



G20/OECD Support Note on Diversification of Financial Instruments for Infrastructure

JULY 2016

This document contains the third and final version of the supporting note on diversified financing instruments for infrastructure. It has been revised based on several rounds of comments provided by the G20/OECD Task Force on Institutional Investors and Long-term Financing and the G20 IIWG meetings. This note was considered by the G20 Finance and Central Bank Deputies at their meeting held in Xiamen, China, who agreed to transmit it to the G20 Finance Ministers and Central Banks Governors and the G20 leaders at their July and September meetings, respectively.

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BACKGROUND

1. As highlighted in the communiqué from G20 Finance Ministers and Central Banks Governors (26-27 February 2016, Shanghai), there is strong interest in advancing the global investment agenda, with a focus on infrastructure development, both in terms of quantity and quality. This work undertaken by the G20 Investment and Infrastructure Working Group (IIWG) in 2016 involves three main pillars:

- Pillar 1: Strengthening the role of MDBs and calling on them to take joint actions to further support infrastructure investment.
- Pillar 2: Promoting global infrastructure connectivity through enhanced cooperation and synergy among regional/national infrastructure initiatives.
- Pillar 3: Exploring diversified financing approaches and fostering private financing for infrastructure investment.

2. Under Pillar 3, the OECD, building on earlier work and working in close collaboration with the WBG, IMF and other international organisations, developed a report seeking to identify ways to diversify infrastructure financing approaches. Special attention was paid to equity financing and capital markets development, engaging institutional investors, and exploring the potential of describing infrastructure investments as an asset class. Also, under Pillar 3, the WBG has prepared a policy note on local currency infrastructure bonds. Furthermore, the Global Infrastructure Hub (GIH) presented at the April Washington DC meeting of Finance Ministers and Central Bank Governors a report on knowledge sharing, with an emphasis on fostering infrastructure investments in developing countries.

3. The IIWG first met under the Chinese Presidency on 16 December 2015 in Sanya to engage its members on this work. In support to the IIWG, the G20/OECD Task Force on Institutional Investors and Long-term Financing (the "Task Force") met on 17-18 March to initiate this important work stream and discussed the outline of the guidance and supporting documents.

4. The Task Force agreed on the main directions of the outline and also highlighted that the financing tools suitable for infrastructure may not be applicable for SMEs, given the different nature of infrastructure and SME financing. In this regard, two separate supporting documents, led by the OECD, have been prepared for infrastructure and SME financing, respectively.

5. A progress report including the draft outline was sent to Finance Ministers and Central Bank Governors meeting in Washington DC in April, after agreement by the IIWG. This document contains a third version of the supporting note on diversified financing instruments for infrastructure. It has been revised based on several rounds of comments provided under the written process on the first and second version and feedback received at the 12th meeting of the G20/OECD Task Force on Institutional Investors and Long-term Financing held on 26 April in Singapore and the G20 IIWG meetings, held on 28 April in Singapore and on 2 June in Bali. As decided in Singapore, several more detailed recommendations were transferred to the supporting note from the guidance note.

6. This report involves new research but also substantially draws on IIWG member contributions and Task Force meetings, and inputs from other organisations such as the IMF (for section 1), the WBG and GIH. In Annex 2 to this document is included the previous addendum to the Supporting Note including selected examples of recommended policy steps to diversifying sources of infrastructure finance.

PREAMBLE - PRE-CONDITIONS FOR DIVERSIFIED, INTEGRATED FINANCING FOR INFRASTRUCTURE AND OTHER LONG-TERM INVESTMENTS

7. Investment is central to growth and sustainable development. Under the right conditions, investment raises overall output both through factor accumulation and innovation; that is, the introduction of new techniques and processes, which boost productivity and ultimately a country's standard of living. Many types of investments contribute to this outcome, ranging from human or intellectual capital to physical assets. This includes international investment, which has the potential to serve as a conduit for the local diffusion of technology and expertise such as through the creation of local supplier linkages and by providing improved access to international markets. The UN Sustainable Development Goals (SDGs) highlight building quality, sustainable and resilient infrastructure as a priority, particularly in developing countries. This includes improving connectivity to ensure inclusive development across regions and borders.

8. Historically, most investment has been undertaken by domestic firms or by governments, either directly or via the procurement process. Government provision, especially in certain sectors deemed of strategic importance, is expected to continue. However, given the scale of projected long-term investment needs, reflecting ageing infrastructure in developed economies, economic development and rapid urbanization in developing countries, and more fundamental development goals in lower income economies, along with the constraints on many government budgets, governments will need to partner with the private sector to meet some of these needs. Constraints on traditional sources of financing such as bank credit also point to a need for alternative sources of financing. Institutional investors and capital markets more generally are frequently mentioned in this context. Against this background, governments could be more innovative in structuring their funding involvement and consider market reforms and user charging to provide the revenue flows required by providers of private finance.

9. In fact there are a variety of equity instruments that can be used to mobilize institutional investors in infrastructure in both advanced and emerging economies. As seen in a report issued last year to the G20, there are examples providing evidence of the potential role that capital markets in emerging markets could have in bridging financing gaps¹. Debt markets also provide an opportunity to channel investor capital into infrastructure projects, providing that market instruments and mechanisms are available in local markets.

10. More generally, it is observed that the role of institutional investors as an alternative source of finance has not yet fully materialized in many emerging economies. This reflects the degree of involvement of governments and the private sector in delivery of basic infrastructure services. To an extent this is a reflection of the state of development of capital markets across the developing world. Indeed most of the examples found correspond to middle income countries where capital markets have already reached a certain level of development, and where the institutional investor base has achieved an important size both in terms of assets under management, in absolute levels, and in relation to the economy.

11. There are a number of pre-conditions for the investment process to work as intended. In particular, various factors can affect the provision of funds for long-term investment projects. Relevant factors exist in 1) the macroeconomic environment, 2) the financial environment, 3) the entrepreneurial and broader business environment, 4) at the level of individual investors and investment projects – the microeconomic environment, 5) the Institutional environment for infrastructure and 6) capital markets formation for infrastructure finance.

¹ See the discussion in the report for the G20 by the World Bank, IMF, and OECD on “Capital market instruments to mobilize institutional investors to infrastructure and SME financing in Emerging Market Economies”.

The macroeconomic environment

12. At the macro-policy level, sound fiscal and macroeconomic policies and monetary controls are necessary to support a sustainable level of aggregate economic activity. Macroeconomic and price stability is a necessary requirement for long-term savings mobilization, sustainable credit expansion, and for overall financial deepening. A macro-environment characterised by high or volatile inflation rates and volatile currency exchange rates impedes investing over a long-term horizon, both for domestic and foreign institutional investors. In this context, a key challenge for policymakers is to maintain a policy mix that avoids or minimizes macroeconomic imbalances and financial sector vulnerabilities that can thwart the growth process and impede investment. A stable economic backdrop is needed to provide the necessary conditions for the development of the financial sector and of capital markets that are capable of sustaining private investment.

13. Strong institutions and sustainable public finances are critical for attracting private financing. The IMF's new infrastructure policy support initiative helps countries improve the quality and, where appropriate, quantity of infrastructure investment, including by exploring the macro-fiscal implications of alternative forms of financing. Countries are thus encouraged to make use of the Fund tools, some developed with the World Bank, to improve (i) planning, allocation, and implementation of public investments; (ii) debt sustainability analysis, including the feedback from investment to growth; (iii) public-private partnership (PPP) project selection by systemically assessing a project's potential fiscal costs and risks; and (iv) medium-term debt management. These tools will help countries strengthen public investment management institutions and sustainably scale-up infrastructure investment and, as a result, lift potential output, boost near-term demand, support the sustainable development goals, and also attract diversified financing.

14. The elements and contours of a national governance framework for infrastructure, which is capable of providing the right infrastructure in a cost efficient, legitimate and affordable manner – are set out in the new OECD Framework for the Governance and Delivery of Infrastructure (OECD, 2015). This framework suggests that good governance is a necessary condition for delivering quality infrastructure, and provides guidance for countries on public governance of infrastructure assets. The objective of the framework presented in the paper is therefore to ensure infrastructure programmes that make the right projects happen, in a cost-efficient and affordable manner that is trusted by users and citizens to take their views into account.

The financial environment

15. The target is to develop well-functioning financial systems, which are important for economic growth because they are integral to the provision of funding for capital accumulation and for facilitating the allocation of resources to best uses, in part through the diffusion of new technologies. Increased capital accumulation can, in turn, have long-lasting effects on the rate of economic growth if it has spill-over effects to other factors of production or to productivity.

16. A well-developed infrastructure for financial services is required to facilitate this effort. Financial activities in turn require various transactions and information infrastructure to support the entire process, including an appropriate legal and regulatory system, as well as adequate supervision, tax laws, and societal and industry norms. This generally calls for reliable accounting, tax, and legal and judiciary systems, and various other measures attuned to the specificities of particular marketplaces. The establishment of a diversified financial services sector including asset management, banking, and insurance, along with professional services such as consulting, audit, and legal advisory contributes to a strong institutional environment.

