STOCK-TAKING OF SELECTED POLICY INDICATORS ON THE ENABLING ENVIRONMENT FOR INFRASTRUCTURE INVESTMENT

This paper has been prepared by the OECD and the World Bank Group for the 4th Meeting of the G20 Development Working Group being held on 14-16 September 2015 in Antalya, Turkey.

This responds to the G20's request to analyse existing policy indicators on the enabling environment for infrastructure investment in developing countries (*G20 DWG - Infrastructure 2015 - Action 1 - Policy Indicators*). This paper takes stock of existing indicators and also points to recurrent issues affecting the mobilisation of greater investment in infrastructure. It proposes possible next steps for action by low-income countries (LICs), development partners, MDBs and international organisations, in line with the infrastructure investment objectives of the Sustainable Development Goals and the Financing For Development Agenda.

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Executive Summary

This note is a contribution to the terms of reference of the G20 Development Working Group (DWG), calling on international organisations to identify a set of policy indicators on the enabling environment for mobilising infrastructure investment in developing countries. These indicators could be used voluntarily by:

- Developing countries to (i) identify and prioritise reforms and (ii) benchmark and assess progress over time and across countries; as well as;

- G20 members (in their role as providers of development finance and South-South co-operation) and MDBs to (i) better align their capacity building and other forms of support with the identified priorities of partner countries, and (ii) better quantify the policy and investment impact of these support programmes.

The note points to some recurrent issues affecting the mobilisation of greater investment in infrastructure – both private (domestic and international) and public (national) – together with common options for reform. Based on earlier OECD research using the Policy Framework for Investment (PFI)[1] these issues are grouped into: (i) investment policy openness and predictability; (ii) infrastructure markets; (iii) public governance; and (iv) financial frameworks for infrastructure investment. Each of these areas matters both to investors (from the perspective of returns and certainty) and to governments (from the perspective of fiscal sustainability, value-for-money and social welfare – and also as providers of public investment themselves). For each relevant policy issue, the paper takes stock of available indicators (summarised in Annex 1) that can help decision-makers, and flags information gaps. For each one of the reviewed indicators, the link to the original source is provided, in order to facilitate access to the underlying approach (this paper does not go into discussing the specific methodologies used to build indicators).

The four proposed areas to analyse a country policy framework to mobilise investment in infrastructure and the list of available indicators are not meant to be prescriptive or set a universal standard, nor to rank countries. Rather, they aim at helping policy-makers in their efforts to diagnose binding constraints to investment, with a view of informing the design of their policy frameworks and improving their evidence basis. Also, not every indicator may be relevant for every country and every infrastructure sector. On this basis, several conclusions are highlighted below regarding: the substance of the indicators (their content and thematic coverage); their methodology (the type of data and its collection); and the implications for interpretation and use of this data by Low Income Countries (LICs) as well as development partners. The concluding chapter expands on these elements further.

Comprehensiveness and accuracy of the policy areas covered:

Several policy settings that are particularly important for infrastructure investment – including the overall quality of rule of law and business climate, the regulation of infrastructure markets, and the relative openness of infrastructure markets to private (domestic and foreign) investment – are covered by several indicators (see Annex 1). Others (in particular measures related to financial market development, see Chapter 5) are already regularly collected by investment banks and financial market analysts and therefore do not specifically require further work by international organisations, nor the development of new indicators; they are therefore only briefly addressed.

On the other hand, key areas where systematic data is lacking include: government capacity for managing private participation in infrastructure (where efforts are underway by the World Bank Group, but only cover the legal and institutional framework, and by the Economist Intelligence Unit (EIU) *Infrascope*

index, whose data, however, remain mostly perception-based and, in both cases, data is specific to public-private partnerships in infrastructure); the extent of the 'vertical governance gap' between central and local governments in terms of infrastructure investment and management (including indicators on the particular challenges faced by municipal governments in developing urban infrastructure); and the corporate governance, fiscal weight and efficiency of State-Owned Enterprises operating in infrastructure markets. There is also a relative absence of indicators specific to the challenges of developing regional infrastructure, which is particularly important for the small and land-locked economies in Sub-Saharan Africa and South Asia. In addition, many of the more complex indicators which are available (such as those pertaining to the governance of infrastructure regulators) only systematically cover OECD countries to date. These may need further extension – and possible adaptation in questions and methodology – to apply to LICs.

Methodological shortcomings in compilation of indicators:

Largely for reasons of time and resources, there is a predominance of *de jure* as well as perception-based indicators, with less use of *de facto* and outcome-based measures. In many LICs this can make the indicators far less meaningful, especially when there is a large gap between investment policy 'on the books' and situations on the ground Where outcome measures are used, macro-level (or aggregate) indicators tend to be more prevalent, and it could be desirable to complement these with indicators at a more micro level, in particular those related to changes in transaction costs in specific projects or infrastructure sectors. While micro-level data is more challenging to obtain, it is often more closely linked to policy changes and would allow users to drill deeper into the specifics of different infrastructure contract forms and sub-sectors. Efforts are underway to identify these shortcomings and define strategies to address those, for example between the OECD and the Southern African Development Community (SADC).

Looking towards implementation by developing countries and development partners:

To pave the way for use by LICs and their development partners of a coherent set of indicators on the enabling environment for infrastructure investment, realistic options must first of all be considered for building better linkages across existing indicator sets. This can notably create economies of scale, and reduce duplication, when it comes to extending indicator coverage to more LICs (or to volunteer pilot countries). For several measures (such as government capacity for PPP implementation, services trade restrictiveness, or the quality of the overall investment climate) more than one International Organisation (IO) prepares a set of corresponding indicators. Options for enhancing the complementarity across these should be considered, including proposing a "shortlist" (or smaller and more manageable set) of prioritised indicators which are feasible and appropriate for measurement in LICs (*see Conclusion and Annex 1*).

Once indicators have been prioritised and the largest gaps in coverage have been addressed, multilateral and bilateral development partners, as well as other international organisations, will need to consider how to enhance their applicability and accessibility for developing country governments. Data collection mechanisms will need to be sufficiently cost-effective for governments to use them on a regular basis. A monitoring framework could be built on the basis of the identified indicators. Indeed, this paper only addresses the first two elements of the standard monitoring framework: it conceptually organises the relationship between policies and the desired outcome (greater and more effective infrastructure investment flows); and identifies a corresponding set of indicators. In line with the Terms of Reference, it does not propose a methodology for prioritising and sequencing reforms on this basis. Nor it discusses the statistical frameworks and related capacity needs that need to be developed in LICs. In this respect, the DWG might wish to explore what are the on-going efforts in supporting statistical capacity building by national, regional and international bodies and how they can better target the needs of measuring and supporting countries' efforts at mobilising investment in infrastructure.

Whether such a monitoring framework should adopt a rank-based approach or, alternatively, an approach that measures policy evolutions relative to a given 'good practice' (without scoring countries against each other) is not addressed in the paper and should, in case the DWG deemed it useful, be discussed and determined at a later stage, possibly by LICs themselves in collaboration with the 2016 G20 Presidency.

Finally, any indicators and corresponding monitoring frameworks should be fully aligned with (or improve, but not simply add to) pre-existing monitoring and reporting practices in LICs – including the approaches of different Regional Economic Communities (see Annex 1). It is important to avoid adding to the administrative and regulatory burden of data collection in these countries. Especially when combined as a common set, the relevance of these indicators will also need to be 'road-tested' vis-à-vis infrastructure practitioners, host country governments (public work ministries, etc.) and other intended users, before they are used more widely.

1. Introduction

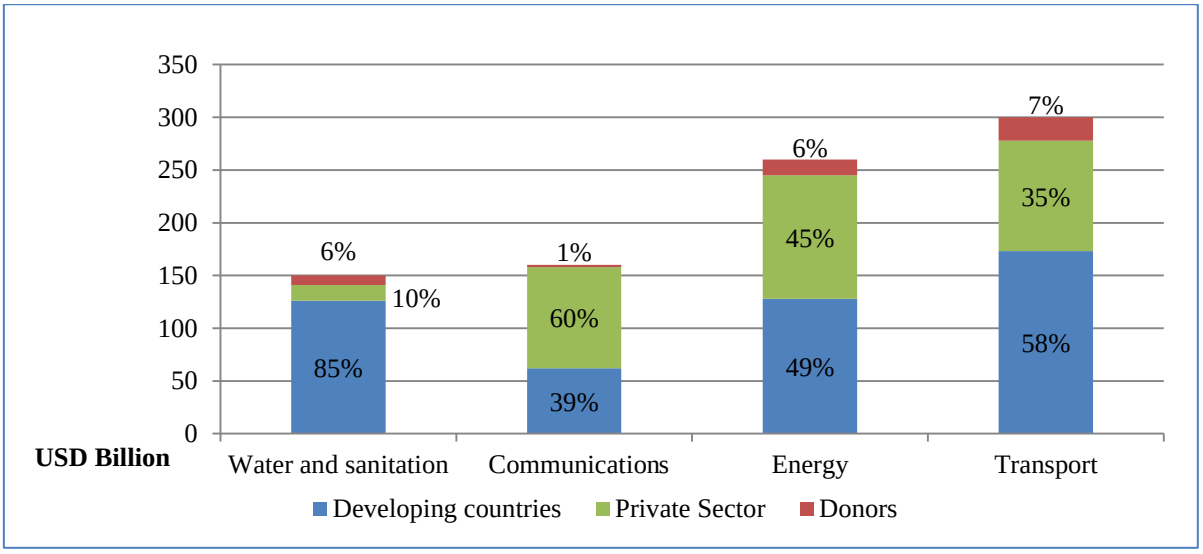
Mobilising private infrastructure investment for development

At a time where public finances are under strain, mobilising further private investment into infrastructure sectors features at the top of the global policy agenda. The OECD has estimated that required investments in physical infrastructure to 2030 in order to meet social needs and support economic growth amount to over 4% of global GDP (OECD, 2007; 2012). USD 90 trillion will in particular be needed to invest globally in cities, land use and energy infrastructure between now and 2030 (Global Commission on the Economy and Climate, 2014). In OECD countries, investments are increasingly needed to upgrade, retrofit or replace existing ageing infrastructures. In developing and emerging economies, economic development and rapid urbanisation rates are similarly driving increasing demand for infrastructure expansion, with leapfrogging opportunities towards sustainable and resilient infrastructure and development pathways. The current dearth of infrastructure investment is a global problem, but it takes on some particular aspects in lower income countries (LICs). Here inadequate infrastructure networks have stood in the way of attaining several of the Millennium Development Goals (MDGs), and may also complicate realisation of the post-2015 Sustainable Development Goals (SDGs). In fact, if infrastructure investment gaps are not bridged, failing to address global infrastructure needs would not only weaken economic growth but may also potentially reverse some of the positive gains from the MDGs to date (Culbard and Nguyen, 2015). Transport and communications infrastructure is especially important for LICs to make the most of regional and international trade opportunities, and provides essential connectivity for land-locked countries as well as small island states. Meanwhile affordability and access to basic infrastructure services, including water and energy, is crucial not only for productivity but also more fundamentally for raising living standards and eliminating poverty, as embedded in the SDGs.

At the same time, provided there is a favourable enabling environment, infrastructure sectors can present vast investment opportunities, and are natural candidates for greater private sector participation. For this reason infrastructure investment features prominently in the Financing for Development agenda, as well as in the G20 efforts aimed at enhancing private capital flows to LICs. The use of PPPs is rising again after a setback in the period around the 2007-2008 financial crisis. PPP investments amounted to USD 80 billion per year on average during over 2007-2013 (World Bank, 2015).

This being said, about 70% of infrastructure funding in developing economies is still estimated to come from government budgets and national development banks – compared to about 20% provided by private investors and less than 10% by multilateral and development partners. Figure 1.1 illustrates how these sources of finance are distributed by infrastructure sub-sector. Yet including in basic infrastructure, the resources needed every year to achieve the SDGs are at least ten times greater than the current levels of ODA. This includes not only new infrastructure investments, but expansion, rehabilitation and maintenance of existing networks. It therefore goes without saying that mobilising private investment flows will be crucial; and infrastructure is a sector in which ODA, public spending and private finance can work hand-in-hand particularly well to meet the ambitions of the SDGs and of the 2015 Financing For Development (FFD) Agenda. In calling on developing countries to "deliver essential public services for all", the freshly released Addis-Ababa Action Agenda thus commits to "strong international support for these efforts" and to "explor[ing] coherent funding modalities to mobilise additional resources, building on country-led experiences" (UN, 2015).

Figure 1.1. Developing Country Infrastructure by Source of Finance, 2013



Source: estimation of financial support from the private sector and from developing countries is an average of figures made by the authors based on data retrieved from UNCTAD (2014) World Investment Report. Data on development partners are disbursements to DAC CRS sectors 140, 210, 220, 230 for 2013.

But the central challenge is not only one of mobilising financing (be it public or private). While that has mostly been the focus of past infrastructure investment debates, there is a growing consensus on the equally – if not more – important need to establish good governance conditions for public investment and infrastructure management, so as to maximise value for money and improve public welfare. Providers of development assistance, development finance institutions and sovereign wealth funds, in addition to governments and international organisations, are recognising the need to help strengthen the enabling environment of developing countries—particularly LICs and LMICs—to boost the confidence of the private sector to invest in their infrastructure. These actors have collectively identified bottlenecks which arise from suboptimal investment policies and procedures, inefficient market regulation, deficient financial frameworks and lack of public sector capacity – and are therefore supporting the establishment of effective legal and institutional systems based on the rule of law, good governance, and transparency.[2] Alongside, the establishment of platforms where these different actors can meet and dialogue – such as the G20 Global Infrastructure Hub – hold strong potential for collectively addressing these challenges and for supporting knowledge sharing relevant to LIC efforts in improving their pipelines of bankable projects and enhancing the investment attractiveness of their infrastructure sectors.

A need for policy indicators to better track and enhance reform

Efforts to enhance the enabling environment for infrastructure investment have thus been growing in LICs, with significant backing from the international community. Yet to date, there have been few attempts to systematically organise information across developing countries in a way that allows governments to assess to what extent policies and regulatory frameworks are improving the level and quality of infrastructure investment. In view of these gaps, in 2014 the G20 DWG has called for "drawing on the experience of key international organisations, such as the OECD Investment Policy Reviews, and work of MDBs, to identify a range of indicators that could be used on a voluntary basis by developing countries to help in identifying and prioritising reforms to their enabling environment for infrastructure investment."[3] More recently, and stretching beyond infrastructure alone, the Addis-Ababa Action Agenda which concludes the FFD process makes very clear that "the post-2015 development agenda must be underpinned

by equally ambitious and credible means of implementation". Indicators may contribute to the effectiveness of those means of implementation.

The G20 has accordingly asked the OECD and the World Bank Group (WBG) to work with other international organisations on the identification and compilation of a set of indicators on policies that can enhance the enabling environment and mobilise greater investment in infrastructure. These indicators would inform G20 efforts to support developing countries in addressing challenges with regard to upstream preparation of infrastructure projects. This report takes a first step in identifying potentially important policy settings and areas that governments need to consider to mobilise greater and better investment in infrastructure – both from private and institutional investors (domestic and international) and from the public sector (national). Four key themes likely to affect levels of private investment in infrastructure are identified: (i) investment policy openness and predictability; (ii) infrastructure markets; (iii) financial framework; and (iv) public governance. For each theme the report: (i) provides some rationale for why the policy area is relevant, from the perspective both of investors (relative to market access and returns) and of governments (relative to value-for-money, fiscal sustainability and social welfare, among others); (ii) points to some recurrent issues affecting investors and governments, together with common options for reform; (iii) takes stock of available, corresponding indicators; and (iv) flags information gaps.

The selection of these four proposed themes and of relevant indicators is informed by a large set of evidence, including the 2014 OECD report on "Fostering Infrastructure Investment: Lessons Learned from OECD Investment Policy Reviews"[4], which draws on applications of the OECD Policy Framework for Investment (PFI) to infrastructure sectors in over 20 developing and emerging economies. The PFI is designed to help governments address the structural conditions for investment across all sectors of the economy, in a coherent manner. It was updated in 2015 by a global taskforce led by Myanmar and Finland and composed by over 70 countries. When they endorsed the updated PFI last June, OECD Ministers encouraged countries to use it as a reference for development co-operation, and particularly as a path towards the SDGs. This was reiterated at a side-event of the Third International Conference on Financing for Development (FFD) held in Addis-Ababa last July, with a focus on long-term investment in infrastructure. This report is a step in this direction: by investigating how to better back the PFI and other related infrastructure policy instruments with actionable indicators, it can enhance their effectiveness as tools for reaching the objectives of the SDGs.

Indeed, the availability of precise indicators can help policymakers calibrate and monitor reforms aimed at enhancing the enabling environment for infrastructure investment, while ensuring that the resulting investment meets societal needs. Monitoring processes can help to better identify and raise the profile of such implementation gaps, providing policy makers, businesses and civil society with information that can encourage corrective action. When well communicated, monitoring can also help reach consensus around the benefits (as well as costs) of reforms. This makes the reform process more inclusive, and can be particularly useful on topics that are often prone to public controversy or institutional and historical roadblocks, such as greater private participation in the delivery of public services. Finally, monitoring helps to learn from the reform process and can guide the design of better policies in future. The policy areas and potential indicators identified below – and expanded further in Annex 1 – are those currently existing and compiled by different policy bodies of the OECD, as well as by partner organisations such as the World Bank Group.

The intent is twofold: to identify a compact set of policy areas and dimensions that governments need to look at to mobilise investment in infrastructure; and to facilitate a gap analysis regarding: (i) which policy areas require the development of new indicators, and/or the refinement or rationalisation of existing ones; and (ii) where country coverage is currently limited and would usefully be extended to LICs. Indeed in several cases the indicators featured below have to date been compiled mostly for OECD and G20 economies, and they may need some adjustments in view of greater applicability to LIC context.

2. Investment policy consistency and openness

2.1 Policy consistency

Signalling government commitment vis-à-vis prospective private investors

Certainty and government commitment play a crucial role in shaping investors' risk perception and willingness to invest in infrastructure. Indeed, especially in countries that are not regularly rated by credit rating agencies, it is difficult for investors to measure the credibility of political commitment to promote private participation in infrastructure projects. To an even greater extent than OECD and G20 countries, LIC governments must find – and provide prospective investors with – adequate sources and means of measuring commitment. Since policy openness and predictability at both national and local/municipal level affect perceptions of risk and returns in LICs, the availability of better indicators capturing these dimensions would serve to informing investors' risk management and mitigation approaches and contribute to advancing the objective set forth in a companion deliverable of the G20 Development Working Group (DWG) in the area of infrastructure.

The long time horizon of projects, together with upfront costs, asset immovability, and the politically sensitive nature of many infrastructure investments, combine to create an important problem of "time inconsistency" for investors: for political reasons, government short-termism (aligned with the political cycle and changing administrations) can be very present, with a strong impact on investor certainty. Private investors fear related risks of expropriation, both direct and indirect – for instance if previously divested companies are renationalised, or if tariffs in infrastructure markets change in such a way as to considerably hamper private cost recovery. In particular the upfront capital costs entailed in physical infrastructure projects may put the private co-contractor of a PPP in the situation of an 'obsolescing bargain' vis-à-vis public partners, should the latter default once the immoveable assets have been built (Kindleberger, 1969; Vernon, 1971; Post and Murillo, 2014). Such uncertainty may exert a particularly strong brake on foreign investment, which is more footloose pre-establishment, and which generally faces more severe information gaps, including less familiarity with the host country jurisdiction.

The 2013 MIGA-EIU Political Risk Survey suggests that investors take these concerns very seriously: among the types of political risk of most concern to investors in developing economies for 2013, the risk of adverse regulatory change tops the list for 58% of investors, followed by breach of contract (48%) and trade and competitiveness restrictions (43%). Of those investors having experienced a breach of contract event for 2013, 19% were engaged in electricity and power, 16% in telecommunications, 12% in transport, and 6% in water and sanitation. Direct expropriation ranks as the foremost concern for fewer investors (at 28%), and MIGA analysis suggests that this risk is oftentimes more perceived than it is real – but the impact on investment flows remains important. More generally, the surveyed investors classify macroeconomic instability as the key constraint for foreign investment in developing countries over the medium term (MIGA, 2013). While equivalent cross-country surveys unfortunately remain relatively rare for capturing the views of domestic investors, it can reasonably be assumed that they broadly share such concerns.

For these reasons, the credibility and consistency of the regulatory framework for infrastructure investment is likely to play an important role in determining investors' appetite to expand or improve infrastructure delivery. This calls for reinforcing so-called government "commitment technologies", which demonstrate that the public partner will not renege on commitments of the infrastructure contract ex-post (Collier, 2011). Experience gathered through application of the OECD Policy Framework for Investment (PFI) suggests that effective "technologies" can include: overall quality of the institutional and legal environment (including as pertains to contract enforcement, contract renegotiation provisions and rule of law); availability of investor protection and dispute settlement provisions within domestic laws, and also as

embedded in International Investment Agreements signed by the host country; and existence of an explicit legal framework for private participation in infrastructure (as embodied for instance in a national PPP law or policy, which can among others provide guidance on contract design and modification – see Chapter 4, on the public governance of infrastructure investment, below). The relevance of these different policy elements is corroborated by the MIGA-EIU Political Risk Survey. Of the methods perceived as most effective to address breach of contract according to the 2013 Survey, contract renegotiation featured at the top (for 47% of investors), followed by international arbitration (21%), local arbitration (19%) and political risk insurance (12%). This preference for contract renegotiation is likely to apply to domestic investors as well, especially as these would rarely have access to international arbitration as an alternative.

Policy makers have a key role to play in improving the domestic enabling conditions for private investment in green infrastructure sectors such as: sustainable and affordable energy; energy and resource efficiency; sustainable transport; buildings; water sanitation and distribution systems; waste management; energy-smart technologies; and climate-resilient infrastructure (OECD, 2015e). For example, the OECD *Policy Guidance for Investment in Clean Energy Infrastructure*[5], annexed the communiqué of G20 Finance Ministers and Central Bank Governors at their meeting in October 2013, discusses policy issues for governments to consider in order to attract private investment in renewable-energy power plants (OECD, 2015f; G20, 2013). In terms of measurement, a few country-by-country indicators estimate the attractiveness of specific countries in terms of private investment in renewable energy. They include for example the World Bank Group's *Readiness for Investment in Sustainable Energy* (RISE; World Bank, 2015b). In addition, forthcoming OECD work is going to estimate empirically how various business climate conditions influence the effectiveness of investment incentives in driving investment in low-carbon technologies in the power sector (OECD, 2016 forthcoming). Indicators for energy infrastructure need to cover all relevant aspects, namely sustainability, reliability and affordability.

