry.

Of course, infrastructure needs evolve with demographic and technological change, but historic trends are a good general indicator of success, demonstrating to the private sector and others that a government possesses the capacity to deliver the projects its country or region needs. Conversely, a high incidence of cancelled, distressed or renegotiated projects can signal to investors that investment in a particular country could be high risk or ultimately unsustainable¹⁸.

While the existence of strong transparent processes around governance and procurement are good, publicly available information on historical delivery is a better indicator of a country's track record of compliance with those processes on other, similar projects¹⁹.

Track record is not only important for determining the likelihood of success at the project delivery stage. Historical lifecycle costs of projects are also an important factor for the private sector to understand the timing of greenfield investments and the viability of secondary market infrastructure assets²⁰. Historical delivery trends can help ascertain the actual costs of infrastructure assets in a country, before detailed cost planning is carried out.

A country's track record can also indicate its appetite for private sector financing. Existing private sector investment signals that the country has viable mechanisms in place to provide revenues that can be used to fund capital investments. On this measure (private infrastructure financing as a proportion of GDP), emerging economies can outperform more developed ones, illustrating the importance of infrastructure projects to emerging markets.

Secondary market information can also provide insight into the liquidity of a country's infrastructure market for future sales and asset recycling. For example, asset recycling through secondary markets can provide financing for new projects that may not otherwise proceed²¹. Asset recycling can also increase interest in the broader infrastructure market for jurisdictions that have created a market for asset sales²².

18 WEF (2010) Positive Infrastructure: A Framework for Revitalizing the Global Economy, WEF, Geneva.

19 G20/OECD (2014) Checklist On Long-Term Investment Financing Strategies And Institutional Investors. OECD, Paris.

20 WEF, 2012 Strategic Infrastructure: Steps to Prioritize and Deliver Infrastructure Effectively and Efficiently, WEF Geneva

21 KPMG (2017) Foresight, A Global Infrastructure Perspective - Ten Emerging Trends in 2017. Available at: <https://assets.kpmg.com/content/dam/kpmg/ca/pdf/2017/01/foresight-emerging-trends-2017-KPMGinCanada.pdf>

22 World Economic Forum (2014) Infrastructure Investment Policy Blueprint, WEF, Geneva.



How does InfraCompass measure a country's track record of infrastructure delivery?

InfraCompass measures infrastructure delivery and operational performance through five metrics, as shown in Table 7.

While the existence of strong transparent processes around governance and procurement are good, publicly available information on historical delivery is a better indicator of a country's track record of compliance with those processes on other, similar projects.

Table 7 - The metrics that demonstrate a track record of infrastructure delivery ²³

METRIC	IMPORTANCE TO INFRASTRUCTURE MARKETS
<p>INFRASTRUCTURE QUALITY Drawn from the World Economic Forum's Global Competitiveness Index, specifically the quality of overall infrastructure.</p>	
<p>INFRASTRUCTURE INVESTMENT, % OF GDP Total economic infrastructure expenditure, % of GDP (5 year average) based on government and multi-lateral development agency estimates.</p>	
<p>PRIVATE FINANCE INFRASTRUCTURE, % OF GDP Financial close value of privately financed economic infrastructure, % of GDP (5 year average).</p>	
<p>VALUE OF CLOSED PPP INFRASTRUCTURE DEALS, % OF GDP Financial close value of privately financed PPP infrastructure, % of GDP (5 year average).</p>	
<p>VALUE OF CLOSED INFRASTRUCTURE DEALS, SECONDARY MARKET, % OF GDP Financial close value of privately financed secondary market transactions in infrastructure, % of GDP (5 year average).</p>	

²³ For a list of metric data sources, see Country Appendix. For further information on importance to infrastructure, see Technical Appendix.

Global Infrastructure Hub tools for planning and risk allocation

Project Pipeline

The [Global Infrastructure Hub Project Pipeline](#) is a dynamic platform containing government infrastructure projects. Created in response to market demand for an early stage global pipeline of projects, the Pipeline provides visibility of government projects that are being considered or are under development in a consistent, clearly defined and easily searchable format.

Key features of the Pipeline are:

- Standardised format across all projects
- Allows tracking of projects from inception to operation
- Search across multiple criteria including the potential role for private sector
- All information provided by government authorities

Risk Allocation Guide

Risk allocation in infrastructure is at the heart the procurement and contracting process. Ensuring risks are allocated to the party best able to control and manage them will deliver better value for money and reduce risk of project failure in the long term.

The [GI Hub's risk allocation guide](#) demonstrates previous successful risk allocations in PPP projects and identifies potential differences in allocation across emerging and developed countries, in 11 sectors and for 18 project risks. The guide acknowledges that risk appetite changes over the course of a country's development, based on individual project characteristics and track record of project performance.



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Hardcopy ISBN: 78-0-9946284-9-7

Online ISBN: 978-0-9946284-8-0

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