17. All financial transactions, be they bilateral agreements or multilateral market-based arrangements, depend crucially on the enforceability of contracts, preferably at low cost and with minimum delay. This enforceability derives from the legal system, its institutions, procedures and rules. Among other functions, the legal system governs the linkages between market infrastructures, service providers, their products and activities, and their clients and customers.

18. Of particular interest for infrastructure are sound company law, contract and property law, securities law, laws governing consumer and investor protection, and for when things go wrong, insolvency or bankruptcy law. These bodies of law establish the basic framework within which financial institutions and markets work.

19. Establishing these framework conditions is necessary for the proper functioning of the financial system but may not be sufficient to encourage lenders to provide financing to certain types of SMEs, in particular, start-ups and very young firms that typically lack sufficient collateral or to firms whose activities offer the possibility of high returns but at a substantial risk of loss. Financing long-term investments is another especially challenging task.

The entrepreneurial/business environment

20. Investment activities more generally can be impeded by a range of other factors that render investors unable or unwilling to undertake real investments. They include restrictive product market regulations that reduce the ability of firms to undertake new activities or to enter new markets, especially across borders.

21. Other factors that can limit long-term investments may include the lack of robust rule of law and attractiveness of the regulatory environment. The quality of regulation is a major component of a successful climate for business and investment. When well-designed and enforced and sufficiently predictable, regulation contributes to investor confidence. But poorly designed or weakly applied regulation can retard responsiveness of business entities to economic signals and drive resources away from productive investments. This effect also includes impediments to entry into markets.

22. There can be other problems associated with the ability of government to plan and manage projects successfully. This is particularly the case for infrastructure investment. Surveys on the factors impeding the allocation of private sector financing of infrastructure projects and other long-term investments often cite a lack of clarity on investment opportunities available in the market, including a lack of transparency in the infrastructure sector, as a major contributing factor. In addition, the absence of a successful track record of related projects can also be an impediment. Other impediments to infrastructure and so-called “clean” or “green” investments may include inadequate regulation that internalises economic externalities into financing and investment decisions.

23. Effective competition is essential for a dynamic business environment in which firms of all sizes are willing to take risks and invest. Empirical evidence suggests that industries facing greater competition experience faster productivity growth, because competition allows more efficient firms to enter and gain market share at the expense of less efficient ones. In competitive markets firms succeed when they better satisfy their consumers. Furthermore, without competition, incumbent firms have less incentive to innovate. Newer products and processes allow firms to get ahead of the game. An environment of productivity growth, innovation and business success – to which competition typically contributes – is also conducive to investor confidence and, therefore, investment.

24. Data limitations also need to be addressed. The expected return and risk of long-term projects is a key consideration in the effort to attract private capital. Investors will be reluctant to commit funds to

investments if risks are not clearly understood and expected rewards are not adequate. This determination requires that relevant risk factors are transparently communicated to allow them to be properly assessed and priced. Hence, information sharing and disclosure are necessary requirements.

The microeconomic environment

25. Some challenges to long-term investment exist at the level of individual investors and investment projects. Many challenges relate to impediments to infrastructure investment, but there are also some that reflect access-to-finance problems of small and medium-sized enterprises (SMEs), in particular, in some cases in the area of risk capital, and others that pertain to the banking sector or in markets for corporate finance.

26. A necessary requirement for long-term investments on the part of institutional investors is a pool of long-term savings. Encouraging individuals to save enough for a long-enough period of time is a particular condition for ensuring adequate savings to finance retirement and many jurisdictions have adopted policies to promote long-term savings accumulation. While some individuals save adequately, and some perhaps save more than is strictly necessary, there are concerns that many others are not making adequate financial provision for their futures in general and for their retirement years in particular.

27. Some segments of the population may encounter barriers to saving, which can include limited capital for saving, limited access to financial markets, lack of familiarity with complex financial products, and in some cases, limited knowledge and understanding of basic saving and investment concepts. Levels of financial literacy are low in both developed and developing countries, making financial planning difficult for unsophisticated investors.

28. In more advanced financial markets, savings and investment products have become more complex, and individuals face more responsibility and risk for their own financial well-being. This is particularly the case for longer-term savings and investment products, where the opportunities to ‘learn by doing’ are infrequent, and the consequences of a wrong decision – or no decision at all – can have an adverse impact on individuals and their families, and ultimately on the social welfare system. In this context, reforming the education system, including research, as well as investing in human capital in an ambitious, stable and consistent way is a key step to raise the long-term potential of the economy.

29. Governments may also need to encourage their citizens to save more, or to save more appropriately by creating formal institutions to encourage saving, such as pension funds, and promoting diversification and other sound investment principles rather than relying on informal savings arrangements.

30. At the institutional level, the high up-front costs, lack of liquidity and long life of long-term investment assets require particular skills on the part of investors, both to understand the risks and to manage them effectively. Infrastructure assets can be particularly challenging in this respect. Some institutional investors have the in-house asset management capability and the wherewithal, given the size of their balance sheets, to take on the term and other risks associated with infrastructure and other long-term investments, but not all investors have this ability. Their ability to gain access to large-scale infrastructure assets is dependent on the existence of suitable pooling vehicles.

The institutional environment for infrastructure

31. Governments can influence political and regulatory risks by creating a more conducive institutional environment, including making credible commitments to honour the terms of the agreement, developing reliable guidance on development and construction costs, and tariff and demand definition and trends. According to the OECD Principles for Public Governance of Public-Private Partnerships three elements are useful to define governments’ support of PPP and therefore create a suitable institutional

environment: i) establish a clear, predictable and legitimate institutional framework supported by competent and well-resourced authorities; ii) ground the selection of Public-Private Partnerships in Value for Money; and iii), use the budgetary process transparently to minimise fiscal risks and ensure the integrity of the procurement process. This could also include restrictions or quantitative limits placed on the types of investments in institutional investor (such as pension fund) portfolios.

32. The quality of public governance correlates with public investment and growth outcomes, at both national and sub-national levels (OECD 2013). Poor governance is a major reason why infrastructure projects fail to meet their timeframe, budget and service delivery objectives. Infrastructure projects with deficient governance often result in cost overruns, delays, underperformance, underutilisation, accelerated deterioration due to poor maintenance, and, occasionally, in expensive “white elephants” and bridges-to-nowhere. In addition, evidence suggests that there are efficiencies that can be harnessed from a new and more comprehensive life cycle approach to public infrastructure (Productivity Commission 2014, Burger and Hawkesworth 2010; Flyvbjerg et al 2002). Indeed, the OECD guidance on overall budgetary governance (OECD 2015) recognises the distinct set of factors required to support public investment in infrastructure – including institutional capacity, public procedures, institutions and tools – and calls for the development of a coherent and integrated national framework.

33. Furthermore, in developing national frameworks, there is an opportunity to integrate sustainability issues into national and regional infrastructure roadmaps. The UN Sustainable Development Goals (SDG) are broad and ambitious, calling on countries to make tangible improvements to the lives of their citizens. Relating to infrastructure finance, principles related to forming partnerships for development cooperation and facilitating follow-up are noteworthy. Peer reviews and peer learning mechanisms across a range of policy fields – economic, investment, environment, energy, migration, education, development co-operation and more – play a key role in sharing learning and knowledge.

34. Along these lines are actions that individual investors are taking. Increasingly, institutional investors are adopting Environmental Social Governance (ESG) factors into their strategic investment and risk management processes. Such factors expand on traditional financial factors and analyse investments across multiple criteria. Given their usually large scale and long-term nature, as well as the involvement of many public and private stakeholders, infrastructure assets can be exposed to a series of environmental, social and regulatory risks. While the definition of “sustainable infrastructure” varies between investors and can include for example clean energy projects or social housing, the idea that governance practices and environmental considerations affect long-term risk is today widely accepted. Transparent parameters allowing for adequate monitoring of ESG performance is also important. Governments may have a role in promoting ESG practices amongst investors. OECD work on investment governance, the integration of ESG, and also the role of fiduciary duty in the investment governance process is currently in development.

Capital markets formation for infrastructure finance

35. Development of capital markets instruments for infrastructure requires that local capital markets are already developed, including the existence of a liquid government yield curve with long-dated maturities, well-functioning money markets, the availability of credit rating and research services, and payment systems, which together facilitate the flow of lending to infrastructure assets. The existence of a robust pipeline of underlying assets is also a necessary precondition for the mobilization of institutional investors to infrastructure via capital markets. Investors need the existence of a robust and continuous pipeline of instruments to justify the commitment of resources to enhance their risk-analysis teams.

36. The existence of deep local currency capital markets, including both in debt and equity, and projects with revenues that will provide investors with financial returns, are paramount in order to advance non-traditional sources of infrastructure finance. Although this is not possible for all countries, especially

those that lack a strong base of long-term savings. For countries with shallow local capital markets, attracting foreign investment is possible, although foreign investment can introduce long-term currency and other economic exposures that can be difficult to offset. Other issues related to capital markets are touched on in sections one and two of this report.