Government capacity for managing the transition to greater private involvement in infrastructure

Demonstrated government capacity to effectively manage infrastructure projects, and to provide investors with a credible pipeline of bankable projects, is another element to be considered in this context. Indeed cases of infrastructure Public-Private Partnerships (PPPs) failing as a result of poor project preparation, negotiation or implementation on the government side (due to insufficient familiarity or capacity to deal with the complexity of such projects) abound. A track record of successful PPP infrastructure projects in the past, as well as the presence of dedicated institutional structures to manage project preparation and risks, can go a long way towards reassuring prospective investors – as detailed further in Chapter 4, with respect to the policy process. In particular, the development of specific regulatory and institutional frameworks for PPPs represents a political statement of support for private sector participation in infrastructure, and can strengthen the investment climate as well as guide better project preparation and risk management. Specific legislation on infrastructure is rapidly evolving in developing economies, and will need to go hand-in-hand with increased administrative capacity and technical expertise in the design and monitoring of infrastructure contracts so as to effectively attract and better manage investment. On the private sector side, efforts will also be needed to build capacity of domestic entrepreneurs for engaging in infrastructure markets, and for effectively partnering with foreign investors. Successful frameworks for infrastructure maintenance will also be crucial, to ensure that countries do not backtrack on gains made in the past (see Box 4.2 below).

Increasing efforts are being deployed to measure the level of PPP 'maturity' and related government capacity in the overall policy-making process of developing countries. The *Infrascope* index is one such example. In addition, the WBG is currently developing a *Benchmarking PPP Procurement* tool to assess the readiness of countries to undertake PPPs, building on the work that the WBG has previously conducted on benchmarking public procurement systems (which has been submitted to the G20 Anti-Corruption Working Group). Collectively, these and other various indicators, as listed and described in the attached

Annex, could be used to shed light on the different dimensions of investment openness and consistency for infrastructure investment.

Box 2.1 – Donor support for investment policy openness and predictability in infrastructure

Programmes by development partners the enhance policy openness and predictability mostly focus on legal and judicial development. More specifically, they include capacity building of the civil justice sector in order to ensure procedural fairness and effectiveness as well as better contract enforcement or alternative dispute settlement procedures. They also include direct support to initiatives aiming at upgrading managerial capacity of the local private sector. Other types of assistance concern advising on policies and strategies for promoting investment liberalisation through Public-Private Partnerships (PPPs).[6]

In transport, an example is support to Indonesia by the World Bank, IMF, ADB, and Japan, to improve the regulatory and institutional frameworks that involve land acquisition for public infrastructure and inter-island transport connectivity. In water, AfDB, Austria, Denmark, EU, Germany, Sweden and UK fund Uganda to help improve reforms and investment planning in the water sector and train civil servants. In ICT, World Bank, AfDB, IsDB, EU, France, Germany, India, South Africa, and USA finance two regional connectivity programmes aiming at developing sustainable regional telecommunication infrastructure among 15 West, East and Southern African countries. They provide technical assistance to relevant institutions on procurement, financial management, monitoring and evaluation, and private sector participation through PPPs.

2.2 Openness to foreign investment

Restrictions on foreign investment in infrastructure may limit investment flows without necessarily securing the intended development objectives

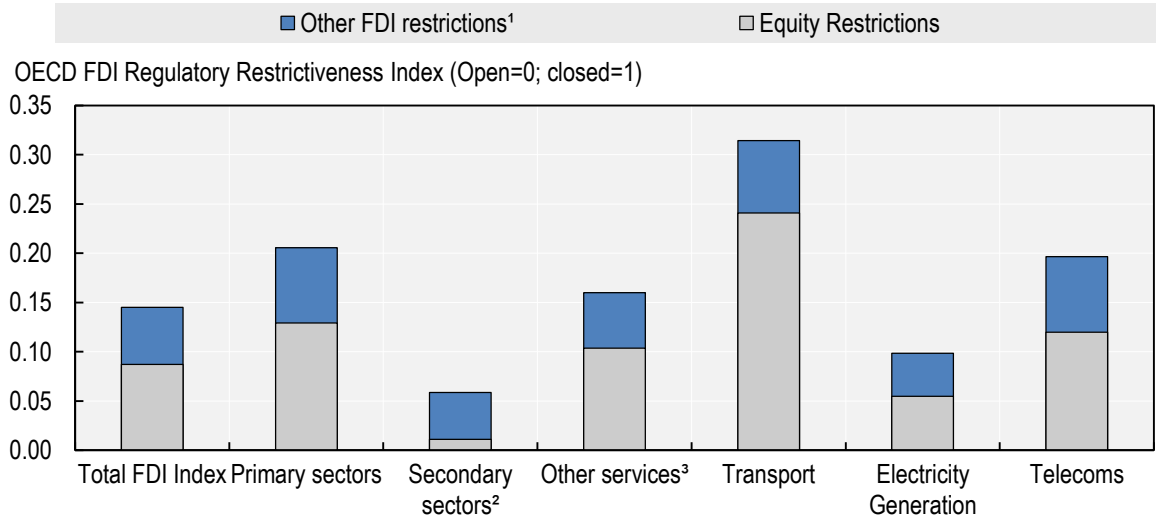
Governments have the right to regulate and choose their degree of openness to private sector (both foreign and domestic) participation in infrastructure. Statutory barriers, together with other operational restrictions, are in place in many LICs as well as G20 economies, to shield domestic investors from external competition or to meet other social or economic goals (for instance, ensuring macro-economic stability and limiting exchange rate volatility). No government applies national treatment across the board, even in OECD Member countries where restrictions on foreign investment tend, on average, to be lower than in other parts of the world. This said, restrictions on foreign direct investment (FDI) have been found to result in less FDI overall; and in infrastructure sectors of developing countries, a considerable portion of private financing for infrastructure continues to require foreign sources since domestic financial markets are less liquid and relatively underdeveloped (see Chapter 5). In parallel, the currency risks that foreign capital can bring to infrastructure projects (given that these generate revenue flows in local currency) can be mitigated through careful contract structuring, forex liquidity facilities, and other mitigation tools (PPIAF, 2014).

The OECD *FDI Regulatory Restrictiveness Index* (which takes stock of regulatory restrictions preventing foreign investors from entering specific markets – see Annex and Figure 2.1 below)[7] confirms that infrastructure sub-sectors remain generally more closed to foreign investment than other sectors of the economy. Without questioning the right of governments to restrict some sectors to FDI, governments may wish to consider whether public policy objectives cannot be achieved through non-discriminatory means. When capacity for competitive infrastructure provision is lacking at the domestic level, as is sometimes the case in LICs, such restrictions might have adverse effects on the overall level of investment and employment. They may also send mixed signals to all investors (domestic and foreign, and also state-owned) regarding the government's stance on competitive delivery of infrastructure services.

Against this background, G20 leaders have stressed the importance of maintaining open and transparent investment regimes. Meanwhile, governments which are not ready to move to greater openness in strategic infrastructure sectors should enhance transparency on the restrictions in place and regularly assess their impact, in line with their national policies. Alongside, targeted efforts are necessary in many developing countries to raise the supply-side capacity of domestic investors as potential infrastructure providers. Targeted financing schemes can be used to promote greater involvement of domestic suppliers, including SMEs, in infrastructure projects. Foreign participation in infrastructure sub-sectors can also be accompanied by business linkage and training programmes designed to open more opportunities for domestic entrepreneurs (OECD, 2015c).

Foreign equity restrictions are by far the most important type of restriction in infrastructure sub-sectors, and can take different forms: sometimes the scope is limited to only acquisitions and sometimes to both acquisitions and greenfield projects; sometimes it applies only to listed companies or to investments in a specific company, most notably in former state monopoly holders; in other cases, there is an overall cap of foreign investment in the entire sector, allowing foreign investors to compete in the marketplace, but only up to a certain limit. Such restrictions are especially prevalent in the services segments of infrastructure networks, and less so in the operation of physical infrastructure. The transport sector, particularly air and maritime transport sectors, including airport and port operations, tends to face greater restrictions.[8] To capture this granularity, the OECD *FDI Regulatory Restrictiveness Index* and related indices (such as the OECD *Services Trade Restrictiveness Index*, STRI) can be useful inputs to a set of comprehensive policy indicators.

Figure 2.1 FDI restrictions in infrastructure sectors across G20 countries*



Source: OECD FDI Regulatory Restrictiveness Index database, http://www.oecd.org/investment/fdiindex.htm.
Notes: (*)The OECD FDI Regulatory Restrictiveness Index includes 58 countries and covers only statutory measures discriminating against foreign investors (e.g. foreign equity limits, screening & approval procedures, restriction on key foreign personnel, and other operational measures). Other important aspects of an investment climate (e.g. the implementation of regulations and state monopolies among other) are not considered. (¹) Other FDI restrictions include screening & approval measures, restrictions on key foreign personnel and other operational restrictions (e.g., local incorporation requirements, restrictions on foreign land ownership); (²) Manufacturing and construction sectors; (³) Other services include distribution services, hotels & restaurants, financial services, business services and real estate investment.

Restricting investment through public procurement measures

Public procurement legislation can also have an important bearing on investment openness, particularly for foreign investors. In developing countries in particular, FDI restrictions in infrastructure sectors are frequently combined with clauses within public procurement legislation establishing preference margins for domestic bidders to infrastructure contracts, or for participating SMEs. Where they are used, it is important to ensure that such schemes are well-targeted and do not compromise the delivery, nor quality of the procured product or service. The more effective schemes include caps based on the volume and technical complexity of projects, and are accompanied by supply-side efforts to enhance the capacity of domestic suppliers so that they can offer truly competitive bids (OECD, 2014c).

A well-designed and competitive procurement regime can also help guarantee procedural fairness to all bidding investors and minimises risks of efficiency loss as well as of corruption, bidder collusion and bid-rigging. Public procurement represents a significant share of G20 countries' economies (on average over 13% of GDP) and savings from more competitive procurement practices are estimated to be as high as 8% of total project development costs. According to the OECD Foreign Bribery Report, in 57% of cases bribes are paid in order to obtain public procurement contracts (OECD, 2014b). Recognising the importance of the challenges facing policymakers in this field, the G20 Anticorruption Working Group has recently adopted *G20 Principles on Integrity in Public Procurement*. These were co-drafted by the OECD together with Italy and Brazil, and are aligned with the *OECD Principles on Public Governance of PPPs*. The dimensions of procurement and PPP legislation which flow from these Principles, and which could usefully be reflected in corresponding policy indicators for infrastructure investment, are further detailed in Chapter 4 below and in Annex 1.

3. Infrastructure markets

De facto monopolies are frequent features of infrastructure markets

Infrastructure markets present, in their majority, cases of market power and 'natural monopoly'. Several sub-sectors, particularly rail, have network industry characteristics whereby operations are so interconnected that it can sometimes be more efficient to run them as a single entity (Collier, 2011). Asset specificity also means that a single operator frequently has the upper hand, especially in services segments: for instance rail tracks are necessary inputs in the production of railway transport services, as are airports for air transport services and loading docks for maritime transport services (Estache and Serebrisky, 2004). Asset specificity increases the upfront costs to be borne by initial investors (whether public or private), making it particularly possible for incumbent operators to create rent ex-post; it also greatly complicates any attempts to introduce meaningful vertical or geographic separation and competition in each sector. Monopoly can also result from spatial, geographic or demographic constraints – for instance for road and rail transport, it may only make 'economic sense' to have one mode of transport connecting two different points; and in smaller or less populated countries there may not be enough market demand to accommodate more than one provider of basic utilities such as electricity or water.

For these reasons many infrastructure markets have traditionally been monopolistic in G20 countries and LICs alike – but due to regulatory capture and a lack of commercial incentives for these monopolies (particularly when they are state-owned), the result has not always been efficiency-enhancing. Especially when state-owned operators benefit from special provisions and are not in a situation of competitive neutrality vis-à-vis private investors, the potential detrimental impacts on market access, returns, and general investment incentives for private actors are high. As Section 3.1 details, governments can tackle these challenges by giving competition authorities a role in the oversight of infrastructure markets (in particular as relates to infrastructure procurement processes, and to questions of structural separation as well as pricing). This also requires collaboration with and participation from other agencies, especially sector regulators and procurement authorities, whose roles are further addressed in Chapter 4 below. In addition, Section 3.2 illustrates how, in infrastructure markets that are dominated by state-owned

incumbents, efforts to enhance the corporate governance and efficiency of these companies can make a real difference in terms of creating an attractive space for complementary private investment.

3.1 Competitiveness in market access and operations

The economic regulation of infrastructure markets affects both predictability and level of investor rates of return

Competition authorities together with sector regulators have a key role to play to ensure that all investors operate on an equal footing. First, the extent of vertical integration and/or market dominance by incumbents in infrastructure markets, as well as the degree of structural separation which can open specific network segments to private participation, is likely to affect the value proposition for potential investors. Aside from their basic market structure, infrastructure sectors are also, more often than not, regulated in their prices and operations – largely for strategic reasons and because the services provided are basic necessities and have high positive externalities. As the benefits of basic infrastructure to society can seldom be accurately captured in the market price of the service, this calls for a political solution to pricing. This solution typically takes the form of tariff regulation supported by a production or consumption subsidy from the government, or by cross-subsidisation from users (Collier, 2011).

Across developed and developing countries, a wide range of institutional arrangements are therefore involved in regulating infrastructure markets and setting infrastructure tariffs as well as subsidies – with obvious impacts on (i) the rate of return for infrastructure investors, and (ii) competitive neutrality vis-à-vis state-owned providers of infrastructure services, which might benefit from production subsidies unavailable for private investors. The functions of infrastructure regulators, and the associated policy indicators, are discussed in detail in Chapter 4 below.

In addition to sector regulators, competition authorities can also help make more space for private operations in infrastructure markets. As is the case for the sector regulators, the independence, scope of action and accountability of competition authorities come to the fore as important features – for instance their ability to advocate for structural separation where suitable in infrastructure sectors, or to investigate anti-competitive behaviour and abuse of market dominance, notably by state-owned firms. Competition authorities can also play an important oversight role in public procurement as well as privatisation processes (for instance by flagging risks of bid rigging, or ensuring that private bidders are not offered market exclusivity clauses, which could de facto replace a public monopoly by a private one). These dimensions are captured by the OECD *Competition Law and Policy indicators* (CLP) which cover 49 OECD and non-OECD (mostly emerging) economies.[9] LICs are likely to have a much wider variation in the competencies and scope of action of national competition authorities (where these exist) than OECD countries do – rendering the granularity of such indicators particularly relevant for LIC policymakers.

3.2 Governance and role of State-Owned Enterprises in infrastructure markets

More efficient and better governed SOEs make for a better business case in infrastructure markets

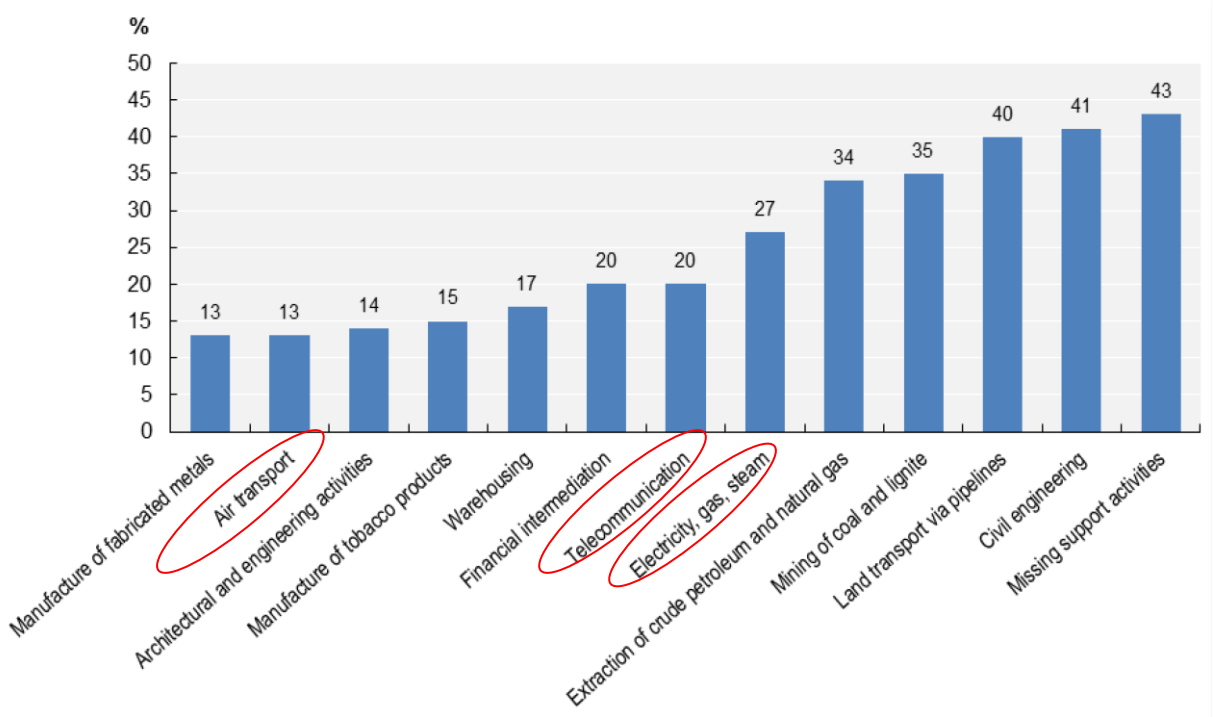
The economic weight of SOEs is non-negligible in infrastructure sectors worldwide (see Figure 3.2), and LICs are no exception. Traditional economic literature has often viewed SOEs in a 'state-market' dichotomy, whereby public incumbents crowd out potential private investors, and private investment is predominantly introduced through outright divestiture or privatisation.[10] Yet if well run, SOEs can be effective complements rather than substitutes to private investment, by helping cater to public service requirements that private actors cannot meet alone. Indeed, returning to the 2013 MIGA-EIU Political Risk Survey, only 1% of surveyed investors cited partaking in a "contract for which government owns a large profit share (e.g., contract with an SOE)" as an important risk factor for breach of contract events. Beyond

looking at privatisation or structural separation alone, a more nuanced investigation of the role and efficiency of SOEs in infrastructure markets (notably regarding their corporate governance and effectiveness) can prove more useful to policymakers in LICs.

Strong corporate governance standards and regulations for SOEs, can help enhance their efficiency and ensure that they operate on an equal footing with the private sector (OECD, 2005).[11] Such information can also enable policymakers to assess to what extent existing SOEs are enhancing, or reducing, rates of return for potential investors in the infrastructure sectors where they operate. The scope for policy reform on this front appears to be wide – the OECD indicators of Product Market Regulation show that improvements in corporate governance of SOEs have been very slight between 2008 and 2013 across OECD countries, despite important cross-country variability (see Figure 3.2). Similarly a 2005 IMF assessment of SOEs in six pilot countries (Brazil, Colombia, Ethiopia, Ghana, Jordan, and Peru) found that only three out of 115 assessed firms met the conditions for being commercially run (IMF, 2005).

Inefficiently-run SOEs can adversely affect the quality of network management and subsequently deter private investment. Inefficiencies such as overemployment, poor bill collection, system losses, and irregular maintenance practices by SOEs in infrastructure markets cost about USD 12 billion annually in Africa – detracting public resources from amelioration of infrastructure networks (Trebilcock et al, 2011). Maintenance is in particular a very present challenge, which benefits from little political visibility in many LICs (see Box 4.2). But on the other hand, the potential efficiency *gains* from SOE operations – including as partners of private foreign or domestic investors – should not be discounted. OECD research into overseas M&A by SOEs indeed illustrates that, on average, foreign-investing SOEs are not less efficient than equivalent private sector players. On the contrary, across telecommunications, energy and air transport sectors between 2000 and 2010, state-invested companies maintained higher profitability and operating margins than private companies – with the larger differences in the telecommunications sector (OECD, 2014f). While this international picture may not hold for exclusively domestic SOEs, especially when they are based in developing countries, it points to the need for better tracking and monitoring reform on this front.

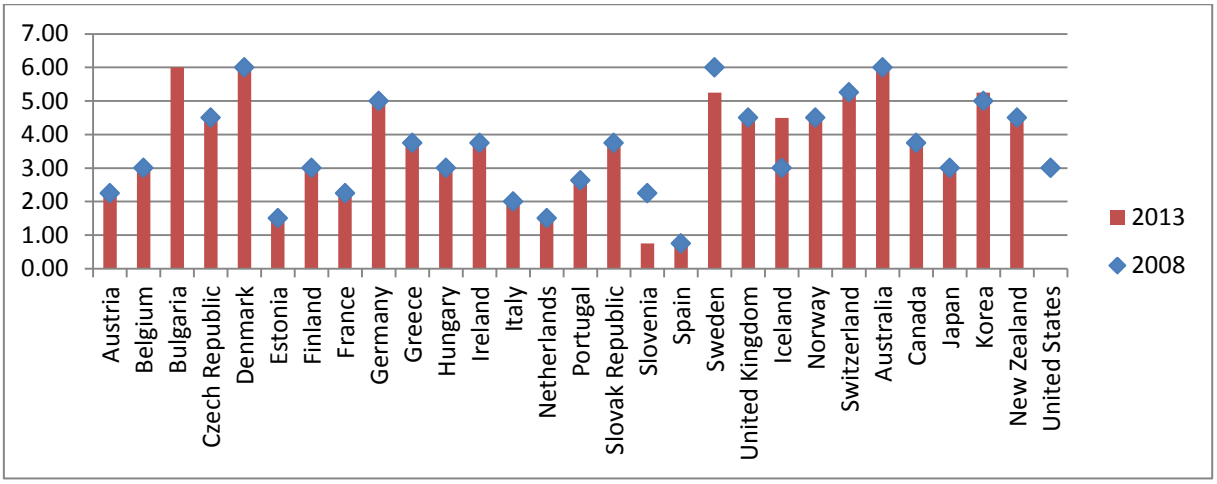
Figure 3.1. Global share of SOEs among the world's largest enterprises by sector



Note: Only sectors with shares above 10% are shown.
Source: OECD (2013). "State-Owned Enterprises: Trade Effects and Policy Implications", OECD Trade Policy Paper no. 147.

Possible policy settings which could help make infrastructure markets more efficient, better maintained, and more attractive to private investors in this regard, could include: financial disclosure requirements for SOEs; the existence of national codes of corporate governance applicable to SOEs; SOE inclusion in antitrust enforcement and bankruptcy rules; and the fiscal weight of subsidies to infrastructure SOEs. However, preliminary stock-taking suggests that few indicators are systematically collected to capture the fiscal weight, corporate governance standards and enforcement, or effectiveness of infrastructure SOEs – whether in the G20 or in LICs. For instance the coverage of SOEs in fiscal statistics reported by countries and used for assessing fiscal discipline varies greatly (WBG, 2014). In LICs, where oftentimes frameworks even for corporate governance of private companies are incomplete and sometimes less stringent, enhancing and tracking corporate governance of the state-owned sector can be a particularly tall order. The corporate governance of infrastructure SOEs, together with government capacity for managing private investment in infrastructure, are some of the central indicator gaps flagged by the current exercise.

Figure 3.2. Corporate governance of SOEs, 2008 & 2013, OECD countries



Source: data from OECD PMR indicators, 2015.

Box 3.1 – Donor support on infrastructure markets

Donors support institutional capacity building within the infrastructure sectors of water, transport, energy, and ICTs to enhance market access and competition, which could directly boost incentives for private investment. These programmes aim at ensuring a transparent national or sub-national regulatory framework and better inter-ministerial co-ordination for enhanced competition. Donors also assist in setting appropriate prices for utility and other infrastructure services, as well as reforming or supervising State-Owned Enterprises in order to ensure competitive market structures.

An example in this area is the ADB project in Myanmar, which supports the amendment of legal and regulatory framework for unbundling the electricity sector, introducing an electricity regulator, and creating the legal framework for small independent power producers. Another example is support by the IADB in Nicaragua that aims at financial stability and regional integration of the electricity sector and boosting renewable production by the private sector.

4. Public governance of infrastructure investment

Governance of infrastructure comprises the processes, tools and norms of interaction, decision-making and monitoring used by governmental organisations and their stakeholder counterparts with respect to making infrastructure services available to the public and the public sector. It thus relates to the interaction between government institutions internally, as well as their interaction with the private sector, users and citizens. It covers the entire life cycle of the asset, but the most resource intensive governance activities will typically be the planning and decision-making phase for most assets. It cuts across sectors and in essence concerns the public sector side of infrastructure.

The governmental role discussed below thus covers that of policy makers, regulators, procurers and providers of public infrastructure investment – all of which impact directly on the actions and willingness to invest of market actors. The establishment of an enabling environment for infrastructure investment relies in great part on incorporating the necessary elements of good public governance in the decision-making process. Infrastructure projects with deficient governance often result in cost overruns and affordability issues, delays, underperformance, underutilisation, accelerated deterioration due to poor maintenance, and, occasionally, in expensive "white elephants" and bridges-to-nowhere. Poor governance

is a key reason why infrastructure projects fail to meet their timeframe, budget and service delivery objectives.

The design of public policies in infrastructure clearly affects the incentives of external players, including foreign and domestic investors. Co-ordination among actors and institutions with particular interests interacting in each stage of the infrastructure policymaking process can help solve information, incentives and enforcement problems, while reducing project transaction costs. Empirical evidence highlights the positive outcomes of the implementation of good policies on private investment – for instance in African telecommunications markets where regulatory changes and liberalisation have improved overall performance, and attracted more private participation (Djiofack-Zebaze and Keck, 2006). In developing and emerging economies, the phase of project prioritisation and planning is the most challenging in the policy-making process. Low technical capabilities for project design and the lack of a framework for policy implementation stand out as the most adverse factors behind the effectiveness of public policies (OECD, 2013c).

But infrastructure governance is a complex question of trade-offs. Oftentimes a balance needs to be struck between competing legitimate interests, for example: moving projects forward needs to be balanced against a thorough consultation process; providing suitable incentives for private sector participation and risk transfer needs to be balanced against the price for such participation; and regulatory stability needs to be balanced against the need to adjust legal frameworks in light of developments throughout the life of the infrastructure contract. In essence, these trade-offs require a capacitated public sector and a frank dialogue with all concerned stakeholders, including end-users.

As with all areas of public governance, the governance of infrastructure therefore entails its own distinct set of challenges and requires a considered, systematic approach. A comprehensive analysis of each stage of the policy-making process can result in increased effectiveness in infrastructure investment. An OECD Development Centre survey directed to policymakers in developing countries in 2010-11 (Box 4.1) identified four key phases of public policy design in infrastructure (which are aligned with the pillars of the OECD's relevant investment policy tools) (OECD, 2007): (i) planning and prioritisation; (ii) budgeting; (iii) execution; and (iv) monitoring and evaluation. Although all four phases overlap to varying degrees in practice, such a framework helps understand better the prerequisites, elements and consequences of policy making. In each phase governments have to consider assessments, accountability and oversight mechanisms to properly evaluate the progress of the project (OECD, 2013c).

These four phases, and the need to address them in a systematic manner, are reflected in the many relevant public governance recommendations that have been endorsed by OECD countries (see Box 4.2 below). Specific governance challenges arise at each phase, as the experience of OECD member countries has demonstrated. A clear set of governance dimensions (or pre-conditions) needs to be in place to address these challenges, regardless of the choice of delivery modality for public infrastructure. These dimensions, detailed in the rest of this chapter, include:

1. A long term national strategic vision for the use of infrastructure, which takes into account the multi-dimensionality of the challenges.

2. Regulatory frameworks, principles and processes which encourage the sustainable and affordable development, management, maintenance and renewal of infrastructure.

3. A user-centric process for managing infrastructure projects over their life-cycle delivery. This should rest on broad based consultations, structured engagement and access to information and have a primary focus on users' needs.

4. Frank, regular and performance oriented co-ordination across levels of government and jurisdictions. Co-ordination within levels of government should balance whole-of-government perspectives and sector-specific views.

5. Appropriate skills and procedures to ensure rigorous projects assurance, affordability, value for money and transparency.

6. Project assessments based on data and a balanced value for money procedures.

7. Monitoring systems to a focus on the performance of the asset throughout its life.

8. Mapping of corruption entry points at each stage of the public infrastructure project, together with enhanced integrity and anti-corruption mechanisms.

9. Integration of political, sectorial, and strategic considerations within the choice of the appropriate infrastructure delivery modality.

These dimensions do not follow a blue-print; they can be available in a multiplicity of organisational and institutional models, to a greater or lesser extent. A strong capacity with regards to one pre-condition can to some extent compensate for a weaker capacity in another. Nevertheless, experience shows that they are mutually reinforcing and must be pursued as a package. The considerations pertaining to these different dimensions (for investors as well as for governments, drawing on an overview of governance challenges faced by OECD countries) are detailed in the sub-sections below – together with potential ways to address them and corresponding policy indicators (see Annex 1) which could usefully be tailored and expanded to LIC and Least Developed Country (LDC) contexts.[12]

Box 4.1 – OECD Development Centre survey on the infrastructure policy-making process

The OECD Development Centre conducted a survey that attempts to identify the main bottlenecks hindering effective infrastructure service delivery throughout the policy-making process. Derived from the OECD Survey on Water Governance (OECD, 2011a), it is directed at policy makers in the infrastructure sectors at national level: at the ministries of finance, planning or infrastructure or at the national development and planning agencies for general infrastructure questions, and at the ministry of transport for transport-specific questions. Respondents first completed the survey online and then complemented their answers by bilateral discussions. The survey was carried out in 2011-12 in Latin America (Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Mexico, Paraguay, Peru, and Uruguay), Africa (Benin, Botswana, Burundi, Cameroon, Cape Verde, Chad, Djibouti, Gambia, Kenya, Madagascar, Mauritius, Niger, São Tomé and Príncipe, the Republic of the Sudan and Tunisia), Asian and Pacific Least Developed Countries (Afghanistan, Bhutan, Samoa, Timor-Leste and Vanuatu) and in Southeast Asia (Malaysia, the Philippines, Thailand and Vietnam). Consequently, this survey covers 14 LDCs (Afghanistan, Benin, Bhutan, Burundi, Chad, Djibouti, Gambia, Madagascar, Niger, Samoa, São Tomé and Príncipe, Sudan, Timor-Leste and Vanuatu). In the future the coverage of this pilot initiative could be widened to most of the emerging and developing markets. This would allow a representative global database on public policies related to infrastructure development.

This survey can be considered as a key input into the analysis of the effectiveness of public policies in infrastructure that complements existing quantitative surveys. Nieto Parra et al. (2013) discusses in detail the results obtained in Latin American countries. For an application of this approach to the Least Developed Countries (LDCs) and a discussion of their key capacity constraints in the infrastructure policy making process, see "Infrastructure for Development in LDCs", Chapter 4 in *LDC IV Monitor (2014).*

4.1 Ensuring institutional capacity, co-ordination and consultation

Weak capacity for designing a strategic vision for infrastructure undermines the development of a sustainable development plan

A necessary condition for a successful infrastructure program is appropriate strategic planning. This requires identifying what investment should be undertaken, determining the essential components, needs and trade-offs, and how they should be prioritised. Conversely, weak or insufficient planning often impedes successful implementation and operation later in the project cycle. Looking beyond the project-specific level, strategic vision is also needed in order to address "bigger picture" elements of infrastructure investment that are key to sustained competitiveness. These include the inter-modality of transport sector investments for instance (crucial to connectivity), as well as adequate priority placed on infrastructure maintenance (see Box 4.2).

But designing a clear and coherent strategic vision can be complicated by the fact that infrastructure investment has many stakeholders; infrastructure development serves multiple objectives, with multiple policy goals; and good infrastructure requires identification of necessary complementarities across sub-sectors. A lack of capacity for designing a strategic vision is ultimately linked to weak portfolio of infrastructure skills in the public sector at both national and sub-national level. At the sub-national level, government capacities also vary greatly across metropolitan areas and rural jurisdictions (OECD, 2013a, OECD 2014d). Among others, the *Infrascope* index (see above and Annex 1) attempts to capture such considerations by weighing its calculations of PPP readiness with a 'sub-national adjustment factor'.

Box 4.2 – The infrastructure maintenance challenge

An enabling environment for investment requires adequate attention to maintenance of infrastructure assets, which are crucial for sustained competitiveness. Poorly maintained infrastructure can also act as a brake on private investment in the network, and can jeopardise PPP or privatisation projects due to investor uncertainty and asymmetric information as to the state of the pre-existing infrastructure. Yet infrastructure maintenance is often rather low on the radar screen of governments, donors and investors. Indeed, much stakeholders prefer to invest in greenfield projects that will be seen as a tangible achievement, versus maintenance and renovation projects that are less visible. Funding for infrastructure maintenance may in many cases be postponed on the expectation that a lack of maintenance will not result in imminent asset failure.

It is also difficult to measure the share of maintenance in infrastructure. When it comes to the delineation of transport infrastructure spending for instance, the distinction between fixed capital formation and intermediate consumption is very relevant. While the production and purchase of a new structure clearly constitutes investment, the delineation of expenses made for maintenance is less clear: ordinary maintenance and repairs should be recorded as "intermediate consumption" in the government budget, whereas major renovations, reconstructions and enlargements are to be recorded as investments. Systematic and detailed recording of infrastructure maintenance spending is thus lacking in many countries – even within some OECD countries, and especially outside of the roads sector (ITF, 2013). This complexity in classification means that infrastructure maintenance spending is often less intently scrutinised by the general public, despite its tremendous importance. As emphasized by the International Transport Forum, in LICs and G20 countries alike national statistical offices should provide, at minimum, data on investment and maintenance separately by asset type (OECD/ITF, 2013).

Aside from statistics, possible means of facilitating infrastructure maintenance include building capacity for maintenance at the community level, and for better project design and governance of revenues by local governments. Preventive legislation can also help – such as, in the roads sector, axle-load controls, standards for good drainage, etc. to limit road degradation. At the project level, private investors can be encouraged to better address environmental sustainability and to accept to share responsibility for road maintenance. Agencies are also increasingly moving towards contracting out performance-based maintenance contracts. Project maintenance funds are another option.

Beyond project-specific approaches, and to continue with the example of the roads sub-sector, the creation of autonomous road funds to oversee tolling and cover maintenance costs has also been a popular response to

the maintenance issue. The idea is to create an independent source of funding for road maintenance based on road-user charges. The funds are fenced off from the general government budget and administered by an autonomous board. The great majority of African countries surveyed by the 2008 Africa Infrastructure Country Diagnostic (AICD) for instance had already established second-generation road funds for this purpose – but with varying levels of success. Although toll-revenue can be redistributed to maintain less lucrative (secondary or feeder) roads, in practice 60% of road fund revenues are typically allocated to the main interurban road network, which leaves maintenance of rural networks particularly lacking (WBG & SSATP, 2008). The authors suggest several indicators for measuring the performance of such road funds, including: user representation on board; direct transfer of funds; clear legal basis for the board; separation of functions; revenue allocation rules; and road user charges. These could all be valid elements to take into account when assessing the enabling environment for infrastructure investment (including maintenance). Similar indicators could be developed for other infrastructure sectors as well, and linked to the relevant sector regulator (*see Section 4.3 below and Annex*).

Source: OECD/ International Transport Forum (2013 & 2015); World Bank Group and SSATP (2008), "Africa Infrastructure Country Diagnostic: Roads in Sub-Saharan Africa".

The co-ordination challenge - a multiplicity of actors across levels of government may derail good projects

A large part of public investment is spent on infrastructure. Public investment is generally a shared responsibility across levels of government, and – whether through shared policy competencies or joint funding arrangements – different levels of government are typically involved. This makes its governance particularly complex[13]. Ensuring adequate co-ordination across multiple actors across and within levels of government and effective consultation with infrastructure end-users are critical pre-conditions for effective infrastructure investment. While co-ordination on all aspects of public investment is not necessarily feasible, at a minimum, there is an aim to not work at cross-purposes across and within levels of government.

Co-ordination challenges are exacerbated in infrastructure sectors, such as water or transport, which face a strong fragmentation of responsibilities across actors both horizontally (across ministries and agencies) and vertically (across levels of government). Several line ministries and other governmental agencies are for instance involved in policy and the management of water infrastructure and services, while water management also involves all tiers of government, from supra- to sub-national levels. With so many participants, a clear definition of roles and responsibilities, as well as the establishment of coordination mechanisms, are crucial to effectively and efficiently manage infrastructure and services and to bridge information, policy or fiscal gaps that may occur (OECD, 2011a).

Where strategic planning is concerned, jurisdictions moreover need to be co-ordinated at the relevant scale, to avoid over or under-provision of public goods. Investing at the relevant "functional" socio-economic scale requires coordination across jurisdictions to increase efficiency through economies of scale and affordability of the asset for users and government (OECD 2014d). This is particularly true for metropolitan areas[14]. This can be complex to achieve for political reasons, and there are numerous examples of bad infrastructure decisions linked to inadequate perimeters of investment. Alongside, effective public investment calls for critical governance capacities at different levels to design and implement public investment projects.

All countries are confronted by these challenges, whatever the institutional context (in federal countries, or highly centralised countries) given the mutual dependency across levels of government. The OECD *Recommendation on Effective Public Investment Across Levels of Government*, adopted in 2014, target these challenges in vertical and horizontal co-ordination, across sectors, and bottlenecks in sub-national capacities. Mechanisms used for vertical co-ordination between central and sub-national levels of government in OECD countries range from informal policy exchange platforms, to co-financing arrangements for shared responsibilities or conditionality requirements for receiving central funds (OECD, 2013a). Such governance efforts hold important potential for improving efficiency and effectiveness, and

hence investment outcomes and the attractiveness for private investors (OECD, 2013a). The existence of such arrangements could be good candidates for indicators that would help measure and monitor the effectiveness and efficiency of public investment, including in infrastructure.

Infrastructure impacts communities - without well managed consultation, good projects may falter

Involving stakeholders such as users, civil society organisations and the private sector, can improve the quality of planning efforts and ultimately the effectiveness of the asset. Stakeholder involvement can establish a shared vision for development, improve the assessment of investment needs, reveal the importance of cross-border linkages, strengthen trust in government and cultivate support for specific investment projects. It can also lead to demand-driven improvements in public investment management capacity. In practical terms, this means that both central and sub-national governments should have the capacity to engage stakeholders in policy development and needs assessment in the early stages of the investment cycle, and in feedback and evaluation in later stages (OECD, 2014). As illustrated in OECD (2015c) in the case of water governance, effective stakeholder engagement involves identifying stakeholders, understanding their "stake", designing outreach opportunities and managing grievances. .

Among the stakeholders impacted by public service delivery, women are on the front line. There is growing consensus in governments world-wide that empowering both men and women to access public services and public infrastructure would result in more inclusive policies and service delivery and, consequently, better and sustainable economic outcomes. Research shows that there is differentiated access to use of and control over infrastructure facilities and services by men and women, often resulting from persistent inequalities in access to resources, intra-household power relations, and cultural restrictions. Yet infrastructure projects are often assumed to be gender-neutral, where women and men automatically equally benefit from infrastructure. These projects often do not acknowledgement of the full range of social and economic impacts, whether positive or negative, on both men and women. Lack of evidence-based gender impact assessments in infrastructure policies may impede the success of outcomes of the project and hamper inclusiveness of public service delivery. As such integrating the gender perspective into infrastructure decisions is becoming a good governance practice across OECD countries. Well-designed infrastructure policies which take into account the differentiated access to public services by women and men can foster gender equality alongside broader sustainable development objectives such as inclusive growth.

4.2 Ensuring value for money, affordability and sound public financial management

The factors required to support public and private investment in infrastructure – including institutional capacity, public procedures, institutions and tools – call for the development of a coherent and integrated national framework for the management and planning of capital expenditures (OECD, 2015c). An increasing amount of evidence points to some overall good practice for the public governance of PPPs (OECD, 2012a). Three specific recommendations apply to investment, as detailed below: establishing a clear, predictable and legitimate institutional framework executed by competent authorities; grounding the selection of projects on (absolute and relative) Value for Money; and using the budgetary process transparently to ensure affordability and minimising fiscal risks. Several groups of indicators (such as the EIU *Infrascope*, the WBG *Benchmarking Public Procurement* and the *Benchmarking PPP Procurement* Indicators or the OECD Public Procurement Performance Indicators which are currently being piloted by several OECD countries) have begun to capture these dimensions in particular, as reflected in Annex 1.

Adverse incentives provided by rules and procedures may generate suboptimal investment choices

It is a well-known fact that, at times, projects may be prioritised or cancelled for the wrong reasons[15]. One way to overcome such problems is to set up procedures that assess cost efficiency and value for

money such as cost-benefits analyses, ex-post evaluations and audits that are transparently communicated. It would further be useful to set up institutionalised procedures in order to systematically integrate and manage stakeholders' engagement. Such procedures may also help transmit actual needs and signal possibly inappropriate investment designs to decision makers.

Following a social feasibility analysis, policymakers can use value for money evaluations to assess whether or not a concession model is preferable to direct public sector provision. However it is crucial to ensure that authorities do not heavily discount future payments of concessions or favour concessions over public procurement with the main objective of meeting short and medium-term fiscal targets. A change in fiscal accounting can improve concession selection, avoiding reckless investments and the transfer of fiscal commitments to the future.

The technical set-up of the budgeting system may in itself also impact infrastructure. In OECD countries, public expenditure for infrastructure allocated via the annual budget process is transparently accounted for. However, many countries operate on a cash accounting basis with only a limited use of a public sector balance sheet – so the state of the public sector assets are not reported. The consequences have often been that public infrastructure assets are badly maintained, shortening their effective life span.

Accounting rules have meant that some countries are tempted to choose particular procurement modalities as a way of off-budget borrowing. The use of PPPs, SOEs or other vehicles has at times been driven by a wish to finance the asset in a non-transparent manner, off the government's balance sheet, rather than being a choice grounded in a quest for more cost efficiency. Countries have responded to this challenge in a number of ways: using the private sector to a greater extent; changing budgeting and accounting systems to accrual accounting; and putting in place a systematic upgrade of infrastructure management. Such measures could usefully be reflected in indicators for guiding better budgetary choices in infrastructure provision.

Allocating project risks to the party best able to manage them may be difficult

Risk associated with the asset throughout its life should be carried by the party best able to manage them. This may be technically difficult to do, but the development of basic approaches and model contracts are a good foundation for such work. Countries should not attempt to use the private sector to mitigate problems that essentially stem from flawed governance. For instance, the private sector (whether foreign or domestic) will usually be less suited to overcome land and right-of-way issues than the public side. While this risk can be off-loaded to the private side, it will not be cost efficient.

The lack of data and evidence on service delivery performance makes it difficult to use choose the form of contract delivery in an informed manner

Countries should carefully assess which investment modality is likely to yield the most value for money, but it can be a challenging task. Good practice requires the use of a comprehensive cost benefit techniques and a robust assurance process. Yet the fundamental element that enhances the solidity of any kind of value for money test is data. Unfortunately, there is a lack of systematic data-collection regarding the cost and performance of infrastructure assets across various modalities. While many countries do collect data, most of the data that would be required to compare the overall costs of projects financed through various delivery mechanisms is not systematically collected, processed or made available.