Summary

37. While investment activities have the potential to help achieve a broad range of public policy goals, including financial stability, debt sustainability, job creation, inclusive growth, higher living standards, competitiveness, sustainable economic development and green growth,² such investment is by its very nature forward looking and subject to various risks. Long-term investments can be particularly difficult to assess, given the longer time horizons over which agency problems and related weaknesses can develop, the greater uncertainty regarding investment returns, and the tendency towards illiquidity. This short section has identified a number of the pre-conditions to attract and sustain investor interest in such investments.

38. Long-term investors prefer legal, tax, and regulatory clarity, and well-established market infrastructures. Sound financing requires effective property rights and mechanisms for enforcing contracts, whether in the form of privately negotiated agreements or more standardised contracts, and a judicial framework within which collateral for lending is clearly defined, easily advanced, and securely realised in case of default. Impediments to long-term investment can include restrictive labour markets, fragmented capital markets, undeveloped entrepreneurial cultures, and restrictions on foreign investment and foreign participation.

39. Investment integrity requires proper and transparent choice, but within the limits of the diversification paradigm and with adequate regulation, disclosure, accountability and better financial education and training to facilitate proper risk assessment.

² See Principle 1.1 of the “G20/OECD High-Level Principles on Long-Term Investment Financing by Institutional Investors”.

**PREAMBLE - RECOMMENDATIONS ON PRE-CONDITIONS FOR DIVERSIFIED,
INTEGRATED FINANCING FOR INFRASTRUCTURE
AND OTHER LONG-TERM INVESTMENTS**

40. Amongst the pre-conditions to set the stage for higher levels of private sector finance for infrastructure and for diversification of infrastructure and SMEs financing instruments, countries may consider the following selected actions.

- *Ensure that financial, regulatory, and fiscal and monetary policies are supportive of economic activity and create a stable long-term investment environment free of financial vulnerabilities.*
- *Promote strong public investment management institutions and sustainable public finances and use of international guidance³.*
- *Establish a strong legal and institutional framework that supports an efficient microeconomic environment, transparency, well-functioning capital markets and ensures regulatory certainty and stability.*
- *Encourage the formation of pools of long-term savings.*
- *Promote the development of local currency capital markets (including equity, bonds and derivative markets), and their integration with their international counterparts.*
- *Establish a national infrastructure roadmap and long term government strategy; develop a robust and transparent pipeline of investable infrastructure projects and enhance infrastructure connectivity.*
- *Ensure sound governance of infrastructure investment, including the integration of Environmental, Social and Governance (ESG) factors and lifetime deployment.*
- *Promote Sustainable Development Goals, including resilient⁴, quality and connected infrastructure.*
- *Promote awareness and financial literacy on the variety of financial instruments and risk allocation mechanisms.*
- *Promote implementation of existing pre-conditions and international instruments related to the financing of infrastructure and SMEs.⁵*

³ Such as the IMF's new infrastructure policy support initiative and OECD Framework for the Governance of Infrastructure.

⁴ Including cost benefit analysis.

⁵ such as the G20/OECD High-level Principles on Long-term Investment Financing by Institutional Investors and their related Effective Approaches, the G20/OECD investment strategies, the G20 Diagnostic Framework for local currency bond markets and the G20/OECD High-level Principles on SME Financing.

SECTION I - DIVERSIFYING INSTRUMENTS AND OPTIMISING RISK ALLOCATION

Background on the subject of diversifying instruments for infrastructure finance

41. Infrastructure is funded by taxpayers or direct users and can be financed using different capital channels involving different financial structures and instruments. Some, like listed stocks and bonds, are market-based instruments with well-established regulatory frameworks. Banks, who have a long history of financing infrastructure projects, have traditionally been providers of infrastructure loans. As governments seek greater levels of private finance in infrastructure, efforts are underway to develop new financial instruments and techniques for infrastructure procurement. Recognising the complexity of infrastructure finance, analysing diversifying instruments aims to provide the foundation for the identification of effective financing approaches, instruments, and vehicles that could broaden the financing options available for infrastructure projects and increase as well as diversify the investor base. This also has the potential to lower the cost of funding and increase the availability of financing in infrastructure sectors or regions where financing gaps might exist.

42. Many investors nonetheless perceive a lack of suitable financing structures. This is particularly true in developing countries that may have shallow local capital markets. Only the largest investors have the capacity to invest directly in infrastructure projects. Smaller pension funds in particular require pooled investment vehicles. Collective investment vehicles have been available, such as infrastructure funds, but problems with high fees, potential mismatches between asset life and fund vehicle, and extensive leverage mean that these investment options may not be suitable for all investors. Yet the market is evolving to address some of the concerns. For instance, several newer unlisted equity funds in the market are offering longer investment terms, and competition from direct-equity investors is putting pressure on the fund management industry to lower fees.

43. This section draws on more extensive research in *Infrastructure Financing Partnering with the Private Sector*, which is being written in conjunction with this Support Note. This report covers an examination of new models and instruments for private sector financing of infrastructure including the changing nature of banks and their role in financing long-term investment. It will draw on prior OECD work including *Infrastructure Financing Instruments and Incentives: a Taxonomy* - a report delivered to the G20 in September 2015.

44. This section of the report is intended to provide a structured framework for understanding the range of instruments and vehicles for infrastructure finance that may complement traditional sources of finance such as commercial banks, MDBs and governments. Important elements covered in the preamble regarding the formation of local capital markets, in particular conditions that support infrastructure lending through project bond markets, bank loans, and securitisation, are necessary preconditions for many of the finance instruments reviewed in this section.

45. By providing a structured overview and description of instruments for infrastructure finance, this section can serve as a starting point for further discussion and analysis of infrastructure financing and related challenges, including the development of analysis on the advantages and disadvantages of these instruments and incentives and guidance on the various options for their use.

The need for diversifying instruments for the finance of infrastructure

46. In order to attract institutional investors to the full spectrum of infrastructure assets, such assets need to be structured as attractive investment opportunities, providing revenue streams and risk-return profiles that match investors' return expectations and liability structures. Several governments have introduced various mechanisms to support private capital funding public assets, changing the risk allocation between the private sector, taxpayer and consumer. To attract more private sector finance into infrastructure projects, policy makers will need to consider how material residual risks or other constraints can be mitigated so that potential transactions are seen as investable opportunities. Investors seek stability and certainty in the political and regulatory regime. Attracting increased investment can therefore be achieved through the provision of greater long term policy certainty. New models and instruments such as PPPs (or new forms of PPPs), funds formed by the public sector or as partnerships of public and private institutions could become important sources of risk sharing finance as well as organizational capacity and expertise in support of the financing of infrastructure projects.

47. The financial attractiveness of a project is reliant in part on its stage of development and whether its revenues are proven, compared to the type and extent of risks that are present at that stage. During the planning and construction phase, for most projects material investment risks arise from uncertain construction costs and revenue levels. At the brownfield phase, revenue levels and the stability of revenue profiles become clearer. Some projects are clearly and unequivocally commercially viable and these projects are typically able to attract private sector finance. However, for other projects where the rate of return may be insufficient to compensate private sector investors for the level and/or character of risk, various risk mitigation techniques and incentives may be employed to manage risks and/or enhance returns. Any government intervention to these ends may, however, generate unintended consequences, such as moral hazard and market distortions, which should be addressed ex ante in policy design to the extent possible. The following are some common characteristics of infrastructure assets that differentiate them from other assets:

- **Capital intensity and longevity:** Capital intensity, high up-front costs, lack of liquidity and a long asset life generate substantial financing requirements and a need for dedicated resources on the part of investors to understand and manage the risks involved. Infrastructure projects may not generate positive cash flows in the early phases, which may be characterised by high risks and costs due to pre-development and construction; yet they tend to produce stable cash flows once the infrastructure facility moves into the operational phase. Some infrastructure assets, where users do not pay for services, do not generate cash flows at all, requiring government intervention in order to create investment value.
- **Economies of scale and externalities:** Infrastructure often comprises natural monopolies such as highways or water supply which exhibit increasing returns to scale and can generate social benefits. While the direct payoffs to an owner of an infrastructure project may be inadequate for costs to be covered, the indirect externalities can still be beneficial for the economy as a whole. Such social benefits are fundamentally difficult to measure. Even if they can be measured, charging for them may not be feasible or desirable.
- **Heterogeneity, complexity and presence of a large number of parties.** Infrastructure facilities tend to be heterogeneous, with complex legal arrangements structured to ensure proper distribution of payoffs and risk-sharing to align the incentives of all parties. The uniqueness of infrastructure projects in terms of the services they provide and their structure and potential complexity makes infrastructure assets less liquid. Due to this complexity and heterogeneity, diverse instruments reflecting the various finance requirements of infrastructure assets are necessary.

Mapping of instruments and vehicles for the financing of infrastructure

48. Drawing from OECD research completed in the report *Infrastructure Financing Instruments and Incentives*, delivered to the G20 in September 2015, the section on diversifying instruments brings together a short summary from this more detailed background document, where descriptions of each instrument may be found.