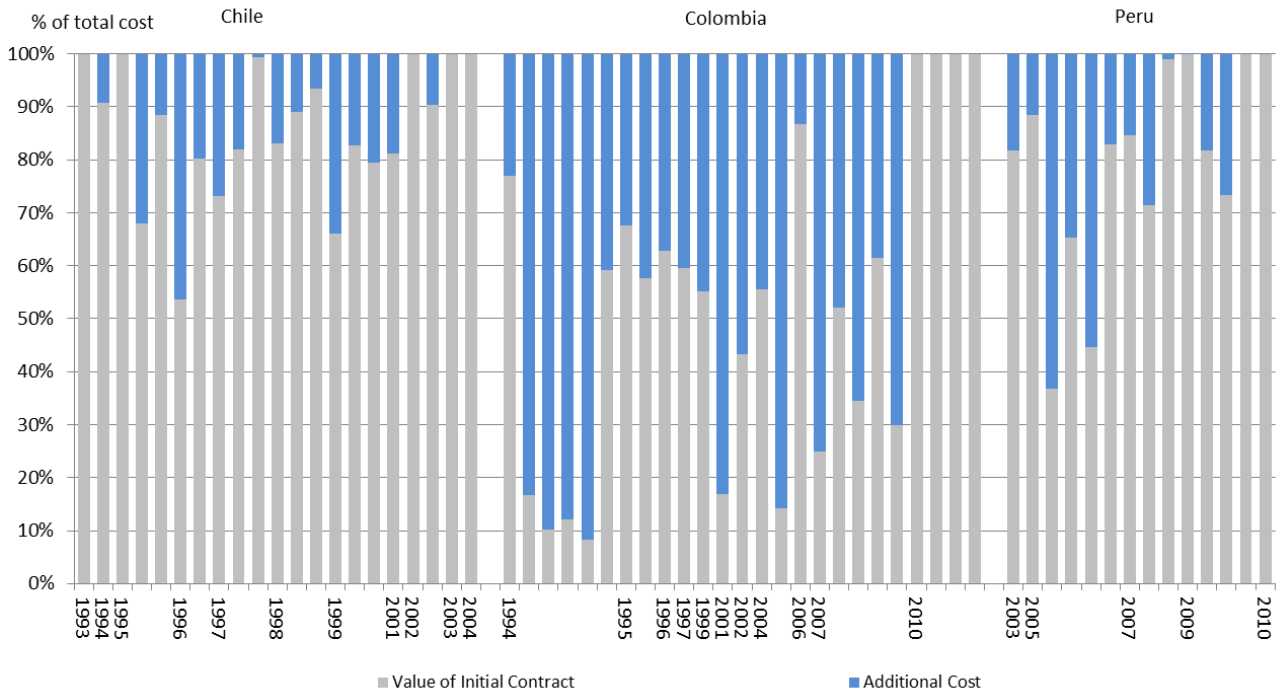
Statistical data is also crucial to assess the institutional capacity, in particular on the quantity and quality of infrastructure. Evidence suggests that countries' statistical capacity depends on their institutional capacity and vice-versa. In this sense, there is a need to obtain the necessary means allowing more accurate statistical information. In a first step, this could be achieved through information provided by international,

intergovernmental or regional organisations. Complementary to this, efforts should be directed to institutionalise and strengthen the national statistics agencies. Also, developing information systems reveals decisive in the monitoring and evaluation stage and allows the co-ordination of infrastructure public policies at national and regional level.

The public sector skills challenge

Across the three dimensions mentioned above (choice of investment modality, risk allocation and data), a stronger skill set is also needed within the public sector, especially in LICs. This can help countries avoid costly inefficiencies in PPPs and concessions. Currently, few infrastructure projects procured internationally are actually completed within the budget and time-frame originally estimated by the project's sponsor. These systemic failures often arise from the inability to manage risks adequately and to anticipate them ex-ante during contract negotiation (CABRI, 2010). A direct consequence is a high frequency of contract renegotiations (Guasch, 2007 and 2008). For instance, 40% of existent road concession contracts have been renegotiated in Latin America, according to policy makers (OECD/ECLAC, 2011). 50 out of the 60 road concessions in Chile, Colombia and Peru were renegotiated up to 2010 (Bitran et al., 2013). The additional fiscal costs amount to 50% of the initial value of the contracts (Figure 4.1). While much of this is context-specific (in part triggered by the financial crises and spectacular currency devaluations faced by these countries in the past decades), policymakers point out that both regulatory factors – e.g. price caps and tendering processes – and political aspects – quality of bureaucracy, political cycles, little independence of regulators – have affected effectiveness of these contracts.

Figure 4.1. Additional cost versus initial value of the contract in Latin America (selected countries)



Note: The x-axis indicates the year in which the concession contract was initially signed. Years are only mentioned for the first concession signed.

Source: Bitran, E., S. Nieto-Parra and J. S. Robledo (2013). StatLink http://dx.doi.org/10.1787/8889328141244.4

4.3 Creating a regulatory framework that is fair, transparent and sustainable

Regulatory frameworks play a key role to promote economic prosperity, enhance welfare and pursue the public interest. Conversely, regulatory failures may have dramatic and lasting impacts. The design, content and implementation of regulation can either facilitate or impede beneficial investment. It can divert the energy and talent of entrepreneurs and investors away from strategic tasks, or facilitate competition and market forces in support of innovation, economic efficiency, equity and green growth. Building on a wide range of experiences, OECD countries have agreed on a set of principles – the *Recommendation of the Council on Regulatory Policy and Governance* – which support open, evidence-and risk-based regulatory policymaking that is likely to ensure the sustainable and affordable management of infrastructure in the public interest (OECD, 2012b). These principles may offer a good basis for a dialogue with developing countries to support the design of fair, transparent and sustainable regulatory frameworks.

Uncertainty with regards to revenue flows and sources in regulated sectors can result in a lack of confidence in the project's affordability

As mentioned earlier, financial sustainability over the long run can be an important challenge to a number of regulated infrastructure sectors that to a greater or lesser extent rely on user charges - in particular the sectors of water, energy and to some extent transport. The water sector is emblematic in that respect. OECD work highlights the critical importance of the three ultimate sources of funding for the sector (3Ts: Taxes, Tariffs and Transfers). In most countries, low cost recovery through user fees is coupled with strong reliance on budget subsidies (OECD 2009 and 2011b). However, subsidies are renewed on an annual basis and their reliability is therefore not ensured. In the current context of strong budget constraints, subsidies tend to be reduced and the long term financial sustainability of the systems and the services is therefore not ensured all other things being equal.

As introduced in Chapter 3 above, tariff regulation is a critical determinant of the revenue flow in infrastructure sectors. Evidence shows that tariff setting and updating is a very difficult task in both OECD and non-OECD countries and tends to be a highly political endeavour, in particular in the water sector[16]. To remedy the situation and situate tariff setting at arm's length from political interests, a number of countries have chosen to make tariff regulation a key function of independent regulators and to issue tariff methodology (OECD, 2015d). A number of critical issues remain unresolved, however. These include: how to provide the relevant incentives for investment; and how to price capital and account for depreciation to ensure that any tariff policy achieves the objective of long term sustainability of the sector at the least costs for the customers (while addressing the monopolistic behaviour of the operators).

Alongside, there are important challenges at both national and sub-national level to catalyse sufficient regulatory capacity to oversee pricing, as well as the performance of infrastructure service delivery. As Box 4.2 above notes with the example of the transport sub-sector, regulatory capacity can also be needed to oversee adequate maintenance of infrastructure networks. Regulatory delivery (the downstream of the regulatory policy cycle) is in particular perceived as the weak link. Infrastructure investment requires a multiplicity of skills to assess, procure, manage and regulate that may not be sufficiently available in the relevant public sector organisation. Apart from certain sectors (such as transport) that have an on-going infrastructure programme, many projects are unique for the concerned authority and/or unique for the country as a whole (e.g. mega projects like the Olympics, very large fixed links, airports). They may also be new in the way they are financed (e.g. private finance) or be subject to technological change that requires new skills. Annex 1 illustrates how OECD indicators on the governance of regulators can help assess some of these regulatory challenges, including through sector-specific surveys (such as the 2013-2014 Water Regulator Survey which covers 34 regulators from 24 OECD and non-OECD countries).

Unstable or burdensome regulatory frameworks can prevent long-term decisions and undermine sound decision-making from both public and private actors

The instability of institutions in charge of infrastructure development and management, frequent change in the regulatory framework and the presence of multiple layers of regulatory requirements for infrastructure projects may increase the sense of risk, unpredictability and arbitrary decisions for investors and project developers. In addition to rule of law and established conflict resolution mechanisms, countries need to endeavour to maintain a stable and transparent regulatory regime with a clear allocation of roles between regulatory institutions responsible for infrastructure. This involves that the regulatory frameworks framing the development and management of infrastructure are submitted to regulatory disciplines such as appropriate consultation and review mechanisms.

A one-stop shop for infrastructure project development procedures may help investors navigate better in the bureaucracy of a specific jurisdiction and provide better certainty. In a number of countries, independent regulatory bodies have been established to catalyse regulatory expertise in the public sector that oversees economic regulation of infrastructure service delivery. Their success at restoring trust in regulatory decisions and ensuring the credibility of the regulatory frameworks will critically depend on their governance, including role clarity, adequate processes and structure to manage human and financial resources, independence, accountability, performance evaluation and funding (as defined in the OECD *Best Practice Principles on the Governance of Regulators*, and as has been measured for 33 OECD members and 12 non-members in Annex).

Infrastructure investment is vulnerable to corruption, thus the need for enhanced integrity and transparency

Corruption allegations often surround government-led mega projects on infrastructure. The extent of public officials' discretion on the investment decision, the size of the projects and the multiplicity of stages and stakeholders involved make them more prone to corruption. The OECD Foreign Bribery Report identified that two-third of foreign bribery cases occurred in four sectors highly related to infrastructure: extractive (19%), construction (15%), transport and storage (15%) and information and communication (10%). It has been estimated that 10-30% of the investment in a publicly funded construction project may be lost through mismanagement and corruption (COST, 2011). Corruption in public investment not only results in losses to state revenue but may also lead to sub-standard or dangerous infrastructure. At their 2014 Summit, the B20 accordingly called on G20 governments to apply best practice procurement processes in all large and/or publicly significant infrastructure projects. The B20 Anti-Corruption Task Force has also established a work-stream on Government Procurement to act further on this front.

Corruption in the different phases of an infrastructure project can involve a wide range of actors, including elected and non-elected public officials, lobbyists, civil society organisations, trade unions, regulators, contractors, engineers and suppliers. In addition, corruption can take place in a wide variety of ways across the different phases, such as undue influence or capture of the investment by specific interests, or bribery in the procurement process. In these processes, recourse is often made to fraudulent billing, collusion, bid-rigging, agreement to share the market or future contracts, price-gouging, use of inferior quality goods or setting higher prices of the services. Considering their complexity and scale, infrastructure projects are often if not always divided into different lots. This division could open the door for abuse of exceptions to competitive tendering which ultimately undermine a transparent and competitive process.

A sound public procurement process, in addition to close monitoring during the operational phase, is essential to ensure not only that practices for awarding contracts are competitive, but also that the quality of goods and services is adequate. Adequate public procurement governance should thus preside over an infrastructure project if this acquisition method is selected. The *Recommendation of the Council on Public*

Procurement, the recently adopted *G20 Principles on Integrity in Public Procurement* (co-drafted by the OECD together with Italy and Brazil) and the *OECD Principles for Public Governance of PPPs* all recognise the importance of ensuring integrity and offering market opportunities to private economic operators of all sizes, so as to deliver effective value for money and to serve citizen's needs while pursuing government's infrastructure development objectives.

If the public investment is proven to be carried out with transparency, integrity and proper management of public funds, it can become a flagship case for the government to showcase good governance, particularly in cases of low trust and would reinforce government efforts to curb corruption. The OECD *Checklist to Curb Corruption in Public Investment* (forthcoming) assists governments to mitigate corruption risks in public investment by identifying corruption entry points in each stage of the investment cycle and provides hands-on guidance on how to prevent corruption. These include: mechanisms to prevent capture of the investment by special interests, averting bribery and use of confidential information, safeguarding the reporting of corruption, among others.

4.4 Adequate design of the policy-making process

Particularly in the infrastructure sector, bottlenecks in the policy-making process affect the effectiveness of the investment perpetuating the gaps on both, quantity and quality. A policy-making framework is needed to promote such investment in ways that are conducive to increasing inclusive growth through efficiency-enhancing externalities.

A comprehensive analysis of each stage of the Policy-Making Process can result in increased effectiveness on the financing of infrastructure.

Public policies emerge from a complex policy-making process which involves a multiplicity of actors and translates the political priorities into programs and courses of action to deliver the desired outcomes. Based on a survey directed to policy makers in developing countries (Box 4.3), four key phases are identified to analyse the cycle of public policy design in infrastructure (which are aligned with the pillars of the OECD's relevant investment policy tools) (OECD, 2007): (i) planning and prioritisation; (ii) budgeting; (iii) execution; and (iv) monitoring and evaluation. Although all four phases overlap to varying degrees in the real world, such a framework helps understand better the prerequisites, elements and consequences of policy making. In each phase governments have to consider assessments, accountability and oversight mechanisms to properly evaluate the progress of the project (OECD, 2013c).

Box 4.3 – OECD Development Centre survey on the infrastructure policy-making process

The OECD Development Centre conducted a survey that attempts to identify the main bottlenecks hindering effective infrastructure service delivery throughout the policy-making process. Derived from the OECD Survey on Water Governance (OECD, 2011a), it is directed at policy makers in the infrastructure sectors at national level: at the ministries of finance, planning or infrastructure or at the national development and planning agencies for general infrastructure questions, and at the ministry of transport for transport-specific questions. Respondents first completed the survey online and then complemented their answers by bilateral discussions. The survey was carried out in 2011-12 in Latin America (Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Mexico, Paraguay, Peru, and Uruguay), Africa (Benin, Botswana, Burundi, Cameroon, Cape Verde, Chad, Djibouti, Gambia, Kenya, Madagascar, Mauritius, Niger, São Tomé and Príncipe, the Republic of the Sudan and Tunisia), Asian and Pacific Least Developed Countries (Afghanistan, Bhutan, Samoa, Timor-Leste and Vanuatu) and in Southeast Asia (Malaysia, the Philippines, Thailand and Vietnam). Consequently, this survey covers 14 LDCs (Afghanistan, Benin, Bhutan, Burundi, Chad, Djibouti, Gambia, Madagascar, Niger, Samoa, São Tomé and Príncipe, Sudan, Timor-Leste and Vanuatu). In the future the coverage of this pilot initiative could be widened to most of the emerging and developing markets. This would allow a representative global database on

public policies related to infrastructure development.

This survey can be considered as a key input into the analysis of the effectiveness of public policies in infrastructure that complements existing quantitative surveys (see Nieto Parra et al. (2013) for the results obtained in Latin American countries).

Co-ordination among actors and institutions with particular interests interacting in each stage of the PMP can help solve information, incentives and enforcement problems and different transaction costs that further affect political relations and outputs of public policies. Empirical evidence highlights the positive outcomes of the implementation of good policies on private investment. For instance, the telecommunications sector in Africa has experienced successful examples of private involvement. After some regulatory changes in that sector, the liberalisation of this market improved the performance of this market (Djiofack-Zebaze and Keck, 2006). In that context, external players in the arenas of infrastructure investment are often given the appropriate incentives through the design of public policies in infrastructure. Regarding emerging economies, the phase of prioritisation and planning is the most challenging in the policy-making process. Low technical capabilities for project design and the lack of a framework for policy implementation stand out as the most adverse factors behind the effectiveness of public policies (OECD, 2013c).

Box 4.4 – Donor support on public governance of infrastructure investment

Significant donor support is directed towards enhancing public administrative capacity or procedures that directly or indirectly affect the development and smooth operation of infrastructure projects. It is provided at both national and sub-national levels for, e.g.: transparent and competitive procurement; effective contract enforcement; management of PPP Units; dealing with businesses; and tackling corruption. An example project for this area is co-financed by AsDB, Australia, and Canada to help the Philippines create a legal and regulatory framework for PPPs and establish a facility to prepare bankable PPP projects for competitive bidding.

In the energy sector, the DFID-funded Nigeria Infrastructure Advisory Facility (NIAF) as another example of donor support to improve the enabling environment. NIAF is a technical assistance facility specifically requested by the President's Office. This led to substantial technical assistance including support for a large scale power sector privatisation which has generated around $2.5 billion. NIAF2's ability to mobilise resources quickly to respond to requests for assistance or to fix new challenges, as well as its ability to act as an interlocutor between different Ministries, Departments, and Agencies (MDAs), are now widely recognised in Nigeria as essential elements of the reform process in Nigeria's power sector. NIAF support has also been requested to improve the design, budgeting, and prioritisation of government capital projects.

5. Leveraging private sector finance for infrastructure investment

5.1 Recent trends and actors in infrastructure financing and related regulation

On the financial side of the infrastructure investment equation, infrastructure financing can present particular challenges owing to the nature of infrastructure assets. Some common characteristics of infrastructure assets that differentiate them other assets, as identified by the OECD's "Mapping of Instruments and Incentives for Infrastructure Financing" (a 2015 report to the G20 Investment and Infrastructure Working Group), include: capital intensity, high up-front costs, lack of liquidity and a long asset life; economies of scale and externalities, which can be difficult to measure and even more difficult to charge for; heterogeneity, complexity and presence of a large number of parties; and opaque and diverse structures, including highly scattered information by which investors can assess risk-structures and the infrastructure market, and the lack of a clear benchmark for measuring investment performance (OECD, 2015f).

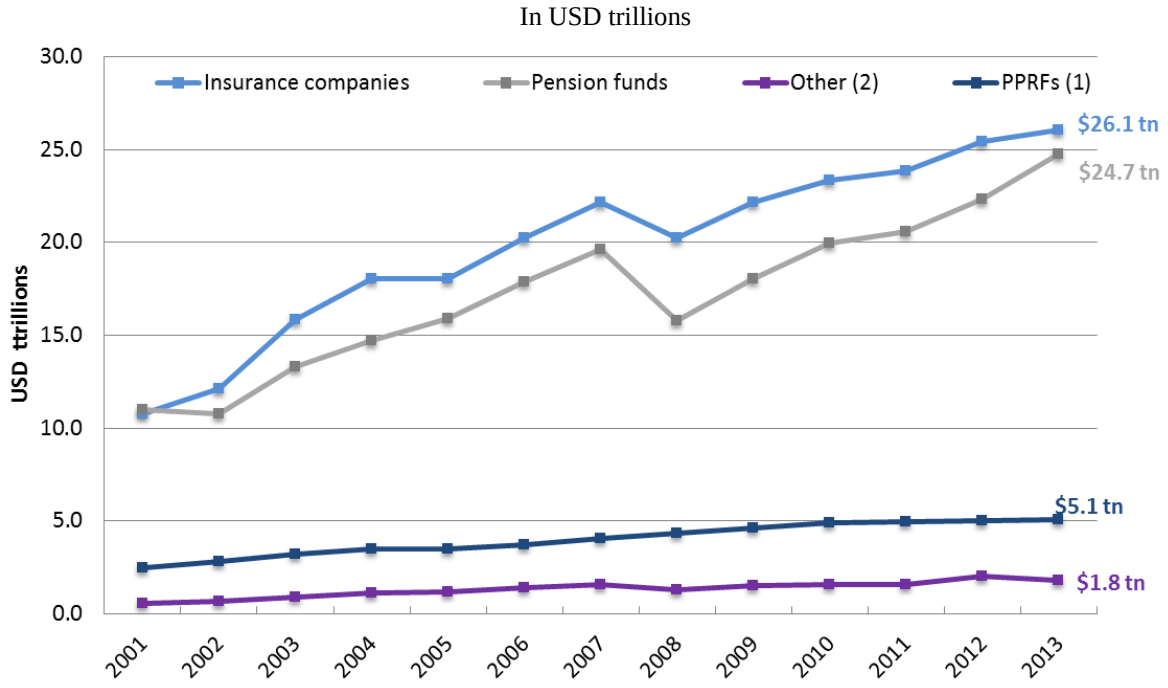
To help address some of these constraints, and particularly the latter, the OECD's 2015 mapping report provides a comprehensive, structured overview of the financing channels for infrastructure and the range of risk mitigants and financial incentives that may enable the mobilisation of private sector capital for infrastructure financing. It identifies relevant instruments for both project operators and infrastructure companies and investors, including guarantees, insurance, grants and capital provision. Alongside, the report provides a comprehensive classification of risks, in order to assess how the risk mitigants and incentive instruments might be best targeted. This typology of instruments could possibly provide a base for indicators that would reflect the adequacy of existing financing channels for infrastructure projects in LICs. By developing a framework for categorising the risks related to infrastructure projects, the taxonomy can also help governments identify where gaps between the supply and demand for risk mitigation continue to impede investment.

Where financing is concerned, the growing infrastructure investment gap can be attributed to two factors: a lack of public spending on new infrastructure projects or in the replacement and refurbishment of aging infrastructure; and low levels of investment by the private sector, which is principally comprised of banks, but also (increasingly) institutional investors. The regulatory landscape for traditional forms of infrastructure financing via the banking system as well as non-bank financial institutions is rapidly evolving. Basel III and Solvency II constitute major regulatory changes in the financial industry and will certainly impact asset allocation decisions of banks and insurers. Advances in banking regulation can increase the costs of developing instruments geared at financing infrastructure projects, including in LICs. The pricing of loans in particular can be influenced by capital and liquidity requirements, even to an extent that banks may become uncompetitive for certain products: high risk, low liquidity and high regulatory costs will make banks increasingly averse to maintaining such assets in their portfolios. Developing indicators to monitor the evolution of bank lending to infrastructure projects could be useful so as to take stock of such possible impacts.

Any relevant indicators for infrastructure financing would also have to look into the behaviour of institutional investors more specifically. Indeed since the global financial crisis, assets under management (AUM) amongst institutional investors have steadily increased, surpassing previous high levels reached in 2007 (Figure 5.1). Institutional investors such as pension funds, insurance companies, and sovereign wealth funds play a crucial economic role through their capacity to channel savings into long-term investment. While they are most present in developed markets, emerging market institutional investors are expected to continue to increase in both scale and influence over the next decades.

As economic actors, the importance of institutional investors has never been greater: in absolute terms, assets under management of institutional investors in the OECD stood at USD 57.7 trillion at the end of 2013. In relative terms, institutional AUM comprised 95% of GDP in the OECD region in 2001 – this figure has since grown to 122% of GDP in 2013. This growth underscores the importance of mobilising institutional investment as an additional source of finance for infrastructure and SMEs.

Figure 5.1 Total assets by type of institutional investor in the OECD, 2001-2013



This growth, which mirrors that of capital markets themselves, may be interpreted as the continued "financialisation" of the economy, but long-term investors such as pensions have a high capacity to invest in the real economy – a pension fund collects contributions from an individual entering the workforce, and may only start paying benefits thirty or forty years later. The growth of institutional investors can bring about the prospect of a larger and more diversified source of long-term financing across all sectors in the economy and specifically in sectors such as infrastructure, education and skills, and new technology, which are key drivers of growth, competitiveness and employment. Given the low interest rate environment and volatile stock markets of recent years, institutional investors in OECD and emerging economies are looking for new sources of long-term, inflation-protected returns.

A gradual shift towards greater infrastructure investment by these investors is indeed emerging. One of the most salient trends observed in the most recent OECD Survey of Large Pension Funds and Public Pension Reserve Funds was the increase in alternative investments over the past four years (see Box 5.1). The low yield environment in global bond markets combined with lower expected equity returns has intensified the search for high quality, low correlated assets beyond traditional categories such as stocks and bonds. As a result institutional investors are increasing their allocations to private equity, hedge funds and real estate. Infrastructure, which is often classified as an alternative investment, has been part of this growing trend.

Box 5.1 – Recent trends in institutional investment portfolios

As a result of recent investment trends and encouraged in part by the processes of privatisation, liberalisation and globalisation, institutional investors such as pension funds, insurers and sovereign wealth funds have started to invest in infrastructure assets. Some have built a lengthy track record of experience and sizable allocations, particularly investors based in Australia and Canada. More recently, investors in Europe, the United States, and other countries are catching up to their Australian and Canadian peers.

As institutions enlarge their universe of investment, infrastructure can be added across a wide spectrum of

instruments including debt and equity, in public or private markets. The most sophisticated investors have built specialized in-house teams that source deals, perform due diligence and invest directly in infrastructure debt and equity. Groups of investors have also formed co-investment platforms to achieve diversification and to amass the large outlays that are generally necessary to finance infrastructure. These trends bypass intermediaries such as banks, who have traditionally acted as underwriters and syndicators of loans. They also bypass investment funds which are still a popular method for investors to gain access to unlisted equity and debt, however, issues with investor objectives (funds tend to have shorter lifespans than the assets themselves) and high management fees have encouraged the insourcing trend.

With government finances strained and banks increasingly unable to use their balance sheets to finance long-term investment (due to stricter Basel III capital requirements), a potential solution is that private sources of finance for long-term investment will need to step in.

5.2 Market-based finance of infrastructure

Local investors – pension funds, insurance companies, mutual funds and sovereign wealth funds (SWF) – offer a number of potential advantages if they can be tapped. International experience in countries such as Mexico and Chile suggests that institutional investors and in particular pension funds have been instrumental to the growth of the corporate bond market, and, in turn, to the provision of development finance. In many emerging countries, however, institutional investors are still largely underdeveloped.

Another possible source of financing is large, foreign institutional investors. Sovereign and pension fund investors in search of higher returns and diversification are increasingly looking at emerging markets. From the perspective of investors, investments in emerging markets represent an asset class that can bring diversification and long term capital growth opportunities. Incentives and assistance for international institutional investors to become more involved in funding infrastructure projects globally can be put in place.

Whether foreign or domestic, for institutional investors to gain access to infrastructure, two primary channels exist. The first consists of investment in corporate entities that finance their balance sheets by issuing shares and bonds. From an investor prospective, investing in such entities is part of their traditional asset allocation. The formation of domestic capital markets facilitates this form of market-based finance. The quality and depth of these markets can thus be measured through elements such as: financing via international capital markets, as a percent of GDP; the market cap of listed companies as a percent of GDP); global equity indices of credit rating agencies; and the turnover ratio of traded stocks.

However capital markets are still weak in many developing countries, and unable to provide a supportive context for infrastructure investment on their own. This situation is particularly stark in Africa, where equity market capitalisation is low, stock markets (where they exist, in only a third of Sub-Saharan African countries) are often shallow and illiquid, and there remains over-reliance on banking systems. In fact despite upturns in the continent's economic growth, this has not yet translated into a shift in savings: the savings-to-GDP ratio in 2013 was below the level reached in 2006. Financial depth, as measured by the ratio of private credit to GDP, averages 31% in lower-middle income countries – compared to less than 20% in Uganda and Zambia and just 5% in Chad (AfDB, 2014). Important efforts are therefore necessary to create deeper and more liquid capital markets – especially in African countries but also in other LICs – including through regional capital market integration so as to better reach economies of scale and attract larger infrastructure projects and companies. Recent G20 meetings indeed recognised the urgent need to deepen and broaden capital markets for developing countries to put their own financial resources to productive use, and to attract foreign capital flows. This includes equity and debt markets, along with the pools of savings (local investors) that seek long-term investment.

The second channel for infrastructure investment by institutional investors is through project finance, which takes the form of unlisted private equity investment, along with loans and/or bonds originated by banks, sovereign/sub-sovereign entities, or private investors. In this model, a project special purpose vehicle (SPV) is formed as the intermediary between the investors and the project company. The use of project finance and in particular public private partnerships (PPP) is increasingly a policy agenda item at the G20, and is growing increasingly popular in developing countries as well – with 134 economies implementing PPPs between 2002 and 2013 (WBG, 2015). Banks, through syndication or securitisation, can act as originators and underwriters of loans for SPVs – either selling issues on the market, or placing issues directly with investors. In this way, banks can free up their balance sheet while linking investor savings (still tapping institutional investors and funds) with infrastructure projects.

For many developing countries this movement is beginning, but rather with a reliance on international banks and MDB financing – especially in Africa, domestic banks lend largely to governments through the purchase of treasury bills and other instruments. Credit extended by banks to the private sector thus remains below 20% of GDP for most African countries. In addition to the more nuanced measures mentioned above (which can capture the implications of Basel III and Solvency II for bank financing of infrastructure investment), more basic elements which can help measure banking sector suitability for long-term infrastructure financing in LICs might include: claims on the private sector; domestic credit provided by the banking sector, as a percent of GDP; the interest rate spread; or money and quasi-money as a percent of GDP.

5.3 A regulatory framework to stimulate market-based infrastructure finance

The *G20/OECD High Level Principles of Long-term Investment Financing by Institutional Investors*[17] provide a policy framework for the formation of capital markets to facilitate long-term investment, along with supportive policies to open investment channels from the private sector. It therefore covers regulatory issues on both the supply and demand sides of long-term investment, with the aim of avoiding interventions that may distort the proper functioning of markets. The principles are intended to be consistent with existing regulatory standards for institutional investors, such as those addressing the financial regulation of investment and solvency. Over 2014 and 2015 the OECD has highlighted for the G20 IIWG a set of effective common approaches (as well as some innovative approaches) to the implementation of these Principles. These are examples of regulatory, supervisory or industry-based measures and practices that have been widely endorsed or adopted in a number of jurisdictions, and which are regarded as having been successful (OECD, 2015g).

In line with these Principles and their possible applicability to LICs, two elements are briefly introduced here: capital market development and issuance of long-term instruments by governments; and development of institutional investors and long-term savings. Despite strong growth of institutional investors in many developing countries in recent years (especially in Africa), both of these elements have posed particular challenges in LICs – as government bond yield curves have tended to be short in duration, and not always predictable; and institutional investors have typically been restricted from making investments outside of their home countries (Nkontchou, 2010). Development of financing vehicles and incentives for infrastructure investment, and the role of MDBs, as addressed at the end of this section, thus remains highly necessary to effectively complement improvements in the enabling environment for infrastructure investment.

Capital markets development

Certain framework conditions, when put in place, can help to foster long-term investment through capital markets. Governments should support stable macroeconomic conditions that are conducive to longer-term investment, by maintaining credible monetary policy frameworks, responsible fiscal policies

and sound financial sector regulatory environments. Capital markets and financial intermediaries should be subject to an appropriate and predictable regulatory and supervisory framework within and across jurisdictions. Tax neutrality towards different forms and structures of financing should be promoted. Investment frameworks should as far as possible be made consistent across countries to facilitate the cross-border flow of long-term financing.

Governments should consider issuing appropriate long-term instruments in line with their debt management and capital market development objectives. A domestic yield curve of government issued nominal bonds (including maturities of 20-30 years) and alternatively a yield curve of inflation indexed bonds, where appropriate, underpin the development of long-dated private sector securities markets and can support asset-liability management by institutional investors and complement long-term investment portfolios.

Development of institutional investors and long-term savings

Alongside broader capital market development, the promotion of policies that encourage and support the development of long term savings and of institutional investors and their role in long-term investment financing and financial market stability are crucial to develop channels of non-bank supplied capital. However these efforts should complement and build on the expertise and activities of other financial intermediaries, such as banks and asset management industries.

With respect to pension funds, such policies may consider the use of default mechanisms such as automatic enrolment as well as, where appropriate, mandatory arrangements. When relevant and subject to the macroeconomic situation, appropriate financial incentives to long-term savings should be provided and tax impediments removed. Governments can also promote the development of long-term savings through pooled investment vehicles and collectively organised long-term savings and retirement plans, increased public awareness, financial inclusion policies, and the promotion of financial literacy. The many regulatory and supervisory requirements imposed on pension funds (especially in developing countries, including funding and solvency regimes, accounting rules, and regulatory requirements for daily pricing of pension fund portfolios) also need rationalisation in order to facilitate investment in illiquid instruments.

Available data indicate that a few pension funds in Africa are relatively large. Assets of pension funds as a share of GDP for South Africa (87.1%), Namibia (76.6%), Botswana (47.3%), and Kenya (18.3%) are higher than the average of a sample of non-OECD countries (17.0%). Data further indicates that funds in some of these countries – notably Kenya, South Africa, Cape Verde, Tanzania, Uganda, and Swaziland – are investing in infrastructure. There is thus vast potential here. The case of Nigerian pension funds, which have not invested in infrastructure, may in part be explained by the fact that the Nigeria's Pension Reform Act, which repealed earlier pension laws and paved the way for pension assets to be invested in infrastructure, was only enacted in July 2014. The Nigerian pension system was challenged by large backlogs in payment of public pension, inadequate data on beneficiaries, and the lack of standardization of private schemes. This is an example of how host-country reforms can make a real difference in lifting regulatory obstacles to domestic financing of infrastructure investment (OECD & UNOSAA, forthcoming).

Alongside, the financial regulatory framework – including valuation rules, any risk-based capital requirements and other prudential measures – for institutional investors should reflect the particular risk characteristics of long-term assets such as infrastructure appropriately. The framework should also consider the investment horizon and typical holding period of these investors, while promoting their soundness and solvency as well as broader financial stability and consumer protection. These efforts can help bolster infrastructure as a credible asset class for institutional investors; they can usefully be measured to help assess the degree of maturity of a county's financial framework for supporting long-term infrastructure investments.

Development of financing vehicles and incentives for infrastructure investment

With infrastructure investment increasingly taking the form of project finance, governments and MDBs can play a role in the procurement of finance (see Box 5.2 identifies donor efforts to leverage and complement private financing for infrastructure provision). For example, governments may consider providing risk mitigation to long-term investments projects where it would result in more appropriate allocation of risks and their associated returns. Such risk mitigation mechanisms may include credit and revenue guarantees, first-loss provisions, public subsidies, and the provision of bridge financing via direct loans. These measures may also be extended to corporate investment in infrastructure. The OECD's 2015 report on "Mapping of Instruments and Incentives for Infrastructure Financing" can help take stock of these measures, and possibly bring more clarity to policymakers and regulators trying to identify appropriate support mechanisms to foster investment. It can provide a basis for assessing the advantages and disadvantages of these instruments and informing the various options for their use by LICs. While much of the demand from investors has been in brownfield assets, policy efforts should focus on creating attractive opportunities in greenfield assets as well.

The role of the private sector, through insurance contracts, letters of credit, sound risk management, and derivatives contracts are other tools that can be used to mitigate certain risks in infrastructure finance, and enhance the bankability of infrastructure assets – in addition to the public sector. Encouraging such institutions can also increase the attractiveness of long-term infrastructure finance.

Box 5.2 – Donor support on financial frameworks for infrastructure investment

Donors provide support to the financial sector—which is vital for infrastructure investment—both at upstream and downstream levels. Upstream support includes capacity building in national policy and regulatory reform to develop financial regulations and a stable and effective capital market. Downstream support is directed to financial intermediaries that either invest in infrastructure projects or on-lend to other private sector players such as developers.

An example in this area include a facility co-financed by IMF, World Bank, Germany, Luxembourg, Netherlands, Switzerland, and UK to provide technical assistance to a number of low and middle income countries including Morocco, Kenya, Guatemala, South Sudan and Viet Nam. Activities financed through the facility cover financial sector regulation, supervision, and development. In particular, it includes advisory services on strategy development, legal reform, institutional capacity building, and financial crisis preparedness.

In addition to assisting developing country governments, development partners also directly support the private sector to mobilise their resources for developing country infrastructure. DFIs provide financial and technical support to private companies and financial institutions interested in investing in infrastructure in developing countries. They generally mitigate risks, real or perceived, of private-led investment for development undertaken at commercial or quasi-commercial terms. Donors have also increasingly provided innovative forms of financing to leverage private investment in infrastructure. Among donors and development finance institutions (DFIs) that support the private participation in infrastructure, on average 15% was disbursed directly to the private sector in 2011, mostly through non-concessional loans and equity. In addition, development guarantees provided by DFIs – while they are not included in the amount above as they do not constitute 'flows' in the strict sense of the term – mobilised on average USD 1 billion per year from the private sector over 2009-2011.

Among the more sophisticated financial instruments that DFIs are developing to enhance private participation in infrastructure, several bilateral and multilateral institutions now provide mezzanine capital (preferred equity, subordinated loans), blended loans, and asset-backed securities—the latter being mostly used by Islamic development finance institutions. And in addition to DFIs/IFIs, several countries have created special programmes within existing institutions (e.g. Canada's blended finance programme within the Department of Foreign Affairs, Trade and Development and Japan's Private Sector Investment Finance within Japan International Cooperation Agency) or multi-donor trust funds hosted by MDBs (e.g. World Bank's Public Private Infrastructure Facility).

6. Conclusions

Based on experiences from OECD as well as developing and emerging economies, this report provides an overview of key policy considerations and options for reform, across four main policy fields affecting the enabling environment for infrastructure investment. It also takes stock of policy indicators and databases with regards to these policy issues (detailed in Annex 1), highlighting some duplications and/ or gaps in substance (i.e. content and thematic coverage) as well as methodology (regarding the type of data and its collection). These are briefly listed below, together with some implications for the potential interpretation and use of this data by LICs:

- **On a substantive level**, several policy fields require better coverage, and/or face some duplication in terms of the indicators already available:

  - There is uneven coverage on **government capacity and adequate skills / human resources for managing private participation in infrastructure** (see Chapters 3 and 4 above). This seems to be a recognised indicator gap, which several organisations are now striving to fill. The EIU *Infrascope* contains measures for the quality of institutional design (including the existence of several key agencies for PPPs) as well as operational maturity (notably prior experience with private participation in infrastructure, and public capacity to plan and oversee these projects); and the WBG's pilot *Benchmarking PPP Procurement 2015* assesses preparation of PPPs as well as PPP contract management. However, both of these efforts are largely specific to PPPs alone, and do not consider government capacity as pertains to private participation in infrastructure more broadly (for instance regarding infrastructure market regulation, management of state ownership, or even the degree of community consultation and inclusiveness in infrastructure project planning and delivery). Moreover as of today, they cover a very limited number of countries.

  - Rate of **infrastructure contract renegotiation and contract disputes**: this is covered to some extent through the MIGA-EIU Political Risk Surveys, but these are largely perception-based, are not infrastructure-specific, and do not necessarily reflect the number of disputes or renegotiations that have actually taken place. As for the UNCTAD Database of Treaty-based Investor-State Dispute Settlement Cases is publicly available but outdated, and not infrastructure specific; and the only infrastructure specific work conducted based on the OECD's treaty database is from 2006 and would need renewal (OECD, 2006). The type of dispute and its outcome (whether or not it was resolved, and whether via contract restructuring, domestic arbitration or at international level) can also be of strong interest for policymakers, including at the sub-sector level.

  - Data on **corporate governance, efficiency, and fiscal weight of infrastructure SOEs** is particularly difficult to collect, in part because this information can be considered sensitive or strategic by host governments. This may be where the widest gap lies in terms of policy areas covered (Chapter 3). Indeed while several existing indicators (such as the OECD PMR, ETCR and STRI) capture the presence and degree of dominance of state-owned firms in infrastructure markets, no corresponding indicator or weight accounts for the corporate governance of these SOEs (which can help shed light on the positive or negative effect of that SOE on private investors and on infrastructure delivery in general). This is despite the existence of useful normative guidance for improving SOE functions, such as the *OECD Guidelines for the Corporate Governance of SOEs*. Indeed as OECD research on cross-border M&As by SOEs has indicated, SOEs are not systematically less efficient or profitable than private companies, and their presence as counterparts to private investors is not always a disincentive. Especially given the dominant presence of SOEs in many infrastructure markets

of developing countries, this makes it particularly crucial to understand and monitor in what cases SOEs are hampering investment conditions (and infrastructure quality), as well as haemorrhaging public financing; and where they rather play a positive role which could further be enhanced through robust corporate governance standards.

- Data on **actual public expenditure in infrastructure** is collected regularly by the OECD for its member countries; however there is little sector granularity, and a systematic database for emerging and developing economies is lacking. Such data would be very useful for obtaining a "full picture" of how public infrastructure spending backs and complements private investment, and could also help assess to what extent government priorities for the development of specific infrastructure sectors (as expressed in national infrastructure plans for instance) are reflected in practice. A related shortfall is the lack of regular updates on **the stock of infrastructure** in developing countries; although the World Bank's World Development Indicators contain some information on this, there is always a time lag of a few years. Finally **prices of infrastructure services** are not systematically compiled, particularly for LICs, despite the fundamental importance of such information for assessing investor incentives as well as end-user affordability.

- There seem to be some **important overlaps between several sets of indicators** which could be rationalised, especially given the resource-intensive nature of the data collection. This may be a risk in the *Infrascope* index and the WBG's pilot *Benchmarking PPP Procurement 2015*, although the intent is to make them largely complementary (with the *Benchmarking PPP Procurement* focused more specifically on legal and regulatory aspects of PPPs at a more granular level with actionable indicators); as well as between the Services Trade Restrictiveness databases of the OECD and World Bank (although these could complement each-other to the extent that they cover somewhat different sets of countries).

- **Country coverage** is also a challenge. For many of the elements raised throughout the note, surveys and databases are available but cover mostly OECD and emerging economies. WBG databases are generally the exception. Especially in areas of high technical complexity (such as the governance and functioning of infrastructure regulators, or the governance of institutional investors engaged in infrastructure), expanding the coverage of indicators to LICs in a systematic manner may require some variation in the nature of questions surveyed and data collected – although changing the methodology would reduce comparability with earlier coverage of those indicators. The cost of data collection will also come to the fore as a more binding constraint, especially in order to track policy variation over time.

- Across the board, there is also a **lack of *de facto* indicators** – with reliance mostly on *de jure* indicators and on perception measures. *De jure* indicators usefully assess whether there has been a legal transposition of commitment (such as those of international treaties) into national laws. As they only capture what is on the books, however, they provide little information about how this is enforced or reflected for investors on the ground. Indicators on *de facto* compliance can therefore be very complementary. Likewise, the limits of perception- and survey-based indicators (which are prone to selection bias, and often rely on subjective opinions of businesses and users, or on self-reporting in government) must be recognised. While they are useful in their own right, more discerning outcomes-based indicators can help provide a more accurate picture (OECD, forthcoming – based on work conducted with the Southern African Development Community).

- The majority of indicators covered here **lack granularity at the infrastructure sub-sector level,** where certain policy considerations – in particular as concerns market structure, rates of return, and regulation – may manifest themselves in very different ways, e.g. in renewable-energy power

infrastructure sectors. The importance of timeliness, the economies of scale and scope in construction and operations, the level of inter-modal substitutability and asset specificity, and the degree and type of likely market and government failures, indeed all vary across infrastructure sub-sectors – with corresponding effects on investor certainty and returns. For these reasons it could be useful to provide governments with a 'menu' of relevant indicators for different sub-sectors, derived from deeper analysis of prevalent market and government failures in each sub-sector. This could help track the specific channels through which the identified policy elements impact the value proposition for prospective investors. Approaches with more sub-sector specificity – such as the OECD ETCR or STRI, or the OECD Survey of Water Regulators – are highly useful and would be worth developing in a more systematic manner, in relation to all the policy issues raised in this note.

- When it comes to **implementation by LICs** of the identified indicators, a monitoring framework will need to be developed and institutionalised, possibly with donor support in the initial stages. This would need to focus on a smaller, more manageable set of prioritised indicators, which are feasible and appropriate for measurement in LICs. It would also be helpful to set out concrete steps as to how widespread measurement of them could be achieved. In doing to, it is important to avoid too much of a scoreboard-based/ benchmarking approach. Although such rankings can be useful in suggesting gaps and exerting peer pressure, they by nature overlook specific country contexts and may induce counter-productive "rank-seeking" behaviour (OECD, forthcoming). Several of the indices mentioned in this note (such as the *Infrascope* or the Doing Business indicators) are primarily rank-based, whereas others (most of the OECD indicators) are measured against a given global good practice. It could be useful to employ several of these approaches together and to feed them into more context-specific forms of monitoring. The 2015 modifications to the WBG Doing Business methodology (where for the first time the 'distance to the frontier' measure is systematically reported together with the country ranking) is one example of constructive evolutions beyond the scoreboard approach. The WBG *Benchmarking Public-Private Partnerships Procurement* pilot also plans to go in this direction.

- Also regarding implementation, most of the monitoring approaches and indicators mentioned earlier are designed for, and used at, the country level. Especially given the vast benefits that can be secured from cross-border infrastructure projects, there is scope for **strengthening regional (supra-national) indicators** on infrastructure investment policies. The *Infrascope*, among other indices, already analyses countries in regional groupings; this approach could be usefully improved and replicated, with a focus on geographic groupings where cross-border projects are particularly likely (or already exist in the regional pipeline). In this way these infrastructure indicators could be better mainstreamed into regional monitoring processes, in collaboration with regional organisations, MDBs and infrastructure funds, and Regional Economic Communities (see Annex 1).

- **Sub-national monitoring** can be another step to take, but would be more resource-intensive – for small-scale infrastructure deployment. While not all policy areas would be affected (for instance the nature of infrastructure tariff-setting would be unlikely to change at the local level), other elements (such as PPP maturity or access to investor dispute settlement) may well vary. The World Bank Subnational Doing Business Reports are beginning to move in this direction, as are various OECD work-streams (Regions at a Glance, Regional Well-Being and Metropolitan Database, sub-national applications of the Policy Framework for Investment, etc.). These could provide other IOs and governments with interesting 'lessons learned'. Going further, indicators on the particular challenges faced by municipal governments in developing urban infrastructure would be highly useful as urban infrastructure remains a critical but under-explored area. In a similar vein, the question of government capacity remains insufficiently unexplored at sub-

national levels; the approach of the *Infrascope* index (which evaluates, with a weight of 10% within the overall score, whether infrastructure concessions can be conducted at the regional, state or local level, and the consistency of these frameworks) is mostly a *de jure* assessment and cannot capture on its own the important capacity gaps that can often arise at local level – nor any efforts, if they exist, at capacity building between central and local PPP Units or procurement authorities.

Looking ahead to implementation

Having flagged the above gaps and duplications in the policy indicators under consideration, it is clear that targeted efforts are needed across international organisations and donors to rationalise existing indicators, and save time and resources in terms of data collection, while investing in the development of statistical capacities and data collection to support informed policy reforms. On the positive side, duplication across indicators appears to be largely coherent, and there is no fundamental contradiction regarding the essential pre-conditions for successful attraction and management of private investment in infrastructure. IOs would nonetheless need to consider realistic options for building better linkages across existing indicator sets. Indicators currently developed across different policy bodies of the OECD could provide some examples of stream-lining and cross-fertilisation: the OECD STRI and PMR for instance both refer to the OECD FDI Restrictiveness Index, and the OECD Indicators of Competition Law and Policy share a similar methodology to the PMR. Correlation analysis has been employed in certain cases to assess the consistency of policy messages across these indicators (OECD, 2013).