49. Table 1 sorts instruments based on several dimensions. The left hand margin describes modes of investment, recognizing that there are broad asset categories (fixed income, mixed, equity), followed by principal instruments. Besides the fact that investors can be creditors or equity-holders, some investments, particularly PPP contracts and concessions, may have debt-like characteristics due to contracted cash flows. Thus for consistency, categories are defined by their nature, with the distinction drawn from whether an investor receives priority claims in corporate or project cash flows (creditor), mixed (creditor with equity participation rights), or residual claims to cash flows (equity).

Table 1. Instruments and vehicles for infrastructure financing

Modes		Infrastructure Finance Instruments		Market Channels
Asset Category	Instrument	Infrastructure Project	Corporate Balance Sheet / Broader Entities	Capital Pool
Fixed Income	Bonds	Project bonds	Corporate bonds, Green bonds	Bond indices, Bond funds, ETFs
		Municipal, Sub-sovereign bonds		
		Green bonds, Sukuk	Subordinate bonds	
	Loans	Direct/Co-investment lending to Infrastructure project, Syndicated project loans	Direct/Co-investment lending to infrastructure corporate	Debt funds (GPs)
Syndicated loans, Securitised loans (ABS), CLOs			Loan indices, Loan funds	
Mixed	Hybrid	Subordinated loans/bonds, Mezzanine finance	Subordinated bonds, Convertible bonds, Preferred stock	Mezzanine debt funds (GPs), Hybrid debt funds
Equity	Listed	YieldCos, Closed-end funds	Listed infrastructure & utilities stocks, Closed-end funds, REITs, IITs, MLPs	Listed infrastructure equity funds, Indices, Trusts, ETFs
	Unlisted	Direct/Co-investment in infrastructure project equity, PPP	Direct/Co-investment in infrastructure corporate equity	Unlisted infrastructure funds (GPs)

Source: OECD (2015c)

50. Further along the top of Table 1 are the finance instruments followed by market channels. There are essentially two ways to finance infrastructure through private (non-bank) investment: stand-alone infrastructure projects, or through corporate balance sheet finance and other balance sheet-based structures. Project finance is recognised as the most common method used in the private financing of new

infrastructure projects, and has seen a significant amount of innovative financial instruments, vehicles, and financing techniques. In particular, the use of project bonds, the formation of lending consortia and syndicates, and institutional investment through fund structures or direct investment are noteworthy trends.

51. From an investor's perspective, the instruments and pooling mechanisms selected for investment will depend on the nature of the asset (debt, equity, listed or unlisted), regulatory and tax considerations, and on how the investors have defined and allocated infrastructure in their portfolios, based on their asset/liability framework. Fees and transaction costs are also important factors affecting investor preferences. Other considerations are diversification and level of investor sophistication: small investors with limited resources and small amounts of capital allocated to infrastructure are limited to capital pool channels and corporate investments while large funds may be able to commit capital directly to projects.

52. Together, loans and bonds form the largest categories of infrastructure finance, mirroring the broader fixed income markets; global debt markets are the deepest capital markets in the world. Debt instruments can be structured to have long-term maturities that extend over the life of long-term assets. Debt financing can be provided through multiple instruments; debt instruments can take the form of direct loans held on the balance sheets of financial institutions or may be structured for resale to investors or distribution in markets, be it private markets (such as private-placement debt) or public markets through registered corporate and government bonds. Furthermore, financiers of infrastructure projects can take advantage of clientele⁶ effects in debt markets: issues can be tailored to fit the demands and preferences of certain investors such as pension funds and insurance companies thereby broadening the appeal of infrastructure finance to a larger potential pool of capital.

53. Within loan markets, now that commercial banks are once again becoming more active in infrastructure lending, the possibility of syndicating loans for resale and the formation of lending consortia has the potential to expand the role that banks can play in acting as lead underwriters, while also engaging with institutional investors as sources of capital.

54. Hybrid instruments such as mezzanine finance are debt instruments with equity-like participation, thus forming a bridge between debt and equity instruments. Mezzanine debt is sometimes provided through MDBs or NDBs but is also increasingly part of debt funds and specialised strategies in infrastructure lending. Within corporate finance, convertible bonds, subordinated debt, and preferred stock provide credit support to senior debt instruments due to their loss absorbing capacities, but also offer a higher return potential due to the greater amount of credit or equity risk, without necessarily diluting existing equity holders. Hybrid instruments can be used in instances where financing gaps exist and a stronger capital base is needed to support senior debt issuance.

55. Sukuk may be issued by governments, MDBs, NDBs, or private entities such as corporations. There are multiple structures that can include project finance sukuk, asset-backed sukuk, sale/lease-back structures or rent/income pass-throughs. The asset-backed nature of Islamic financial instruments make sukuk well suited to infrastructure assets. Generally the underlying principal of such instruments are a sharing of risk and return amongst the parties in a transaction – cash flows are determined by incomes generated by the asset, and the return to investors is linked to the performance of the asset. In effect, sukuk resemble Public Private Partnerships due to this risk- and return-sharing arrangement.

⁶ Certain investors have preferred habitats and may be willing to pay more for certain securities or instruments than others. For instance, pension funds that require instruments to hedge long-dated liabilities are a natural fit for long-dated fixed income instruments. Strong demand from a certain group of investors could affect the price of the asset. Debt instruments can therefore be tailored to the specific demands of certain investors.

56. Equity finance refers to all financial resources that are provided to firms or project entities in return for an ownership interest, including future cash flows generated by the asset. With respect to infrastructure investments, ownership may not always be direct or control may not be entirely with the providers of equity capital. Instead risk sharing and control arrangements are sometimes determined through contracts such as concessions or long-term leases. But in most cases, equity investors are exposed to the asset-specific risk, as no security is provided by the investee, and the investment return is determined by the success of the asset. Investors may sell their shares in the firm/project, if a market exists, or they may get a share of the proceeds after costs including debt are paid out, if the asset is sold. Equity investors are crucial in the financing of infrastructure investments as the providers of risk capital to initiate a project or refinancing.

57. Equity investors are interested in maximizing total return on equity – in the case of infrastructure, these objectives can be met through maximizing dividend yield since many projects lack a strong growth component. Greenfield assets or “non-core” brownfield assets that require refurbishments or upgrades may provide some opportunities for capital appreciation. Other investor requirements (private equity) such as exit strategy are important to consider.

58. The main categories of equity finance are public equity (listed) and private equity (unlisted). Whereas public equity concerns companies or funds where shares are traded and listed on a stock exchange, private equity investors provide capital to unlisted investment vehicles and projects. Also, while public equity investors are not generally involved in the management of the company, asset managers and private equity financiers acting as agents can be heavily involved with or assist the owners or managers in the development and management of the asset.

Capital structure matters – the mix of debt and equity

59. Equity typically constitutes between 10-30% of an infrastructure project capitalisation; however, during periods of financial stress such as the credit crisis, creditors may request higher levels (Weber and Alfen 2010). From the perspective of equity holders, they prefer to keep the share of equity as low as possible, which limits their liability and increases the return on capital employed (leverage effect) (ibid). Strategic investors also have limited amounts of capital to invest and generally prefer to diversify exposures across multiple assets in order to minimise their financial risk exposure to any one project. Project sponsors and providers of debt have clearly opposed objectives regarding the level of equity financing: lenders prefer higher levels of equity to ensure adequate credit support, while equity holders wish to limit dilution (ibid).

60. While some amount of leverage is desirable to equity holders, it can also increase financial risk and threaten the viability of the asset. Leverage has the effect of magnifying the returns to equity holders, but also magnifying financial risks by increasing the volatility of earnings – essentially as interest expense becomes larger, the risk of revenues falling short to meet interest expenses increase. This is especially true in project finance and private equity style ownership of assets. As the limits of financial engineering are reached, the advantage drops away (Helm and Tindall 2009). Infrastructure corporates which have portfolios of assets benefit from the diversification of revenue streams which can help to smooth earnings before debt service.

61. This introduces the concept of an “optimal” capital structure. The after tax cost of debt is low compared to the cost of equity, which can lower the weighted average cost of capital (WACC). This is a counter-intuitive quality of project finance which challenges Modigliani and Miller’s theory that capital structure has no effect on firm value (Blanc-Brude 2013). Although this does eventually diminish – as more debt is added, the risk to equity and thus the cost of equity increases. An optimal debt-to-equity ratio will vary depending on the circumstances of each individual asset. Balancing the benefits of debt against

the risk of financial leverage is paramount in order to fully benefit from debt finance. The use of debt and equity is therefore self-reinforcing: overall financial sustainability of an infrastructure asset can be improved when both debt and equity are used at optimal levels.