Data collection also needs to be selective, focusing on the key priorities of reforms, and using readily available data sources. The need to develop new indicators altogether (as regards governance and efficiency of infrastructure SOEs for instance), or to expand the coverage and regularity of existing ones, in particular begs the fundamental question of resources. If these indicators are to effectively serve LICs, they cannot be used in a 'one-shot' manner; and yet their collection and compilation will take time and effort for all parties involved. Moreover in many cases the data cannot be collected by the countries themselves, not only because of resource constraints but also due to their underlying methodology (they are based on surveys of many contributors and consistency across countries is required, necessitating an independent party for data collection and assessment). In moving forward with this project, delegates of the G20 are therefore invited to consider the need for indicator population and use to be realistic and cost-effective.

Deployment of a monitoring framework based on these indicators will be a related challenge and will need to rely on concerted efforts of all involved, from IOs to donors and governments. Monitoring structures should preferably build on existing institutional structures (possibly regional, and in a manner that is fully complementary to monitoring procedures that are already ongoing), so as to avoid creating a greater administrative and reporting burden for LICs. This report has been a first step in this direction, but more will need to be done to consider how LICs can use any of these indicators, and the related monitoring structures, at least cost and with the most impact on ongoing policymaking processes.

If the gaps and duplications above, as well as these implementation challenges, are well addressed, development and use of policy indicators across these various policy dimensions can effectively help LIC governments prioritise policy reform. They can help governments identify the most dominant bottlenecks to investment or infrastructure delivery, and can hopefully allow them to single out the most cost-effective reforms (or ' lowest-hanging fruit') for short term action – while building a longer-term plan of reform for the more complex policy measures. Such indicators can thus help governments arbitrage between different reforms, especially where trade-offs are involved; and they can also provide a strong basis for peer-learning and cross-country dialogue. Especially given the general scarcity of systematic data on policy

reform and its impacts in LICs, well-developed and easily accessible indicators can make precious contributions to the public dialogue on infrastructure investment.

Relatedly, donors engaged in supporting the relevant policy reforms in LICs are encouraged to use these indicators more actively, to help examine topics such as: (i) whether donor support is effectively aligning with developing country priorities, challenges and opportunities for infrastructure investment; and (ii) the impact of this support in actually attracting private investment for sustainable infrastructure that ultimately contributes to the economic, social and environmental development of LICs. Annex 2 provides more evidence regarding the role of official development finance in supporting private investment in infrastructure to date.

ANNEX 1: CITED INDICES

The different policy indices cited above are introduced in more detail below. The emphasis is placed on indices with specific applications or coverage to infrastructure sub-sectors; meanwhile broader indices which cut across economic sectors (in particular those related to business facilitation and ease of investment) are not expanded upon but can also be included in further analysis and/ or construction of new composite indicators. Several of these indicators cover OECD countries in majority, but – depending on the policy area – could usefully be tailored and expanded to other countries, including LICs.

It must be noted that in addition to these indicators compiled by different international organisations, Regional Economic Communities also already undertake data collection on their member economies, and score these in terms of broad business facilitation and openness to investment. Examples include: the Economic Community of West African States (ECOWAS), which compiles performance indicators according to a logical framework approach, for the four pillars of its Community Development Programme – including infrastructure development; the Association of Southeast Asian Nations Economic Community (ASEAN AEC) Blueprint, which has established a Scorecard for reporting on member implementation of various AEC measures, including free flow of capital; and the Common Market for Eastern and Southern Africa (COMESA) which has proposed a set of indicators to measure regional trade integration, including measures on capital flows and foreign investment, as well as on the regulatory environment for investment and public procurement. Not all of these scoring procedures are completed on a regular basis or with full country coverage; but as highlighted in the concluding section above, it would be important to ensure that any extension of the indicators below to developing countries be fully aligned with pre-existing data collection efforts and national and regional levels.

I. Indices related to the openness and attractiveness/ ease of broader business environment

1. World Bank Country Policy and Institutional Assessment (CPIA)

The CPIA rates countries against a set of 16 criteria grouped in four clusters: (a) economic management; (b) structural policies; (c) policies for social inclusion and equity; and (d) public sector management and institutions. Since 2006 the CPIA has been gathered on an annual basis, and currently covers 81 economies across all regions.

Relevant categories within the "Structural Policies" cluster may include measures for the financial sector and for the business regulatory environment. Three sub-components are measured in the latter: regulations affecting entry, exit, and competition; regulations of ongoing business operations; and regulations of factor markets (labour and land). The "public sector management and institutions" category of the CPIA also includes highly relevant measures, for property rights and rule-based governance, quality of budgetary and financial management, efficiency of revenue mobilisation, quality of public administration, and transparency, accountability, and corruption in the public sector.

2. World Bank Doing Business Indicators

The World Bank project provides, on an annual basis, objective measures of business regulations for local firms in 189 economies, as well as selected cities at the subnational level. Primarily, Doing Business is premised on time and cost of complying with various business regulatory procedures. The scoring uses two types of data: the first comes from the reading of laws and regulations in each economy, featuring consultations with lawyers and other professionals from each country; and the second comes from the inputs into indicators on the complexity and cost of regulatory processes. To make the data comparable across countries, the indicators are based on specific case assumptions, such as the type of business –

generally a limited liability company operating in the country's largest business city. This use of 'standardised case scenarios' makes the data more easily comparable across economies and enhances transparency of the methodology.

The 2015 report introduces some methodological changes, including the use of two aggregate measures instead of one: (i) the ease of doing business ranking (which compares economies with one another); and (ii) the distance to frontier score (which benchmarks economies with respect to regulatory best practice, showing the absolute distance to the best performance on each Doing Business indicator). Doing Business has also expanded its sample of cities in large economies, defined as those with a population of more than 100 million. Doing Business begins with a questionnaire, but it is not a statistical survey, as the texts of the relevant laws and regulations are collected and answers checked for accuracy.

Among the Doing Business Indicators, particularly relevant categories for infrastructure investment can include starting a business, dealing with construction permits, getting credit, registering property, enforcing contracts, and resolving insolvency. Alongside, the Investing Across Borders (IAB) indicators serve as a complementary measure to assess laws, regulations, and practices that specifically affect foreign direct investment in 87 economies. These IAB and DB measures can be complemented by more qualitative information from World Bank Investment Climate Assessments and Business Environment Snapshots (https://www.wbginvestmentclimate.org/research-and-diagnostics/), as well as from OECD Investment Policy Reviews based on the OECD Policy Framework for Investment (http://www.oecd.org/daf/inv/investment-policy/pfi.htm).

3. OECD FDI Regulatory Restrictiveness Index

The OECD FDI Regulatory Restrictiveness Index (http://www.oecd.org/investment/fdiindex.htm) takes stock of regulatory restrictions which prevent foreign investors from entering infrastructure markets of OECD countries, non-OECD G20 countries and adherents to the OECD Declaration on International Investment and MNEs. It covers 58 countries, including all OECD and G20 countries, and covers 22 sectors. Of these sectors, the following are relevant for infrastructure investment: electricity (generation and distribution), and transport (including international/domestic breakdown for air and road transport). It is currently available for 7 years: 1997, 2003, 2006, 2010, 2011, 2012, and 2013.

The FDI Index retains its focus on four types of measures: equity restrictions, screening and approval requirements, restrictions on foreign key personnel, and other operational restrictions (such as limits on purchase of land or on repatriation of profits and capital). The discriminatory nature of measures is the central criterion to decide whether a measure should be scored. Therefore, state ownership and state monopolies, to the extent they are not discriminatory towards foreigners, are not scored. Nevertheless, non-discriminatory measures are also covered when they are burdensome for foreign investors (such as rules regarding nationality of key personnel/directors). The Index is included within some of the other composite indices referred to here, including the OECD indicators of Product Market Regulation and the OECD STRI (see above).

Actual enforcement of statutory restrictions, which is difficult to assess, is not factored into the scoring. The FDI Index scores overt regulatory restrictions on FDI, ignoring other aspects of the regulatory framework, such as the nature of corporate governance, the extent of state ownership, and institutional or informal restrictions which may also impinge on the FDI climate.

In addition to the FDI Index, the OECD has also developed a more general **Investment Reform Index** (IRI) on a regional basis, which provides a qualitative assessment of policies and institutions that critically affect the environment for direct investment. It looks at: investment policy and promotion; human capital development; trade policy and facilitation; access to finance; regulatory reform and

parliamentary processes tax policy analysis; infrastructure for investment; and SME policy. However to date the coverage has been limited and this index is not yet collected in a systematic manner.

4. OECD Services Trade Restrictiveness Index (STRI)

The OECD STRI (http://www.oecd.org/tad/services-trade/services-trade-restrictiveness-index.htm) helps identify which policy measures restrict trade. The STRI database records measures on a Most Favoured Nation basis. Preferential trade agreements are not taken into account. The information is standardised so that users can easily find and compare specific policy measures across countries. It is regularly updated. For each service sub-sector, the policy measures are categorised under five areas (with the specific questions under each area differing slightly according to the specificities of each sub-sector):

Measures from OECD STRI	Selected elements captured by measure
Restrictions on foreign ownership and other market entry conditions	Among others, captures: maximum foreign equity share allowed in the sector; statutory or other legal limits to the number or proportion of shares that can be acquired by foreign investors in firms that are controlled by national state or provincial governments; and whether licensing/permits are subject to an economic needs test.
Restrictions to movement of people	Among others, captures quotas and/ or labour market tests on independent or contractual services suppliers.
Other discriminatory measures	Among others, captures: whether foreign suppliers are treated less favourably regarding taxes and eligibility to subsidies; explicit as well as procedural discrimination in favour of local firms in public procurement; and whether laws or regulations impose national standards that deviate from international standards/conventions.
Barriers to competition and public ownership	Among others, captures: whether foreign parties have redress when business practices are perceived to restrict competition in a given market; whether publicly-controlled firms or undertakings are subject to an exclusion or exemption from the application of the general competition law; whether the national, state or provincial government control at least one major firm in the sector; and whether Industry representatives are involved in setting entry and pricing regulations.
Regulatory transparency and administrative requirements	Among others, measures time and procedures required to complete all official procedures required to register a company; and whether regulations relevant to the sector are published or otherwise communicated to the public prior to entry into force.

In addition to investment openness, the STRI is therefore also useful for assessing infrastructure market openness, competitiveness, and regulation (see next section). The STRI scoring methodology uses binary scores. Some measures constitute hierarchies where one or a combination of a few measures would close a market segment or a mode of supply to foreign suppliers. In other cases a restriction on one measure would render others irrelevant. The scoring methodology captures such hierarchies by conditioning the scoring on measures on the answers to questions higher up in the hierarchy of measures. Some measures are complementary. These are bundled together in the scoring methodology such that if one measure in the bundle is scored as a restriction, all of them are. Coverage is for 40 OECD and partner countries across 18 sectors, including: transport and Courier Services; Air transport; Maritime transport; and Rail freight transport; and Road freight transport.

5. World Bank Service Trade Restrictions Database

The World Bank Services Trade Restrictions Database collects information on applied services trade policies across 103 countries, 18 services sectors (covering telecommunications, finance, transportation, retail and professional services) and key modes of service supply. It contains qualitative policy information as well as a preliminary quantification of applied measures' restrictiveness. Each country is covered in one year from within the 2008-11 range. Policy measures covered include restrictions on entry and legal form, licensing and operations as well as aspects of the regulatory environment. The data collection process

consisted of World Bank surveys in 79 developing countries, completed by local law offices. As for the OECD countries covered, comparable policy information was collected from various publicly available sources.

Within each subsector-mode, policy regimes are assessed in their entirety and map the bundle of applied policies into five broad categories (with associated scores): completely open (score of 0); virtually open but with minor restrictions (25); major restrictions (50); virtually closed with limited opportunities to enter and operate (75); and completely closed (100). After assigning a score to a subsector-mode, the scores can be aggregated into sector, modal or regional indices via a weighting mechanism. Sector weights are derived from the average share of a given services sector in value-added for an average industrialised country; they are constant across countries to ensure comparability.

6. World Economic Forum Global Competitiveness Indicators (GCI)

The Global Competitiveness Report 2014-2015 assesses the competitiveness landscape of 144 economies, providing insight into the drivers of their productivity and prosperity. The Global Competitiveness Indicators (GCI) are mostly perception-based, derived in large part from the annual WEF Executive Opinion Survey, which captures the opinions of business leaders around the world on a broad range of topics. The 2014 edition of the Survey captured the opinions of over 14,000 business leaders in 148 economies between February and June 2014. The components are grouped into 12 pillars of competitiveness; selected measures likely to have particular relevance for infrastructure investment are highlighted below.

Selected measures from WEF GCI	Elements captured by measure
1. Institutions	
Property Rights	How strong is the protection of property rights, including financial assets?
Judicial independence	To what extent is the judiciary independent from influences of members of government, citizens, or firms?
Favoritism in decisions of government officials	To what extent do government officials show favoritism to well-connected firms and individuals when deciding upon policies and contracts?
Wastefulness of government spending	How efficiently does the government spend public revenue?
Burden of government regulation	How burdensome is it for businesses to comply with governmental administrative requirements (e.g., permits, regulations, reporting)?
Efficiency of legal framework in settling disputes and in challenging regulations	How efficient is the legal framework for private businesses in settling disputes? How easy is it for businesses to obtain information about changes in government policies and regulations affecting their activities?
Transparency of government policymaking	How easy is it for businesses to obtain information about changes in government policies and regulations affecting their activities?
Efficacy of corporate boards	How would you characterize corporate governance by investors and boards of directors?
Strength of investor protection	Combination of the Extent of disclosure index (transparency of transactions), the Extent of director liability index (liability for self-dealing), and the Ease of shareholder suit index
2. Macroeconomic environment	
Government debt	Government debt as a percentage of GDP
Country credit rating	Institutional Investor's Country Credit Ratings assessing the probability of sovereign debt default on a 0–100 (lowest probability) scale
3. Goods market efficiency	
Effectiveness of anti-monopoly policy	To what extent does anti-monopoly policy promote competition?
Total tax rate	This indicator is a combination of profit tax (% of profits), labour tax and contribution (% of profits), and other taxes (% of profits)
Number of procedures and time required to start a business	Derived from World Bank Doing Business indicators
Prevalence of foreign ownership	How prevalent is foreign ownership of companies?
Business impact of rules on FDI	To what extent do rules and regulations encourage or discourage FDI?

4. Financial market development	
Availability of financial services	To what extent does the financial sector provide a wide range of financial products and services to businesses?
Financing through local equity market	How easy is it for companies to raise money by issuing shares on the stock market?
Soundness of banks	How would you rate the soundness of banks?
5. Market size	
Domestic market size index	Sum of gross domestic product plus value of imports of goods and services, minus value of exports of goods and services, normalized on a 1–7 (best) scale
Foreign market size index	Value of exports of goods and services, normalized on a 1–7 (best) scale
6. Business sophistication	**10.0%**
Local supplier quantity and quality	How numerous are local suppliers and how would you assess their quality?

II. Indices related to government capacity for infrastructure procurement and PPPs *(including quality of public spending)*

1. International Database of Budget Practices and Procedures

The OECD International Database of Budget Practices and Procedures 2012 contains the results of the 2012 OECD survey of budget practices and procedures in OECD countries (http://qdd.oecd.org/subject.aspx?Subject=7F309CE7-61D3-4423-A9E3-3F39424B8BCA). The 2007/2007 database contains the results of the 2007 OECD survey of budget practices and procedures in OECD countries, the 2008 World Bank/OECD survey of budget practices and procedures in Asia and other regions, and the 2008 CABRI/OECD survey of budget practices and procedures in Africa(http://www.oecd.org/gov/budgeting/internationalbudgetpracticesandproceduresdatabase.htm). Information on budget institutions from 97 countries is available, including 31 OECD member countries and 66 non-members from the Middle East, Africa, Eastern Europe, Asia, Latin America and the Caribbean.

The database provides budget practitioners, academics and civil society with a unique and comprehensive source to compare and contrast national budgeting and financial management practices from across the globe. More than 99 questions cover the entire budget cycle: preparation, approval, execution, accounting and audit, performance information, and aid management within developing countries. This has relevance for PPP management, although there are no elements specific to infrastructure sub-sectors.

2. Infrascope

Built by the Economist Intelligence Unit (EIU), the Infrascope index has been constructed for several regions to assess the capacity of countries to carry out sustainable public-private partnerships in infrastructure. The Latin America and Caribbean region has been covered, with financial support from the Multilateral Investment Fund of the Inter-American Development Bank, in 2009, 2010, 2012 and 2014. The region is therefore building some comparability over time. The Asian Development Bank also commissioned a study for the Asia and Pacific region in 2011 and 2014. The European Bank for Reconstruction and Development commissioned a study in regard to Eastern European 2012, and the World Bank Group has commissioned a study on Africa in 2015.All studies are available at https://www.pppknowledgelab.org/data . Yet shortcomings have been pointed to in the *Infrascope* methodology, notably that the country rankings do not flow directly from the underlying data, making the analytical process very resource intensive. Should the methodology be revised, it would have implications

for comparability of the rankings over time – but cross-region comparability would be enhanced. The elements covered by the current *Infrascope* are as follows (together with their weight in the overall score):

Measures from Infrascope Index	Weight	Elements captured by measure
1. Regulatory framework	**25.0%**	
Consistency and quality of PPP regulations	37.5%	How consistent are PPP laws and regulations for national-level PPP projects? Do regulations establish clear requirements and oversight mechanisms for project implementation? Must risk be allocated to different parties according to ability to manage them? Is there a clear system for compensating the private sector for changes in sector-specific economic conditions not foreseen during bidding?
Effective PPP selection and decision making	25.0%	Do regulations establish efficient planning frameworks and proper accounting of contingent liabilities?
Fairness/openness of bids, contract changes	12.5%	Do regulations for national-level concession projects unfairly favour certain project bidders and operators over others? Do regulations require and establish competitive bidding? Is a system established for independent oversight of such renegotiation procedures and conditions?
Dispute resolution mechanisms	25.0%	Are there fair and transparent mechanisms for resolving controversies between the state and the operator? Does the law provide technically adequate and efficient conciliation schemes? Must arbitration rulings proceed according to law and to contracts, without lengthy appeals?
2. Institutional framework	**20.0%**	
Quality of institutional design	66.7%	Existence and role of various agencies necessary for proper project oversight and planning at the federal level, such as a PPP board at ministerial level, a state contracting agency and a PPP advisory agency, and a regulatory agency for enforcement of project standards.
PPP contract, hold-up and expropriation risk	33.3%	Does the judiciary enforce property rights and arbitration rulings? Does the judiciary uphold contracts related to cost recovery? Can investors appeal against rulings by regulators, expedite contract transfer for project exit and obtain fair compensation for early termination?
3. Operational maturity	**15.0%**	
Public capacity to plan and oversee PPPs	25.0%	Are public capabilities for planning, design/ engineering, environmental assessment, oversight of national-level project service standards and conflict resolution robust? And do government officials have expertise on project financing, risk evaluation and contract design? Do financial authorities employ proper accounting practices when considering fiscal and contingent liabilities? Do they have a reputation for designing contracts that reduce post-bid opportunism?
Methods and criteria for awarding projects	12.5%	What is the track record of federal agencies for using competitive bidding and objective economic factors as the primary consideration in final project and contract awards?
Regulators' risk allocation record	12.5%	Has the allocation of risk between the state and private sector been successful for national-level projects in recent years? How effective has the use of guarantees and performance bonds for project risk-diversification been?
Experience with transport, water and electricity projects	25.0%	Number of transport, water and electricity concession projects in the past ten years in each country, as recorded by the World Bank's Private Participation in Infrastructure (PPI) database
Quality of transport, water and electricity projects	25.0%	Percentage distress and failure rate of transport, water and electricity concession projects over the past ten years, also using PPI database
4. Investment climate	**15.0%**	
Political distortion	25.0%	Evaluates the level of political distortion affecting the country's private sector

Business environment	25.0%	Evaluates the quality of the general business environment for infrastructure projects
Political will	50.0%	Evaluates the level of political consensus, or will, to engage private parties in PPPs
5. Financial facilities	**15.0%**	
Government payment risk	22.2%	Does the government regularly fulfil obligations for PPP contracts or use liquidity-guarantee schemes to reduce non-payment risk?
Capital market: private infrastructure finance	44.4%	How available and reliable are long-term debt instruments for infrastructure financing? Is there a developed insurance and pension market? Are interest-rate and exchange-rate hedging instruments available?
Marketable debt	22.2%	Is there a liquid, deep local currency-denominated, fixed-rate, medium-term bond market in marketable debt?
Government support and affordability for low income users	11.1%	Does the government provide subsidies that allow low-income users better access to water and transport services?
6. Sub-national	**10.0%**	
Subnational adjustment factor	100%	Evaluates whether infrastructure concessions can be carried out at a regional, state or municipal level, and the relative success and consistency of these frameworks

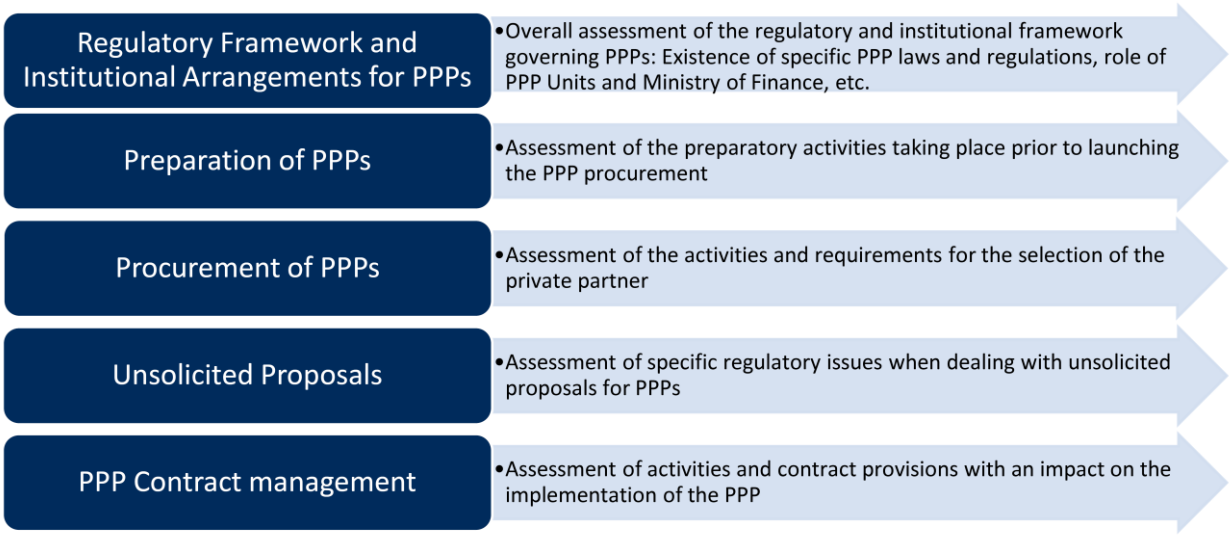
Related OECD data, which could provide the basis for complementary indicators if collected on a more systematic basis, includes: quantitative micro data on renegotiations of PPPs contracts in Latin America; and qualitative data on the Policy-Making Process in Infrastructure, derived from a questionnaire sent to 21 emerging economies and 14 LDCs on the main stages of the PMP in infrastructure – prioritisation and planning, execution, maintenance and monitoring.

3. World Bank Group PPP Benchmarking Study

The World Bank Group is developing a tool for benchmarking the readiness of countries to undertake public-private partnerships with a particular focus on the legal, regulatory and institutional framework for PPPs. This also builds on work of the WBG on benchmarking public procurement systems (previously submitted to the G20 Anti-Corruption Working Group). The analysis is based on two types of data points: *de jure* data points which assess the compliance of PPP regulatory frameworks with internationally recognised good practices in terms of efficiency, transparency, and accountability; and *de facto* data points which assess the current practice, as measured by surveys of respondents with significant and routine experience in the relevant transactions.

The pilot report of PPP Benchmarking Study, which was released in June 2015, presents policy findings across a survey of 10 countries: Cameroon, Ghana, Kenya, Nigeria, South Africa, Tanzania, Egypt, Tunisia, Colombia, and Peru. Over time, the number of economies surveyed should increase to reach 189 economies. The survey instrument, which was administered to more than 500 respondents in the pilot countries, includes a total of 50 prioritized questions that were organised under five thematic areas (see figure below). Data gathered covers questions with a high degree of granularity, such as: the existence of PPP Units and their role; which types of appraisal studies are conducted for PPPs; procedures and time required from public notice of a PPP to contract award; the existence and composition of bid award committees; the legal provisions for PPPs; and whether the regulatory framework provides for intervention by the Ministry of Finance, for prioritisation of investment projects, or for contract renegotiation (among many other features). The pilot study relies on a series of data points that are not aggregated at a topic level and are not ordered to produce a ranking of each country's performance. The data points presented may nonetheless be aggregated into indicators next year, with scores assigned to each economy measured, although rankings will not be prepared. Countries will be assessed against best practices.

Figure 6.1. Areas surveyed for Benchmarking PPP Procurement



4. OECD public procurement performance indicators

The OECD has developed a first set of indicators to measure the performance of public procurement systems and their evolution over time. These indicators focus on following four areas: 1. Efficiency of the public procurement cycle; 2. Openness and transparency of the public procurement cycle; 3. Professionalism of the public procurement workforce; and 4. Contract performance management. The indicators are currently being piloted by OECD countries.

Area	Indicator
1.Efficiency of the public procurement cycle Efficiency of the public procurement cycle refers to the proportionality between, on the one hand, costs and length of each public procurement contract and, on the other, the value of contract. It is possible to achieve efficiency gains through the use of e-procurement, and through consolidation mechanisms, such as framework agreements or consolidated contracts grouping more than one public buyer.	
	1.1. Use of contracting mechanisms
	1.2. Uptake of e- procurement
	1.3. Use of e-procurement per contracting mechanism or per low/high value procurements
	1.4. Savings
	1.5. Savings using framework agreements with second-stage competition
	1.6. Efficiency of the public procurement unit
	1.7. Level of unsuccessful public procurement processes
	1.8. Reasons for unsuccessful public procurement processes
	1.9. Public procurement award time
2. Openness and transparency of the public procurement cycle Openness is understood as fair and equitable treatment of participants in the public procurement cycle. According to UNCITRAL, transparency in public procurement involves five main elements: public disclosure of rules applied in the public procurement process; publication of public procurement opportunities; prior determination and publication of what is to be procured and how submissions are to be considered; visible conduct of public procurement according to the prescribed rules and procedures; and existence of a system to monitor that these rules are being followed and to enforce them if necessary.	
	2.1. Promoting competition: procurement procedure
	2.2. Promoting competition: number of bids and number of international bidders
	2.3. Transparency of public procurement information
3. Professionalism in the public procurement function	

Having a public procurement workforce that meets high professional standards and is capable of achieving strategic government objectives is essential. Key factors for the professionalism of the public procurement function include: sufficient staff in terms of numbers and skills, recognition of public procurement as a specific profession, certification and regular trainings, integrity standards for public procurement officials and the existence of a unit for analysing public procurement information and monitoring the performance of the public procurement system.	
	3.1. Number of public procurement officials according to the value and number of contracts and unsuccessful processes
	3.2. Level of trained public procurement officials
4.Contract performance management This dimension looks at the contract performance phase. Contract performance management activities can be grouped into three areas: delivery management (ensures that whatever is ordered is then delivered to the required level of quality and performance as stated in the contract), relationship management (seeks to keep the relationship between the supplier and the contracting authority open and constructive), and contract administration (covers the formal governance of the contract and any permitted changes to documentation during the life of the contract). By monitoring and documenting supplier performance, public officials are in a position to require corrective actions from suppliers when they are not in compliance with contract requirements. Performance monitoring could also provide a feedback loop in the selection of potential suppliers, when supplier past performance is assessed in the evaluation of bids and award of contracts. An element for measuring the performance of government in the contract management is whether suppliers are paid on time.	
	4.1. Are suppliers delivering the right thing?
	4.2. Are suppliers delivering at the right moment?
	4.3. Are there delays in payment?

5. Sub-national governance/finance and multi-level governance indicators

Multi-level governance of investment and sub-national finances

The OECD Toolkit on *Effective Public Investment Across Levels of Government* provides a set of indicators to support countries and regions in the implementation of the Recommendation, as well as data on trends/sectoral breakdown in sub-national public investment [http://www.oecd.org/effective-public-investment-toolkit/]. Work is currently being undertaken to elaborate indicators of vertical coordination of public investment across levels of government. The OECD also publishes a set of data on sub-national public finances, including sub-national revenues, expenditures and debt: http://www.oecd.org/regional/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2015.pdf. These data and indicators are relevant for the work linked to multi-level/sub-national governance challenges of infrastructure investment.

Regions at a Glance, Regional Well-Being and Metropolitan Database

The OECD Regional Database provides a unique set of comparable statistics and indicators on about 2 000 regions in 34 countries. It currently encompasses yearly time series for around 40 indicators of demography, economic accounts, labour market, social and innovation themes in the OECD member countries and other economies. Published every two years, Regions at a Glance (http://www.oecd.org/gov/regions-at-a-glance.htm) shows how regions and cities contribute to national growth and the well-being of societies. It updates its regular set of region-by-region indicators, examining a wide range of policies and trends and identifying those regions that are outperforming or lagging behind in their country. The report covers all 34 OECD member countries, and, where data are available, Brazil, China, Colombia, India, the Russian Federation and South Africa. It includes indicators on access to public services in urban and rural regions, on environmental sustainability of regions, and sub-national finances, which are useful for the analysis of sub-national challenges linked to infrastructure development.

The OECD has also developed indicators of regional well-being, which measure the quality of life in 362 OECD regions, based on nine dimensions central to well-being (including education, environment, safety, etc.: http://www.oecdregionalwellbeing.org/). The regional well-being indicators can be a useful tool to help prioritise investment at the sub-national level, including in infrastructure sectors.

The OECD Metropolitan Database (http://stats.oecd.org/Index.aspx?Datasetcode=CITIES) provides a set of economic, environmental, social and demographic estimated indicators on the 275 OECD metropolitan areas (functional urban areas with 500 000 or more inhabitants). They provide indicators at the functional scale of metropolitan areas, which is essential to take into account for effective infrastructure development (rather than administrative perimeter of cities).

III. Indices related to market openness, competitiveness, and regulation

1. OECD Indicators of Product Market Regulation

The Indicators of Product Market Regulation (PMR, http://www.oecd.org/eco/reform/indicatorsofproductmarketregulationhomepage.htm) measure the degree to which policy settings promote or inhibit competition in areas of the product market where competition is viable. A competitive product market environment that allows new firms to challenge incumbents, efficient firms to grow, and inefficient ones to exit, can help boost economic growth and living standards.

The OECD's PMR indicators are based on a large amount of information on regulatory structures and policies that is collected through a questionnaire sent to governments of the countries covered. They are based on "objective" data about laws and regulation as opposed to "subjective" assessments by market participants in opinion surveys. Hence, they capture the "de jure" policy settings. Coverage is of 34 OECD countries and 22 non-OECD countries.

The 2013 questionnaire contains roughly 1400 questions on economy-wide or industry-specific regulatory provisions. A bit more than 700 of the questions are used to compute the economy-wide PMR indicator and the indicators on sector regulation. All of these questions are closed questions that can either be answered with numerical values (e.g. the number of bodies that need to be contacted to start a business) or by selecting an answer from a pre-defined set of menu (e.g. the question whether a specific regulation exists can be answered with 'yes' or 'no'). The qualitative information is transformed into quantitative information by assigning a numerical value to each possible response to a given question. The coded information is normalised over a zero to six scale, where a lower value reflects a more competition (or investment)-friendly regulatory stance.

These indicators back many different analytical work-streams of the OECD, and feed into other composite indices – for instance the OECD Going for Growth Indicators, which involve regular cross-country structural surveillance of OECD member countries, as well as key non-member countries. The latter assessment is based on a set of around 50 quantitative indicators which measure the performance of countries in different policy areas affecting product market and labour market policies. In gauging performance, the focus is on GDP per capita, productivity and employment, while drawing on expertise of a number of OECD directorates. The overall Going for Growth score can help give an idea of the overall climate for productivity and investment in the economy.

Economy-wide regulation:

The economy-wide indicators of policy regimes have been estimated for 1998, 2003, around 2008 and 2013. These indicators summarise a wide array of different regulatory provisions across countries. The aggregate PMR indicator is the simple average across the three high-level indicators: state control, barriers to entrepreneurship and barriers to trade and investment. These are based on 18 low-level indicators. Like

the sector indicators (see further below), the economy-wide PMR indicator is constructed through a bottom-up approach as seen in the tree structures below. At each step of aggregation, the composite indicators are calculated as weighted averages of their components. Several of these components are directly relevant to infrastructure investment, while others can give a broader picture of administrative burdens for investors regardless of the sector of investment:

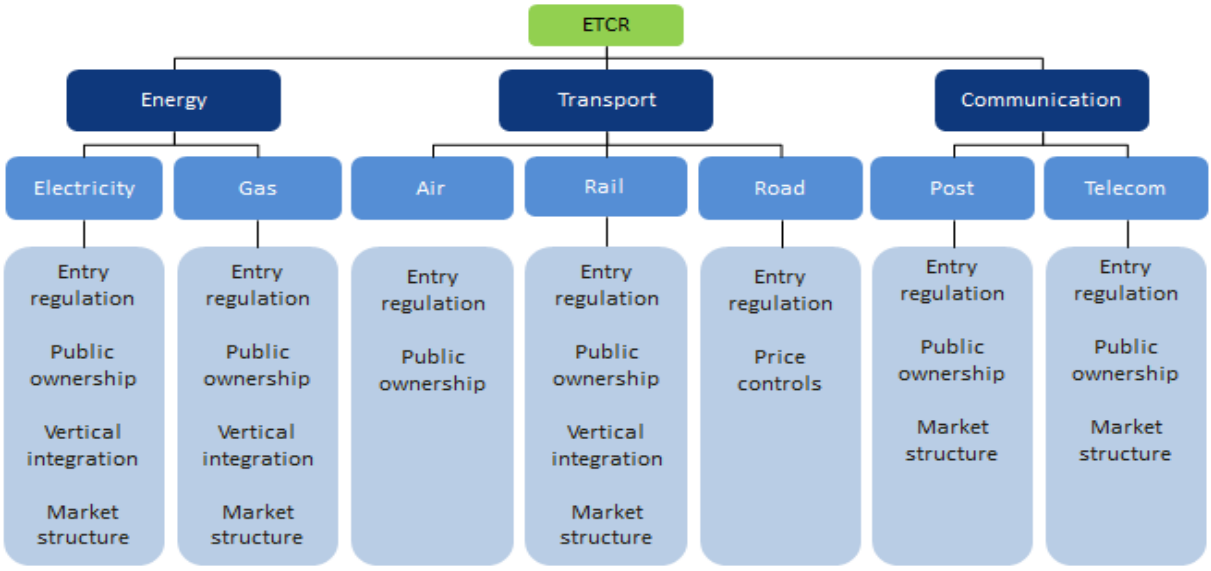
Selected measures from OECD PMR	Elements captured by measure
1. State control	
Scope of state-owned enterprises (SOEs)	Pervasiveness of state ownership across 30 business sectors measured as the share of sectors in which the state controls at least one firm
Government involvement in network sectors	Government stakes in the largest firms in 6 network sectors (electricity, gas, rail transport, air transport, postal services and telecommunication)
Direct control over business enterprises	Existence of special voting rights by the government in privately-owned firms and constraints to the sale of government stakes in publicly controlled firms (based on 30 business sectors)
Governance of state-owned enterprises	Degree of insulation of state-owned enterprises from market discipline and degree of political interference in the management of state owned enterprises
Price controls	Extent and type of price controls in 8 sectors (air transport, road freight transport, retail distribution, telecommunication, electricity, gas, water, professional services).
Command and control regulation	Extent to which the government uses coercive (as opposed to incentive-based) regulation
2. Barriers to entrepreneurship	
Licenses and permits system	Use of "one-stop-shops" and the "silence is consent" rule for issuing licenses and accepting notifications
Communication and simplification of rules and procedures	The government's communication strategy and efforts to reduce and simplify the administrative burden of interacting with the government
Administrative burdens for corporations	Administrative burdens on creating a public limited company
Administrative burdens for sole proprietor firms	Administrative burdens on creating an individual enterprise
Barriers in services sectors	Entry barriers in professional services, freight transport services and retail distribution
Legal barriers to entry	Pervasiveness of barriers to entry in 20 business sectors as a share of sectors in which there are explicit legal limitations on the number of competitors
Antitrust exemptions	Scope of exemptions from competition law for public enterprises
Barriers in network sectors	Entry barriers in 8 network sectors (gas, electricity, water, rail transport, air transport, road freight transport, postal services and telecommunication) and degree of vertical separation in 3 network sectors (gas, electricity and rail transport)
3. Barriers to trade and investment	
Barriers to FDI	Restrictiveness of a country's FDI rules in 22 sectors in terms of foreign equity limitations, screening or approval mechanisms, restrictions on the employment of foreigners as key personnel and operational restrictions (e.g. restrictions on branching and on capital repatriation or on land ownership). Based on the FDI Regulatory Restrictiveness Index.
Tariff barriers	Simple cross-product average of effectively applied tariffs
Differential treatment of foreign suppliers	Discrimination of foreign firms with respect to taxes and subsidies, public procurement, entry regulation and appeal and procedures
Barriers to trade facilitation	Recognition of foreign regulations, use of international standards and international transparency of domestic regulation

Sector regulation

The PMR indicators are complemented by a set of indicators that summarise information not by regulatory domain, but by sector in non-manufacturing sectors. Among these, the **Network Sector indicators** summarise regulatory provisions in seven sectors: telecoms, electricity, gas, post, rail,

air passenger transport, and road. For each sector, the indicators address issues including entry regulation, public ownership, market structure and vertical integration. The seven indicators of regulation in network sectors are aggregated into one indicator of regulation in energy, transport and communications (ETCR).

Figure 6.2. Regulation in energy, transport and communications (ETCR)



2. The governance of sector regulators

In 2013, the PMR dataset was enriched with indicators on the governance of the bodies that design, implement and enforce sector regulations. Data were gathered as part of the 2013 update of the PMR database for the regulators responsible for the following sectors: energy (gas and electricity), telecommunications and transport (rail, airports and ports). Data was collected through a questionnaire prepared with inputs from delegates of the OECD Regulatory Policy Committee and the Network of Economic Regulators (NER). The dataset covers 33 OECD members and 12 OECD non-members.

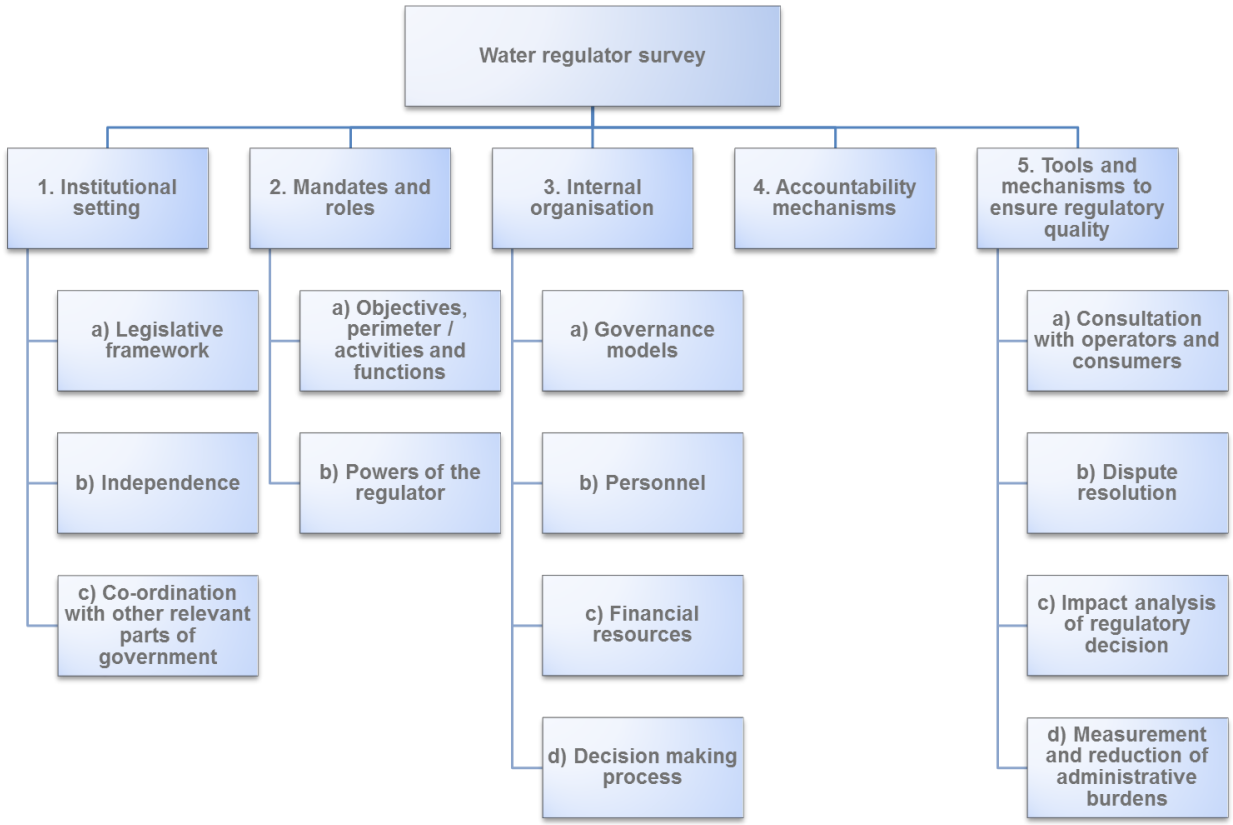
The indicators draw on the *OECD Best Practice Principles for Regulatory Policy: The Governance of Regulators* and assesses the independence, accountability and the scope of action of sector regulators. They reflect the *de jure* situation and do not capture cases were regulators conform to best practices although they are not legally bound to do so.

Measure of Regulatory Management	Selected elements captured by measure
Independence	This component is meant to capture the insulation of the regulator from influence by the government and representatives of the regulated sectors
Scope of action	This component aims to shed light on the range of activities that the regulator performs. It captures matters such as whether the regulator has a purely advisory role or decision making and enforcement powers, whether it can collect information from regulated entities by compulsory process, and whether it can issue sanctions and penalties in the case of non-compliance with regulatory standards.
Accountability	This captures the accountability of the regulator vis-à-vis various stakeholders, including the government, the regulated industry and the general public. It directly draws on the first, fourth, fifth and seventh governance principle, asking, for instance, to whom the regulator is accountable by statute, whether it collects and publishes

	various types of performance information, whether it publishes a report on its activities and whether it engages in public consultations and hearings.