62. For policy makers, it is important to note the inherent biases in using debt finance. Due to the fact that interest is a before-tax expense, this can lead to a preferential treatment of debt finance as opposed to equity (also called the tax shield). Changes in tax policy can dramatically affect the capital structure and financing decisions of infrastructure managers, thus corporate taxation that is in-line with international standards following recommendations from the OECD Base Erosion and Profit Shifting (BEPS) initiative are recommended.⁷

63. There are also benefits to using debt besides capital structure optimisation. The contractual nature of debt incentivises debt holders to monitor managers and the risks that they take. Additionally, debt covenants provide lenders advance warning of deteriorating financial performance and limit the risks that managers can take, acting to protect the financial viability of a project or company. Non-financial covenants linked to regulatory contracts, concessions, permits, etc. can build-in contractual protection for asset owners and mitigate certain regulatory, political, or financial risks. For instance, the cancelling of a regulatory contract can trigger a technical default, forcing stakeholders to negotiate a restructuring. Some studies have shown that governments are less likely to default against debt holders as opposed to equity investors, even when the same parties hold both debt and equity instruments, which can protect overall project viability (Wells and Gleason 1995, Sawant 2010).

Alternative funding models

64. Adopting innovative financing approaches will assist with the provision of infrastructure and in effectively allocating the risks and returns from a project. A key aspect is flexibly determining the most effective capital structure and mix of private and public funding through the life cycle of the project from greenfield into the brownfield phase. Innovative financing approaches involve the government adopting a flexible approach in deciding the form of its financing involvement to crowd in the private sector in funding major infrastructure projects. This can include using means other than providing traditional government grant funding such as by using loans, loans that convert into an equity holding, equity, debt or credit enhancements. Innovative government financing approaches can enable other investors (including institutional investors) to be brought into a greenfield investment after the construction or other risks have been reduced. It thereby allows the government to recover some or all of its funds and create additional fiscal room to deploy (effectively recycling) these funds into other government activity, whether infrastructure or other services.

65. Australia's Asset Recycling Initiative (the ARI) facilitates state governments' reinvesting capital funds locked on their balance sheets in the form of infrastructure assets by monetising assets and deploying proceeds directly into new infrastructure assets. This allows these new assets to be funded at no net additional cost to the budget fiscal balance. The ARI encourages state governments to invest in new infrastructure that enhances the long term productive capacity of the economy and which has a clear net positive benefit. It provides additional opportunities for private investment in the divested assets and is actively structured to encourage private co-investment in the new assets.

66. Other innovative sources of infrastructure funding such as land value capture, special assessment districts, tax increment financing, joint development, could be considered. Land value capture, in particular, has the potential to facilitate the financing of greenfield assets where returns are not yet provided through operations. Such a technique recognises the economic impact that infrastructure can have

⁷ <http://www.oecd.org/ctp/beps.htm>

beyond the project itself, by raising property values of adjacent real estate, cost-free to those benefitting. Land value capture attempts to monetise some of the value creation of rising property values within the infrastructure financing scheme.

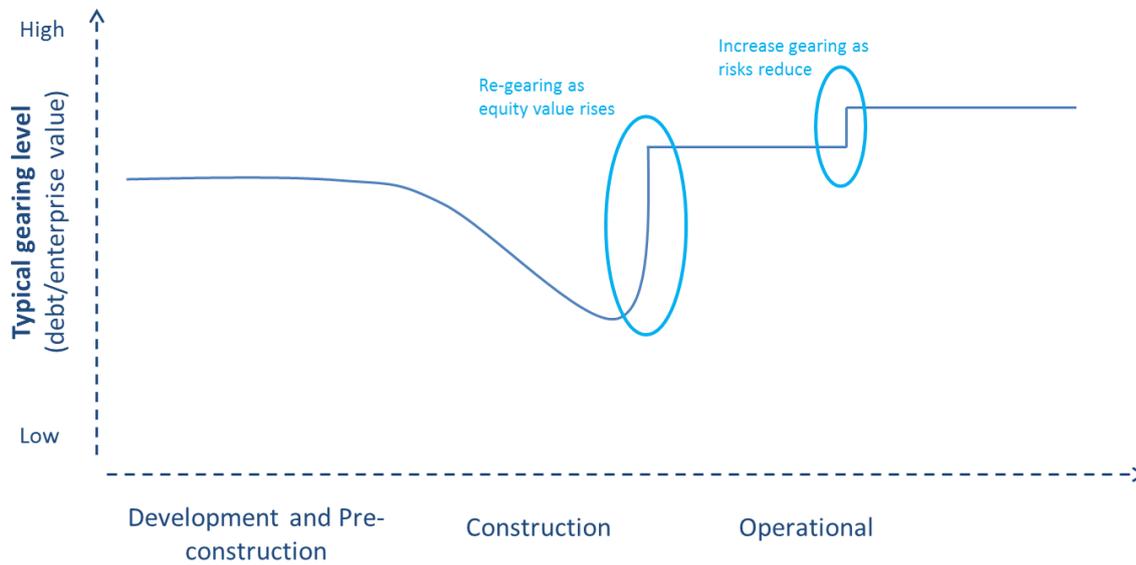
Risks and capital structure over the project life cycle

67. Risks involved in infrastructure investment vary considerably during the typical life of a project (see Table 3, Section III). Overall there are significant differences in project risk between greenfield and brownfield projects. In general the former are considered to be riskier given the construction risk involved, the lack of revenues during the construction period, and uncertainty about revenue levels once it is operational. These risks can vary significantly depending on the category of infrastructure involved, whether social infrastructure or economic infrastructure, and even within these categories, risks can vary by project. Other risks, including financial and regulatory risks may also vary depending on the category and type of infrastructure. As a result, the appetite of institutional investors for different types of projects varies. In general institutional investors are reluctant to invest in greenfield projects given the various risks involved.

68. Figure 1 displays a typical development cycle of an infrastructure asset from early stages to operational stages. Early periods are characterised by higher risks and lower gearing, underscoring the importance of equity finance or transitional government or MDB financing. As the project reaches milestones, there are potential opportunities to refinance as equity values increase and construction loans mature. Furthermore, governments and MDBs can adopt innovative approaches to financing early project phases, such as the use of debt and debt instruments that convert into equity. Such a transfer of financial ownership to private investors provides a return of which provides a return of capital to initial lenders which may be recycled into other infrastructure projects.

69. Private equity-style investment in early stage, higher-risk assets, where potential payoffs are larger, may be suitable for traditional fund structures where investors seek an exit after a few years. With few business models currently designed for financial investors in greenfield assets, exploring the use of infrastructure funds, platforms, and co-investment with other strategic sponsors such as construction companies may be an option to increase private financing.

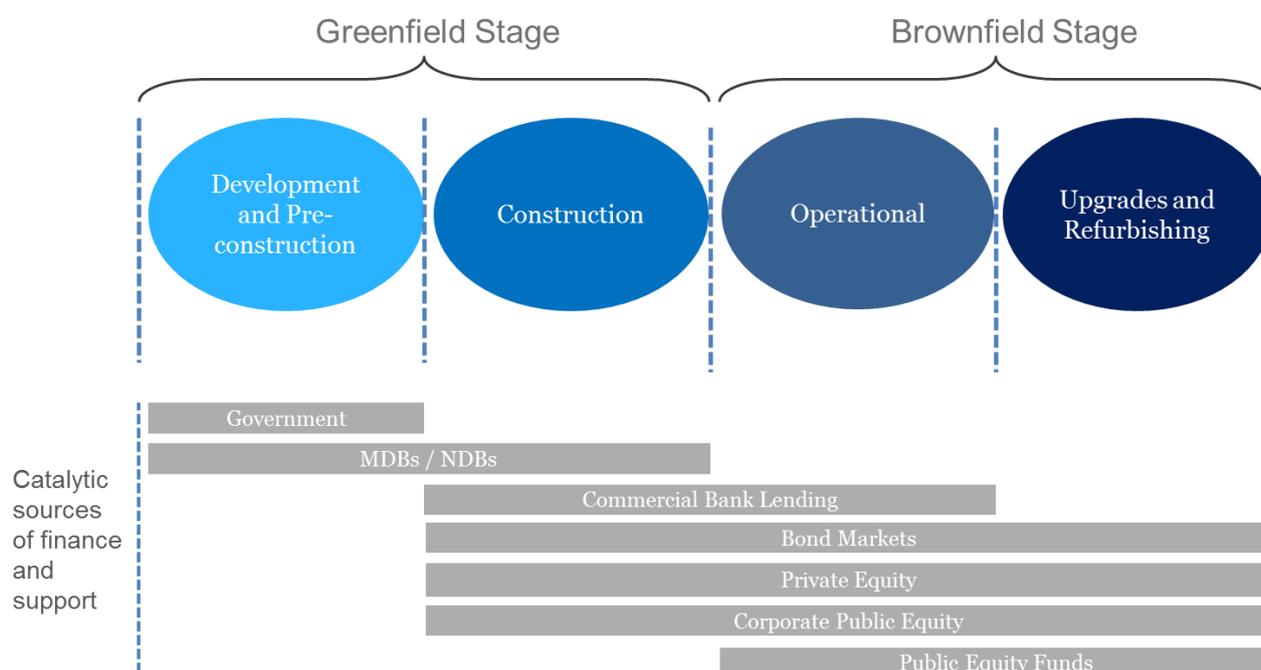
Figure 1. Infrastructure project development cycle



Source: OECD based on RREEF

70. Figure 2 describes the infrastructure project lifecycle and the sources of finance and support that can play a catalytic role in initiating a project or refinancing an existing asset. Early in the project lifecycle, governments, MDBs, and NDBs play an important role in attracting subsequent financing for a project, partnering with project sponsors (which can include financial sponsors such as institutional investors), and developing funding models, including the judicious use of risk mitigation techniques and incentives, to secure the long-term economics of the asset. In later stages as projects mature, different sources of finance come into play. These definitions are not absolute – for example there may be fewer instances where project bonds have been used to finance infrastructure construction – therefore the figure is meant to highlight which sources of finance have a demonstrated and crucial role during each stage.