To complement this information, the OECD carried out a survey of water regulators between September 2013 and September 2014 to investigate the following areas: i) institutional setting; ii) mandates, roles and core regulatory functions; iii) internal organisation; iv) accountability mechanisms; and v) use of tools and mechanisms to ensure regulatory quality. The questions were built based on the *OECD Best Practice Principles for Regulatory Policy: The Governance of Regulators*. The resulting database covers 34 regulators from 24 countries: 16 are located in Europe (12 in the European Union, the others mainly from Eastern Europe), 11 in America (6 in the US and 5 in South or Latin America), 2 in Asia (Indonesia and Malaysia), 4 in Oceania (Australia) and 1 in Africa (Mozambique). www.oecd.org/gov/the-governance-of-water-regulators-9789264231092-en.htm

Figure 6.3. The Water Regulator Survey



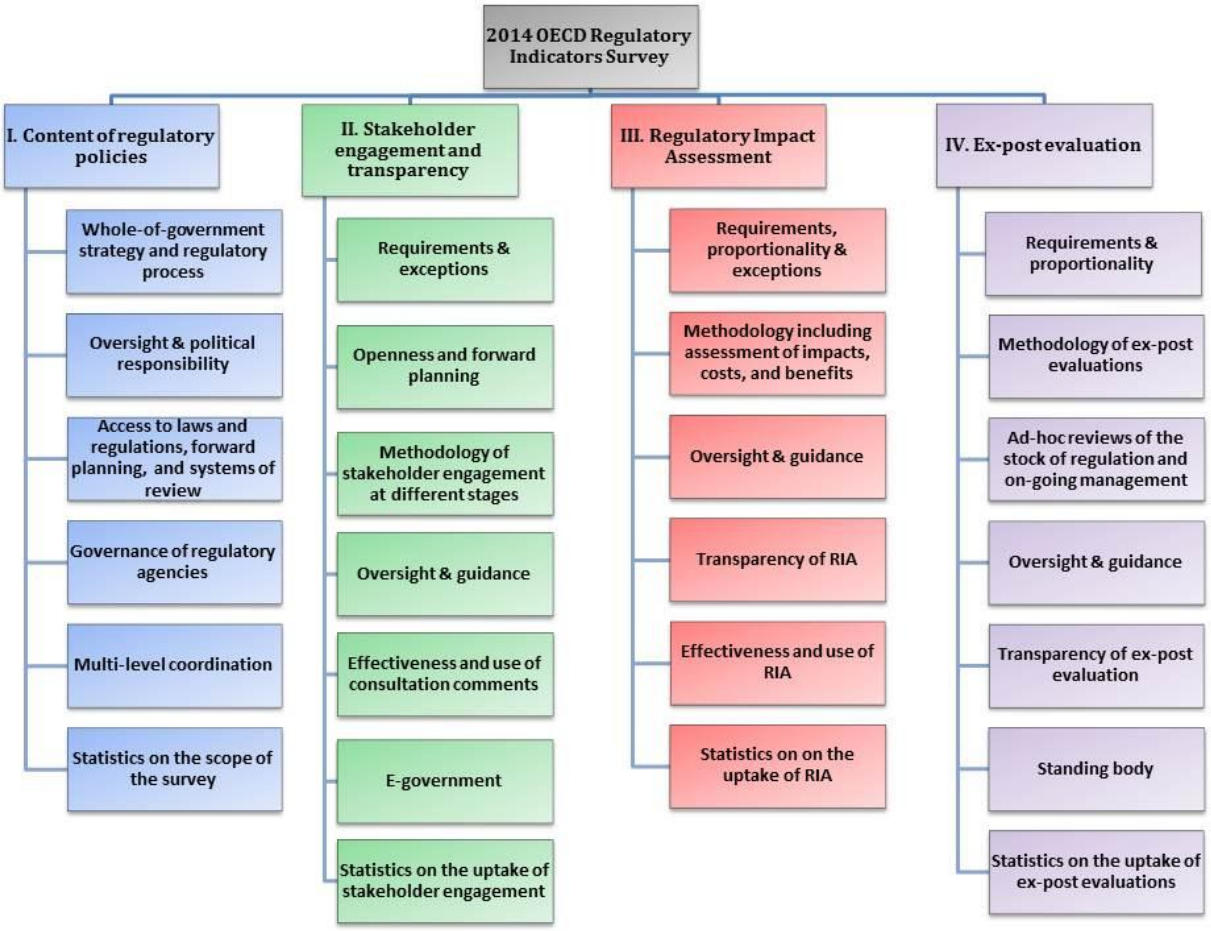
To further enrich these indicators and capturing also the de facto aspects of the governance of regulators, the NER is collecting some initial evidence on the actual practice of the governance of regulators through a questionnaire and a set of case studies prepared with inputs of the NER members. Findings from this data collection exercise and possible refinements to governance indicators will be available in the fourth quarter of 2015.

3. OECD Regulatory Indicators

The OECD has been collecting indicators on regulatory management regularly since 1998 (in 2005, 2008 and 2009). Almost 200 indicators identify leading regulatory management practices. They cover

critical regulatory management systems that support regulatory quality such as: whether countries quantify the expected costs and benefits of new regulations; whether they measure and reduce bureaucracy imposed on businesses and citizens; the institutional set-up in charge of the regulatory reform agenda. In 2014, the OECD extended its survey exercise to track the systematic uptake of good regulatory management practices across OECD countries, in particular the use of regulatory impact assessments for new regulatory proposals, stakeholders' engagement in the regulatory policy process and ex-post evaluation of regulatory impacts. The new OECD Regulatory Indicators were designed to assess the progress of OECD members in implementing the *OECD Recommendation of the Council on Regulatory Policy and Governance* (2012). www.oecd.org/gov/regulatory-policy/Indicators-RMS.htm

Figure 6.4. Structure of the 2014 OECD Regulatory Indicators Survey



4. World Bank Citizen Engagement in Rulemaking Project

The *Citizen Engagement in Rulemaking* project charts the experience of citizens and firms worldwide in learning about new business regulations and engaging with the government in developing those regulations. It also measures how governments assess the possible impact of new regulations in their country – including economic, social and environmental perspectives. The results of a pilot round of data collection, conducted during November 2014 to April 2015 and covering 186 economies, are now available (http://rulemaking.worldbank.org/).

To collect data, a short questionnaire was developed with input from academics, regulatory governance experts and government practitioners. The questionnaire was sent to more than 3500 experts in 190 economies worldwide. It consists of five core questions: (i) whether the regulator or rulemaking body gives notice of proposed regulations to the general public; (ii) whether it publishes the text of proposed regulations; (iii) whether it requests comments on these; (iv) whether it reports on the results of the consultation; and (v) whether it provides an assessment of the impact of proposed regulations. Each of these five core questions includes up to nine sub-questions asking further details on a particular practice.

It should be noted that the questionnaire is aimed at understanding how governments consult with stakeholders about regulations affecting *business activities* in particular; in this pilot round, there is no specific focus on infrastructure sectors. Nonetheless, similar approaches could be developed with an infrastructure-specific coverage, possibly in complement with the OECD indicators highlighted above.

5. OECD Competition law and policy indicators

The OECD Competition Law and Policy indicators are based on answers of national competition authorities to the Competition law and policy questionnaire circulated in the spring of 2013. Coverage is of 49 OECD and non-OECD countries.

The information collected from the questionnaire is regrouped in 4 indicators: 'scope of action', 'policy on anticompetitive behaviours', 'probity of investigation', and 'advocacy':

Measure of OECD CLP indicators	Selected elements captured by measure
1. Scope of action	
Competences	The indicator on competences is the simple average of two components: (i) exemptions for firms located outside the jurisdiction and (ii) exemptions for publicly-controlled firms.
Powers to investigate	This indicator is an average of six observations assessing whether it is possible to obtain information by compelling firms and third parties to cooperate, as well as by performing unannounced inspections
Powers to sanction and remedy	This indicator is an average of ten questions dealing with the powers to take action against anticompetitive behaviours and mergers. The actions covered by the indicator include imposing sanctions and remedies for antitrust infringements, blocking or remedying anticompetitive mergers, limiting the cost of the procedure by shortening the length of the investigative process and reducing the damages that such behaviours can cause by imposing interim measures.
Private enforcement	Measures the possibility for the damaged parties to receive financial compensation through private litigation, which can strengthen the ability of a competition regime to deter anticompetitive behaviours.
2. Policy on anticompetitive behaviours	
Policy on horizontal agreements	Provisions covering horizontal and vertical agreements are assessed by two separate indicators, computed as the simple average of respectively seven and four observations. A jurisdiction is scored 0 if horizontal/vertical agreements are prohibited. Competition regimes that carry out economic analysis of the effects of horizontal and vertical agreements and consider any efficiency they may cause are scored 0 (6 otherwise). Two de facto questions, which aim at measuring the enforcement of the competition law, are also included. If action has been taken against vertical or horizontal agreements at least once over the past five years, the jurisdiction is scored 0 (6 otherwise). The existence of a leniency programme is also considered.
Policy on vertical agreements	
Policy on mergers	This assesses whether an economic analysis is performed to determine when to clear or block a merger and whether efficiencies are taken into account in the assessment of the merger.
Policy on exclusionary conducts	Exclusionary conducts can be defined as business practices by a dominant firm that result in effective access of actual or potential competitors to supplies or markets being hampered or eliminated. Jurisdictions are also assessed on how exclusionary conduct

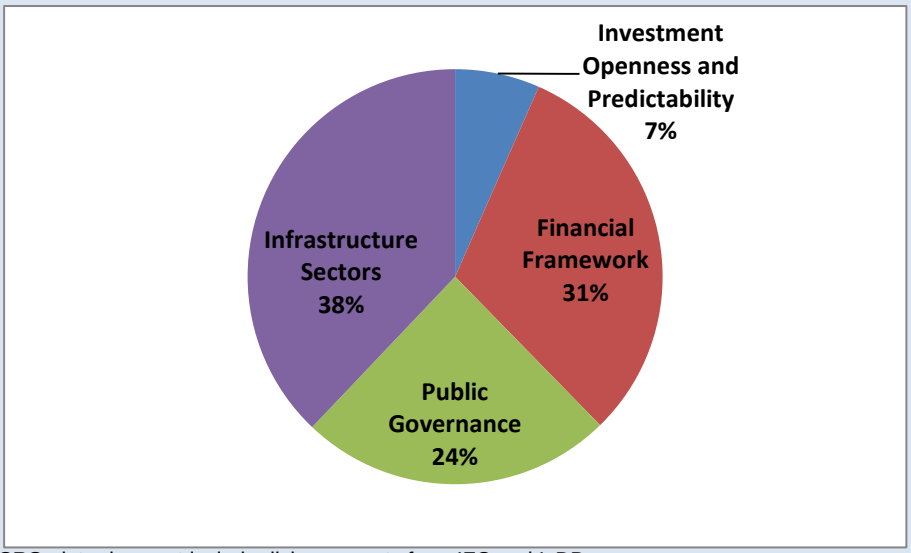
	is managed, including whether an economic analysis is performed and whether efficiencies are taken into account in the assessment of the exclusionary conduct.
3. Probity of investigation	
Independence	The overall score on this indicator is the simple average of six de facto components assessing whether the government has influenced the activities and decisions of the institutions that enforce competition law over the past five years.
Accountability	This assesses how much information on competition enforcement activities is made available to the public and whether all decisions can be subject to judicial review.
Procedural fairness	This indicator assesses whether parties under investigation have access to information on the procedures and have the possibility to present arguments for their defence.
4. Advocacy	
Advocacy	The 'advocacy' indicator is constructed by taking the average across seven questions, pertaining to: whether the competition agency or another institution can advocate competition at the central and local levels; whether new regulations that may have an impact on competition are assessed; whether market studies can be performed and whether they can include recommendations on how to improve competition; and whether the government is obliged to respond to the recommendation with reasoned opinions.

ANNEX 2: Distribution of official development finance to support reforms in the enabling environment for infrastructure investment

Although relatively small, disbursements by development partners for infrastructure have been growing considerably in the last years: Official Development Finance (ODF) increased at a compounded annual growth rate of 8% in the period 2008-2013. Furthermore, the proportion disbursed to infrastructure out of all sectors allocable by ODF (which includes other sectors such as health, education, agriculture, so on) has also grown from 24% to 29%. These trends show that ODF to infrastructure has been growing both in absolute and relative terms, which confirms the increasing importance accorded to infrastructure in development co-operation.

In 2013, the amount of ODF disbursed to LIDCs and LMICs to help strengthen the enabling environment for infrastructure investment amounted to roughly USD 14 billion. This amount was 14% of total ODF disbursed towards these countries for all types of allocable aid. Of the ODF for the enabling environment, two thirds was allocated to activities for the general investment climate, i.e. (i) investment openness and predictability 7%; (ii) financial framework 31%; and (iii) public governance 24% (see Figure 6.5) and the remaining 38% was for capacity building activities within ODF for the infrastructure sectors, with a dominant focus on energy.

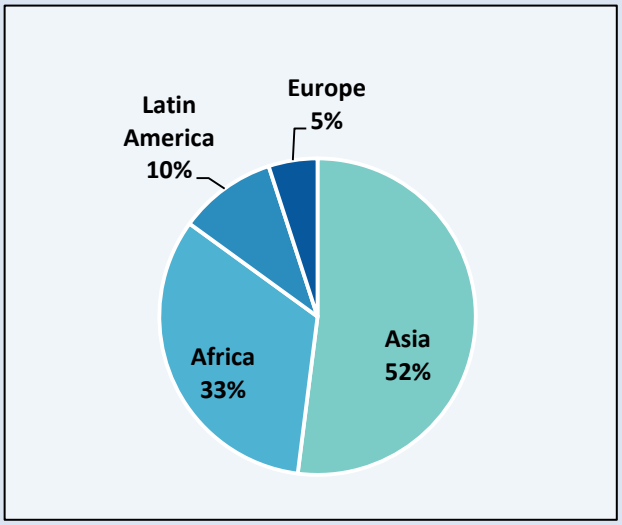
Figure 6.5. Distribution of ODF to the enabling environment, by policy area (2013)



Source: OECD CRS; data does not include disbursements from IFC and IsDB

In terms of geographical distribution, Asia received half the share of ODF disbursement for the enabling environment in LICs and LMICs in 2013, and Africa received a third (see Figure 6.6)—which could be expected considering the larger population and infrastructure needs in the poor countries of Asia compared to Africa. Latin America and Europe received 10% and 5% of total amounts, respectively.

Figure 6.6 Geographical distribution of ODF to the enabling environment (2013)



Source: OECD CRS; data does not include disbursements from IFC and IsDB

Of the 50 donors that report to the OECD's Development Assistance Committee (DAC), in 2013 the top 10 donors of ODF for the enabling environment included the multilaterals, G7 countries and Korea, together disbursing more than 80% of the total amount in 2013. Among these, the World Bank dominated with disbursements reaching almost USD 4 billion or roughly 30% of the total ODF for the enabling environment to LIDCs and LMICs in 2013 (see Figure 6.4). The top 10 LIDC and LMIC recipients of ODF for the enabling environment in 2013 were: Indonesia, Afghanistan, Myanmar, Morocco, Viet Nam, India, Nigeria, Guatemala, Bangladesh and Ukraine (see Figure 6.5).

These 10 countries received half of the total ODF disbursed to 94 LIDCs and LMICs for the enabling environment in 2013. Between the two income groups, LIDCs received 40% and LMICs received 60%. However, if Upper-Middle Income countries are taken into account, the LIDCs share would be 24%, LMICs 34% and UMICs 42%.

Figure 6.4. Top 10 Donors of ODF to LIDCs and LMICs for the Enabling Environment (2013)

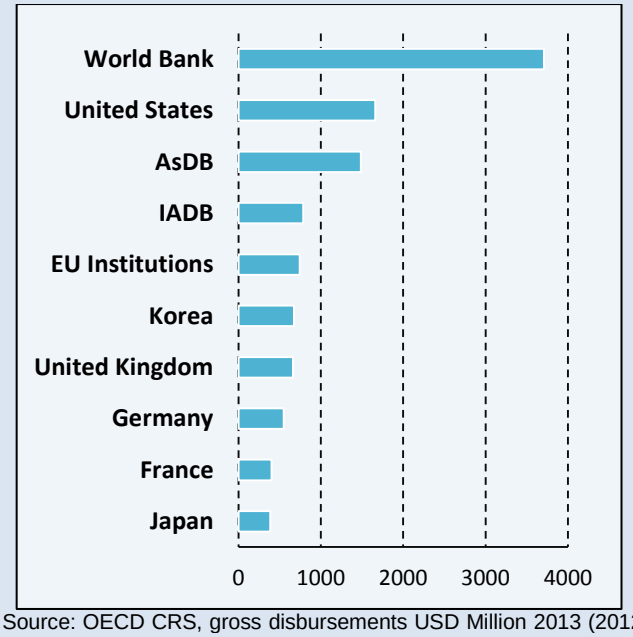
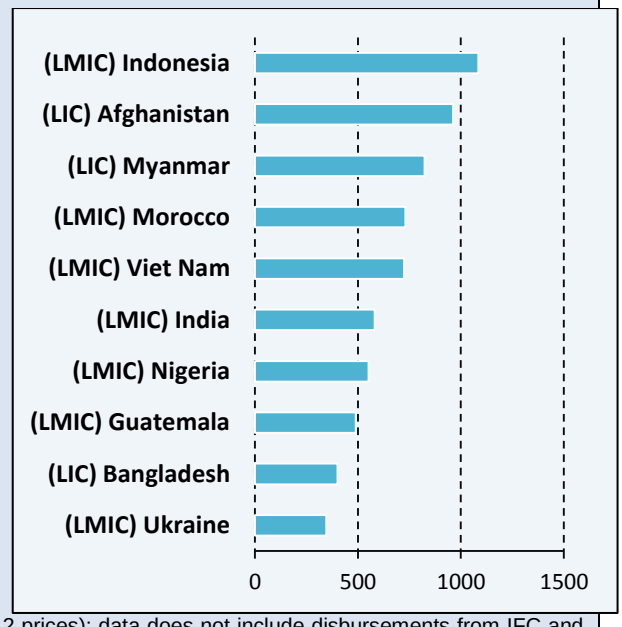


Figure 6.5. Top 10 recipients of ODF to LIDCs and LMICs for the Enabling Environment (2013)



Source: OECD CRS, gross disbursements USD Million 2013 (2012 prices); data does not include disbursements from IFC and IsDB.

ANNEX 3: OECD recommendations and principles relevant for public infrastructure governance

- OECD (2015) Recommendation of the Council on the Policy Framework for Investment
- OECD (2015) Recommendation of the Council on Public Procurement
- OECD (2015) Principles on Good Budgetary Governance
- OECD (2015, forthcoming), Principles on Digital Government Strategies
- OECD (2015, forthcoming, co-authored with Brazil and Italy), G20 Principles on Integrity in Public Procurement
- OECD (2014) Recommendation on Effective Public Investment Across Levels of Government
- OECD (2014), The Governance of Regulators, OECD Best-Practice Principles for Regulatory Policy
- OECD (2014) Principles on Governance of Critical Risks
- OECD (2013) G20/OECD High-level Principles of Long Term Investment Financing by Institutional Investors
- OECD (2012) Principles on Public Governance of Public-Private Partnerships
- OECD (2012) Recommendation of the Council on Regulatory Policy and Governance
- OECD (2010) Guiding Principles on Open and Inclusive Policy making
- OECD (2010) Recommendation of the Council on Principles for Transparency and Integrity in Lobbying
- OECD (2007) Principles on Private Participation in Infrastructure
- OECD (2003) Recommendation of the Council on OECD Guidelines for Managing Conflict of Interest in the Public Service
- OECD (1998) Recommendation of the Council on Improving Ethical Conduct in the Public Service Including Principles for Managing Ethics in the Public Service

Endnotes

[1] See report on "Fostering infrastructure investment: Lessons learned from OECD Investment Policy Reviews" (OECD, 2014; available at: http://www.oecd.org/investment/fostering-infrastructure-investment.htm)

[2] The nature of donor support in helping strengthen the enabling environment is detailed in information boxes according to each policy area identified below. In 2013 two thirds of official development finance (ODF) for the enabling environment went to activities for the general investment climate and a third to specific infrastructure sectors.

[3] September 2014 Report of the G20 Development Working Group on the Infrastructure Agenda, https://g20.org/wp-content/uploads/2014/12/12%20Report%20on%20infrastructure%20agenda%20and%20response%20to%20assessment%20of%20project%20preparation%20facilities%20in%20Asia%20and%20Africa.pdf

[4] See report on "Fostering infrastructure investment: Lessons learned from OECD Investment Policy Reviews" (OECD, 2014; available at: http://www.oecd.org/investment/fostering-infrastructure-investment.htm)

[5] The OECD *Policy Guidance for Investment in Clean Energy Infrastructure* benefitted from substantial inputs from the World Bank and UNDP; OECD, 2015f; G20, 2013.

[6] An example project in this area is the IFC's support to Tajikistan which helps reform and removes key regulatory obstacles that limit private investment while working with firms and governments to facilitate new investments. Outcomes of the programme include a new Law on Permit Systems, which reduces the number of permits from more than 600 to 86, and a new Law on PPP to promote greater investment in infrastructure.

[7] The OECD FDI Regulatory Restrictiveness Index takes stock of regulatory restrictions which prevent foreign investors from entering infrastructure markets of OECD countries, non-OECD G20 countries and adherents to the OECD Declaration on International Investment and MNEs.

[8] Sometimes the scope is limited to only acquisitions and sometimes to both acquisitions and greenfield projects; sometimes it applies only to listed companies or to investments in a specific company, most notably in former state monopoly holders; sometimes there is an overall cap of foreign investment in the entire sector, allowing foreign investors to compete in the marketplace, but only up to a certain limit.

[9] The OECD average is of 0.24 for scope of action, 0.18 for policy on anticompetitive behaviours, 0.36 for probity of investigation, and 0.89 for advocacy.

[10] Analysis of the effects of privatisation in developing countries for instance suggests that, in general, this has improved the economic performance of former SOEs (Parker and Kirkpatrick, 2004; Shirley and Walsh, 2001; Wallsten, 2001).

[11] Broad elements of good corporate governance include: separation of ownership and regulatory functions of SOEs; 'slope' of the playing field for SOEs (such that SOEs should not be exempt from the application of laws and regulations, including for financial disclosure, bankruptcy, anti-corruption and competition; nor have favourable access to finance); authority and capacity of SOE boards; and quality and enforcement of accounting and auditing standards for SOEs

[12] The focus is on public infrastructure, i.e. facilities, structures, networks, systems, plant, property, equipment, or physical assets – and the enterprises that employ them – that provide public goods, or goods that meet a politically mandated, fundamental need that the market is not able to provide on its own. This definition thus ranges from the direct provision of military installations to privately-owned and -operated utilities under government regulation, such as energy.

[13] Sub-national governments, defined as states, regions and municipalities, undertook 59% of total public investment in 2013 across the OECD area in terms of volume. Variations across countries are important, as sub-national public investment ranges from 13% in Chile to 88%% in Canada (2013a).

[14] A good example to illustrate the lower returns on small-scale public investment is transport infrastructure in metropolitan areas. In France, there are ten different transport authorities in a specific metropolitan area, reflecting the fragmented administrative perimeter of the area, which has resulted in an overall supply of public transport that falls short of people's needs: only 2% of the population living in this metropolitan area has high access to transport. Public transport failures also reduce inhabitants' mobility and limit the de facto perimeter of their potential job market, thus contributing to heightening inequalities with regard to access to employment (OECD, 2013b).

[15] Motivations might include the wish to capitalise on an existing subsidy, jurisdictional boundaries, the need to show decisiveness, or a response to special interest groups. It is also true that decision makers, donors and investors often prefer to invest in greenfield projects that will be seen as a tangible achievement, versus maintenance and renovation projects that are less visible.

[16] See the OECD Water Governance reviews of Mexico, Jordan and Tunisia (www.oecd.org/gov/regional-policy/country-reviews-on-water-governance.htm).

[17] http://www.oecd.org/daf/fin/private-pensions/G20-OECD-Principles-LTI-Financing.pdf

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