Figure 2. Catalytic sources of infrastructure finance



Source: OECD

Other sources of finance for infrastructure

71. While there is a need for large-scale investment in developing markets, smaller-scale infrastructure projects can have a large impact on communities, particularly related to poverty alleviation. Crowdfunding, impact investment⁸, and grants are all potential sources of finance for small-scale infrastructure such as education, health, water, and small/micro electricity grids. Foundations and endowments are leading institutional investors in the field of impact investment and more broadly with combining desired social outcomes with finance. Building donor networks and linking impact investment finance with local management and government cooperation has the potential to increase infrastructure finance in developing countries.

72. Recent data collected through the OECD Survey of Large Pension Funds and Public Pension Reserve Funds indicates that impact investment is not just limited to foundations and endowments. Twelve out of the total 77 funds that submitted a completed questionnaire reported exposure to social investments. All funds were based in the OECD region, with the exception of Argentina. Some of the instruments reported included social impact bonds and development impact bonds.

⁸ Investments with an explicit expectation of a measurable social, as well as financial return; this also includes investment that contributes to the general public benefit.

SECTION I - RECOMMENDATIONS ON DIVERSIFYING INSTRUMENTS AND OPTIMISING RISK ALLOCATION

73. Recent decades have seen a shift towards greater involvement of the private sector in the delivery and financing of infrastructure reflecting budgetary constraints and a desire to introduce more competitive and efficient market structure. The use of private capital is intended to transfer some risks from the public to the private sector and provide other commercial benefits to offset the higher cost of private capital. The allocation of risks between private parties and governments will impact the optimal equity and debt financing mix and consequently the cost of capital (OECD, 2001, OECD 2007). Government decisions on financing should aim to minimise costs, including contingent liabilities and transaction costs, ensure the affordability and robustness of the financing structure (i.e. level of fees and leverage) as well as the sustainability of the financing over the long term, making sure that incentives are aligned among the stakeholders.

74. Infrastructure assets are ultimately funded by taxpayers or customers, while the financing could be provided by the private sector (i.e. corporates, banks, institutional investors). Infrastructure revenue earning potential influences the relevance and type of potential private sources of funding for an infrastructure asset. Infrastructure that can earn revenue has strong potential for private financing by providing a rate of return to service the capital allocated by the investors for construction and operation. If a revenue stream isn't available, funding will only be available from the public sector through the relevant government budget, or from international aid, or from a multilateral and national development banks (MDBs and NDBs).

75. New and alternative funding and financing models can potentially align public and private sector interests in infrastructure provision and management. As different types of private investors are willing to take on different types of risks, risk allocation is a crucial factor in determining the pool of willing investors. To attract alternative sources of finance such as institutional investors, new financial instruments and forms of collaboration, including between governments and development banks, beyond traditional instruments such as direct equity stakes and bank loans, may be needed. This can make infrastructure as an asset class more accessible to a broader group of investors and help to diversify the large risks of infrastructure projects - currently shouldered to a large extent by the banking sector and the public sector through guarantees - across many groups of investors through the capital markets.

Countries may consider the following selected actions:

- **Promote flexible, cooperative and targeted funding and risk allocation arrangements amongst the various financial stakeholders active on the infrastructure spectrum, including MDBs and NDBs, banks, companies, institutional investors and governments, favouring joint actions, securitisation and balance sheet optimisation where possible.. Financing approaches determined for individual projects allow the positioning of different actors depending on their funding capacity, risk profiles and institutional objectives, also considering the potential revenues for the project.**

Roles of financial intermediaries in the development phases of infrastructure may vary. If corporates and banks still play a predominant role in infrastructure, non-bank private capital (i.e. institutional investors) may play a role in financing infrastructure across multiple stages of projects, particularly when user revenues are available to meet private capital costs. MDBs and NDBs are major actors in infrastructure financing increasingly seeking to partner with the private sector. As different types of investors are willing to take on different types of risks, risk

allocation is a crucial factor in determining the pool of willing investors and the cost of capital for the public sector.

Several countries have adopted a range of alternative funding and financing mechanisms specifically designed to support and encourage additional private sector investment. To increase the number of infrastructure projects that are suitable for capital markets financing and to promote institutional investors' participation, it is necessary to offer different and innovative funding modalities and financial instruments. These modalities provide for more flexible funding by governments, MDBs, NDBs, and more effective risk sharing, and more efficient financing, which sometimes cannot be obtained under more traditional financing from the market.

- **Develop innovative governance frameworks (including innovative forms of Public-Private Partnerships (PPP) and Islamic sukuk financing), to enable infrastructure sustainability and facilitate private financing, Strengthen institutions to ensure adequate design and transparency.**

Incentives regulation in the network industries, such as setting price caps for infrastructure services, and structural reforms where there is limited or no completion, can help ensure that investment is cost reducing and mimics a fully competitive environment. Empirically, there is evidence that price-cap regulation when combined with regulatory independence boosts investment, especially in electricity grids and telecommunications networks. However, setting access prices for users of infrastructure is challenging for the regulator, with the possibility of too low a price leading to underinvestment and too high a price leading to underuse/lack of demand.

The issuance of sukuk is a growing trend in markets, but it is still in its early days. The overall trend however is for greater issuance volumes, a maturation of Sharia interpretation of the various instruments, growing levels of savings that seek Sharia compliant investments, and also growing appeal from western countries to access savings in Islamic countries. In order for this potential to be realised, regulatory, supervisory, and international coordination will be necessary in order to foster stability and to create durable interpretations of Sharia law for the finance of infrastructure.

- **Promote governmental support to innovative financial approaches, such as asset recycling, land value capture, special assessment districts, and tax increment financing.**

Adopting innovative financing approaches will assist with the provision of infrastructure and in effectively allocating the risks and returns from a project. A key aspect is flexibly determining the most effective capital structure and mix of private and public funding through the life cycle of the project from greenfield into the brownfield phase. Innovative financing approaches involve the government adopting a flexible approach in deciding the form of its financing involvement to crowd in the private sector in funding major infrastructure projects. This can include using means other than providing traditional government grant funding such as by using loans, loans that convert into an equity holding, equity, and debt or credit enhancements. Innovative government financing approaches can enable other investors (including institutional investors) to be brought into a greenfield investment after the construction or other risks have been reduced. It thereby allows the government to recover some or all of its funds and create additional fiscal room to deploy (effectively recycling) these funds into other government activity, whether infrastructure or other services.

In particular asset recycling, which can involve the monetisation of existing infrastructure assets by public entities to free up capital to invest in new greenfield infrastructure, is a process that can

be useful to ameliorate strained public finances. In this way, public entities continue to be key sponsors for the procurement and delivery of new infrastructure assets, while investors can step-in and finance operational assets, perpetuating the cycle of development and advancement of the infrastructure pipeline.

Land value capture is another noteworthy alternative source of funding for infrastructure assets. Recognising the broader economic impact that infrastructure can have on real estate values, such funding schemes attempt to capture some of this value within the financing of the infrastructure asset itself, providing an alternative source of return for investors that finance infrastructure.

- **Promote reliable long-term infrastructure funding for the financing of projects in order to ensure adequate revenue streams that attract private investment.**

Cash flows from infrastructure projects based on revenues and/or payments from governments must be adequate to ensure private sector returns on investment. Long-term leases, concessions, PPPs, and techniques such as availability payments are tools that governments have deployed to fund infrastructure assets, particularly those assets that do not generate revenues through user fees. In the energy sector, offtake agreements that contract utilities to purchase power generated from renewable energy sources such as wind and solar plants are also models to be studied. In some instances, revenue guarantees have also been deployed to ensure an attractive cash flow profile for investors.

However attracting the private sector to infrastructure has a cost as ultimately infrastructure is paid either through general budget or direct users. Government's decisions on financing should aim to minimise costs, including contingent liabilities and transaction costs, taken into consideration the fiscal sustainability over the long term.

- **Encourage diverse channels of debt financing for infrastructure projects, in particular through non-bank channels, including syndication of bank loans through capital markets, the development of a robust project finance market and structure, green bonds for the financing of renewable energy, securitisation and the formation of lending consortia. Develop take-out instruments for de-risked stages of projects or hybrid investment vehicles.**

Commercial bank origination of loans should be complemented by: (i) syndication of bank loans through capital markets, allowing banks to recycle capital for new projects, (ii) the development of a robust project finance market (such as project bonds) as an alternative to traditional infrastructure loans, and (iii) the formation of lending consortia through debt funds, direct investment by institutional investors, and other key stakeholders such as MDBs and governments.

Enable the development of project finance structures that mobilize institutional investors (local and foreign) in collaboration with the market, including introducing institutional reforms related to cross default provisions, step-in-rights, standardization of concession contracts etc. Create long-term lending products for banks, increase efforts to facilitate cross-border capital flows.

Development of Debt Capital Markets to finance infrastructure (i.e. project bonds) through simplifying and promoting securitisation markets, enhance transparency of financial products.

- **Encourage the formation of a transparent and robust secondary market for infrastructure; Develop specific products to improve access to capital market financing for infrastructure, including new vehicles to foster institutional investors participation (equity or debt, public and private) in infrastructure projects and recycling of capital through securitisation.**

Secondary markets can be helped through the enhancement of the standardisation of financing tools, the transparency of issuers, the availability of price and trade volume indicators, securitisation of claims on infrastructure, the supply of broker/dealer services, the formation of a competitive asset management industry, and other services such as custody. Reviewing securities law and tax regimes for public equity instruments is an important step as instruments can be designed for investors with different tax profiles and preferences; this could include the formation of secondary markets for asset transactions at points in the project lifecycle where refinancing is needed (such as the transition period from construction to operation where initial equity sponsors may seek an exit).

Regulators could facilitate the formation of secondary markets, thereby improving the liquidity of infrastructure investments. Mergers and acquisitions and asset sales (particularly asset disposals from utilities) provide the ability for infrastructure equity to change hands, and also provide information on pricing which helps other investors assess valuations. An active secondary market also facilitates the recycling of capital for developers and early stage investors to re-commit capital to new projects, building-on a pipeline of development and increasing efficiency. In principle secondary markets can match early stage finance such as corporate balance sheet investment and private equity with asset sales to operational stage finance through diversified listed equity instruments and institutional investor ownership.

- **Review the financing needs and instruments of small-scale infrastructure projects, which may be different from large-scale infrastructure. Promote project pooling, social and development impact investment instruments, and building networks of investors with local authorities and partners.**

Small infrastructure projects, particularly in lower-income countries, can have a large impact on communities. Alternative sources of capital such as aid and grants from donors, crowdfunding, social and development impact investment instruments, may all apply to small-scale infrastructure. Building networks of investors seeking social returns and financial returns with local authorities and partners is one way to reap the benefits of new technologies in small-scale finance.

- **Review the capacity of corporations (including public utilities and state-owned enterprises (SOEs)) to invest equity and debt capital in infrastructure projects adopting more efficient structures (i.e. through corporate governance reform) or increasing their access to local and international debt markets (i.e. improving corporate capability to obtain a credit rating).**

In order to promote investment in equity infrastructure, it is essential to change corporate managers' mind-set and encourage them to make use of their abundant financial resources for productive investment. More fundamentally, raising profitability and productivity of companies to globally compatible level is a key to spur business investment. To access international capital markets, it is also a key requirement for corporates to obtain a credit rating. Capability to understand and manage the process is needed.

Trading practices influence investors' appetite for long-term investment and companies' willingness to raise capital through equity and debt markets. Corporate governance requirements should be cost effective, including corporate reporting, and factors that influence the incentives and priorities in terms of exercising long-term corporate governance among different actors in the investment chain.

- **Address and take into consideration the nature of investment (greenfield/brownfield, domestic/foreign) and its risk/return characteristics in the identification of relevant financing and funding mechanisms.**

There are opportunities for authorities to tailor the specific risk/return characteristics of infrastructure projects, given the known preferences of investors. For instance, most investors prefer the stable cash flow profile of brownfield assets. Promoting long-term equity and debt investment in such assets provides access to these attractive characteristics for investors. Knowing the structure of unlisted debt funds, for instance, provides indications of investor preferences related to yield, credit quality, and tenor of infrastructure debt instruments.

- **Monitor the impact of financial reforms on infrastructure financing.**

Infrastructure assets are long-lived, with prospective cash flows spanning well into the future. Financial reforms and regulation can have a material impact on infrastructure investments which are sensitive to the long-range planning of investors. This may include financial reforms linked to climate change and sustainability.

SECTION II - EQUITY INSTRUMENTS FOR THE FINANCING OF INFRASTRUCTURE

Background on the subject of equity instruments for infrastructure finance

76. With the overall volume of private participation in financing infrastructure projects in some OECD regions and G20 countries remaining modest – a preliminary review of equity market financing reveals varying market structure across countries and varying levels of private sector involvement. Therefore, it is necessary to evaluate the equity capital market investment environment for infrastructure finance, including the role of different forms of equity finance, the role of institutional investors, market vehicles, and the capital markets conditions that might be required to promote higher levels of private investment.

77. This section draws on more extensive research in *Equity Instruments to Mobilise Institutional Investment in Infrastructure*, which is being written in conjunction with this Support Note. This report will therefore cover equity market financing of infrastructure, focusing on new market developments and innovations that could help channel higher levels of investment in infrastructure, highlighting examples from various OECD and G20 countries where equity market instruments have seen success in raising capital from institutional investors and public equity markets. It will draw on prior OECD work including *Infrastructure Financing Instruments and Incentives* - a report delivered to the G20 in September 2015 - and also involve other IOs. Additionally, the report will draw on information already gathered from G20 and OECD economies in the context of work completed on the Effective Approaches to the G20/OECD High-Level Principles on Long-Term Investment Financing by Institutional Investors, and in particular for the development of the common and innovative/emerging approaches to Principle 5 – Financing vehicles and support for long-term investment and collaboration among institutional investors.

78. The outcome of this section is to provide a better understanding of equity market financing of infrastructure and related capital market issues, and to address issues and obstacles that merit consideration by policymakers. This section may also help to enhance our understanding of the issue of infrastructure as an asset class and is closely related to other documents prepared for the Guidance Note.

Why a focus on equity is important

79. Equity markets are seen as a prerequisite for corporations to get access to capital they need for innovation, value creation and growth – the same can be said for private financing of infrastructure. This is particularly important in the aftermath of the financial crisis with governments facing fiscal constraints and national economies seeking more private sector long-term investment. However, the last decade has seen fundamental changes in equity market structure and trading practices and the way that equity is owned.

80. In this context, an analysis of the ability of equity markets to serve the real economy requires an understanding of how changes in equity market structure, regulation, policy (such as taxation), investment preferences, and trading practices influence investors' demand for long-term investment and companies' willingness and ability to raise capital through equity markets.

81. Following this line of work, understanding the financing choices of project managers and sponsors, relating not only to corporate governance, but also to efficiency and optimisation of capital structure, is telling as to the types and volumes of equity finance that are sought for infrastructure projects.

Volatility of cash flows, phase of development, financial leverage, sponsor strength, and public incentives, amongst other factors, can all influence the type and amount of equity capital that is most suitable for a particular project. For instance, a greenfield project may seek a certain class of investor that expects an exit at completion, whereas brownfield assets may be better suited for other equity instruments and long-term investors.

82. In developing countries, the need to find long-term equity investors can be particularly challenging, especially in markets that have underdeveloped or shallow local capital markets. There is a perception that political and regulatory risks are higher in developing markets, which may be true when considering individual countries, but political risk exists in all markets (including advanced economies) and should be evaluated on a project-by-project basis. Overcoming such barriers may involve governments working closely with project sponsors, strategic sponsors, and at later stages financial investors⁹ to structure investments that are resilient and sustainable over long periods.

The role of equity finance in infrastructure

83. Equity finance is essential, especially for infrastructure assets with limited capacities for debt finance. In the case of Public-Private Partnerships (PPPs), which are increasingly being used to involve the private sector in infrastructure procurement, the level of debt is determined by the availability of revenues to service the debt. Creditors share much of the project risk and lend on a non-recourse basis (Gemson et al 2011). The use of risk mitigants such as guarantees on debts can also impact the amount of debt financing available for a project. In most cases, some amount of equity finance is required to initiate a project or refinancing of an existing asset.

84. Projects that have a greater degree of revenue risks, operating risks, or construction risks that limit the capacity to borrow may face a financing gap where equity can be used to provide the necessary additional financial backing. PPP Projects that are structured in a way that are profitable at an acceptable level of risk are suitable for equity investors; yet reconciling the interests of the public sector with project sponsors is an important issue to be addressed in order to ensure long-term financial sustainability. The following are the primary reasons why equity investment is critical in infrastructure finance:

- Due to its perpetual nature, equity can be a stable financing instrument for long-term, high-risk investments, as well as for long-term investments with significant information asymmetries and moral hazard. It is especially relevant for financing assets with high growth and innovation potential and is key for sustainable value creation. Equity investors, and in particular institutional investors, are able to take a long-term view on the risk and return characteristics of infrastructure assets and are thus well-suited to bear such risks as they extend the investment time horizon over long periods, mitigating concerns over short-termism and speculation in infrastructure markets.
- Equity capital occupies a first-loss position in the capital structure of an infrastructure asset. Securing an adequate amount of equity is crucial in order to catalyse infrastructure projects. Equity therefore provides support for the issuance of debt, helping to also achieve higher ratings categories when assets are sufficiently well capitalised by loss-absorbing positions. In cases where projects cannot secure enough debt financing due to limited or uncertain revenues, closing

⁹ Project sponsors are considered to be the initiators of an infrastructure project financing and are responsible for the management of the asset. Strategic investors (also including financial sponsors) may include suppliers, contractors, state-owned development banks, governments, and institutional investors that have some degree of active involvement in the management of the asset. Financial investors usually are not intensely involved in project operations, but play an important role in providing investment capital (definitions adapted from Weber and Alfen, 2010).

“financing gaps” through additional equity commitments, or hybrid instruments such as mezzanine finance may be an option.

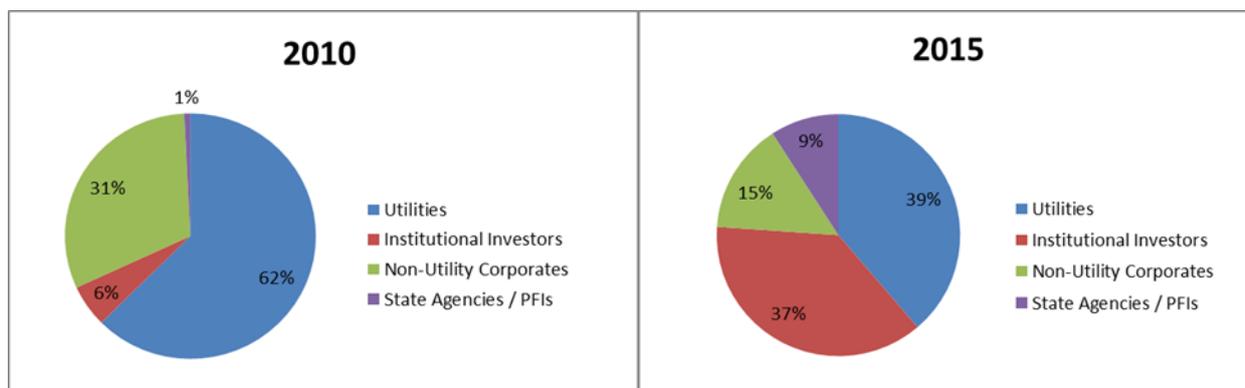
- Equity finance is critical for private sector involvement in the procurement of infrastructure: it helps to align interests between project sponsors, governments, and financial investors. An alignment of incentives between the public and private sectors is key for the sustainability of private sector investment in infrastructure; equity serves as the instrument through which this relationship can function. For example, developing PPP models that appropriately balance private sector incentives with public sector protections and risk sharing. Equity structures must therefore be designed to both attract private sector investment while protecting the public interest, using a contractual framework that builds confidence and sustainability.
- The procurement of infrastructure involving private sector sponsors and investors should deliver services efficiently. Equity investment allows for a competitive bidding process; this is especially important for projects delivered through PPP contracts. A competitive bidding process can allow governments to perform value for money analysis, taking into account not only the cost of equity, but other factors such as quality, innovation, time, and safety to compare PPP procurement to traditional public sources of finance (FHWA 2007). Any efficiency gained through private management and finance should provide value and a quality service – not just a lower cost to the taxpayer. A transparent procurement process can also help justify using alternative sources of finance for infrastructure assets.
- OECD research on pension fund asset allocation indicates strong demand for equity investment in infrastructure, particularly in private market channels such as direct equity investment in projects and infrastructure funds that invest directly in assets. New equity instruments, in both public and private equity market channels are diversifying the field of infrastructure finance. Policymakers should therefore focus attention on fostering a supportive investment environment to channel higher levels of equity investment into infrastructure assets.

Sponsors and financial investors

85. Project sponsors are considered to be the initiators of an infrastructure project financing and are responsible for the management of the asset. Strategic investors (also including financial sponsors) may include suppliers, contractors, construction companies, state-owned development banks, governments, and institutional investors that have some degree of active involvement in the management of the asset. In greenfield projects, sponsors and strategic sponsors are together responsible for the planning, construction, and delivery of an asset. During the operational phase, initial strategic sponsors may exit after completion, with other sponsors or new sponsors assuming management responsibilities. Financial investors usually are not intensely involved in project operations, but play an important role in providing investment capital (Weber and Alfen, 2010). Although there are some examples of financial investors taking a strong sponsor role, to be discussed in further case studies.

86. It is this last segment of equity providers, the growing role of financial investors and financial sponsors that is linked to private equity investment, alternative sources of finance, and the growing level of institutional investment in infrastructure assets. Figure 3 shows recent OECD research in the forthcoming *Business and Finance Outlook* on the sources of equity finance in wind energy projects in Europe (OECD 2016 forthcoming). This is just one sector of the infrastructure market in one region, but illustrative of the overall trends in private sector finance of infrastructure.

Figure 3. Change in equity mix in wind energy projects, Europe (shares of total equity in sample)



Source: OECD calculations based on BNEF database, OECD (2016a forthcoming)

87. The share of total equity provided by utilities (state owned and private) decreased from 62% in 2010 to 39% in 2015, that of non-utility corporates from 31% to 15%. In other words, the combined share of the two traditional equity investors in the wind energy sector decreased substantially, from 93% in 2010 to 54% in 2015. Weaker utility and corporate balance sheets have reduced these sources of risk capital for investment. Accordingly, other investors have stepped up their activities.

88. Institutional investors drove this development, at least for brownfield projects; pension funds, insurance companies, private equity and infrastructure funds have become major equity investors in the European wind sector. Their share in total equity provision increased from 6% in 2010 to 37% in 2015, making them the second most important equity providers in the 2015 sample, just 2% behind utilities. The increase of equity provision by institutional investors in the sample can be traced mainly to the acquisition of brownfield assets or portfolios for onshore wind deals. Institutional investors were not involved in any greenfield onshore wind-power transactions included in the 2015 sample. This suggests that institutional investors look to the onshore wind sector mainly for the acquisition of existing projects.

Equity instruments to mobilise private investment in infrastructure

89. A particular focus of this report is to highlight equity market instruments and structures for the financing of greenfield investment, renewable energy (since many assets are new-build), and investments in developing countries. Since much of the policy dialogue has focused on deploying capital into new assets, equity market instruments that are designed and/or able to bear construction risk, planning risk, and general market risks associated with greenfield projects will be highlighted. This is especially important, given that OECD research and data gathered from surveys of institutional investors indicates that investors prefer the stability and cash-flow generating attributes of brownfield projects; policymakers will therefore need to focus their efforts on modes of equity instruments that finance greenfield development.

90. Based on work completed in *Infrastructure Financing Instruments and Incentives*, the background report on equity covers all channels of equity finance by financial sponsors, with emphasis placed on innovation and highlighted case studies, where applicable. Recalling the mapping of equity instruments and channels of investments, Table 2 expands on equity instruments and maps the various instruments in the major segments of infrastructure finance covered in the background report. Analysis will draw on categories identified in the below table.

Table 2. Equity instruments and vehicles for infrastructure financing by financial sponsors and investors

Modes		Diversifying Instruments			
Asset Category	Market	Relevant for Greenfield Finance	Relevant for Brownfield Finance	Relevant for Clean Energy Finance	Relevant for Emerging Markets
Equity	Listed	Corporate Balance Sheet	REITs, MLPs, MITs, InvITs, Closed-end Funds	YieldCos, REITs, Closed-end Funds	Infrastructure Investment Trusts (InvITs), REITs
	Unlisted	Infrastructure Funds (GPs), Direct/Co-Investment,	Infrastructure Funds (GPs), Direct/Co-Investment, Platforms	Infrastructure Funds (GPs), Direct/Co-Investment, Platforms	Infrastructure Funds (GPs), Direct/Co-Investment, Platforms

Source: OECD

Listed equity market instruments

91. Based on research, there appears to be few instruments available to finance new-build infrastructure assets through public equity channels, with the exception of traditional shares in corporations that finance assets on-balance sheet. However, it is important not to overlook the importance of traditional corporate balance sheet finance in infrastructure, which continues to be a large share of overall investment. Both retail and institutional investors commit sizable amounts of their investment portfolios to listed equities through both active and passive strategies. The formation of indices that track the performance of infrastructure corporations can facilitate investment within the sector as other investment products such as index funds or Exchange Traded Funds (ETFs) can be based off of them. Indices also facilitate the analysis of the performance of infrastructure corporates and may help describe some of the characteristics of infrastructure assets.

92. Closed-end Funds, Real Estate Investment Trusts (REITs) and Master Limited Partnerships (MLPs) are designed principally as holding companies to pass-through income to shareholders. Because these vehicles do not retain earnings, there is very limited organic growth potential. New-build projects would have to be financed through new share-issues, and due to the fact that assets can take a long time to reach an operational, cash flow-generating phase, such investment is inconsistent with the business models of these instruments. Other sponsors such as construction companies, infrastructure corporates, and other publicly listed companies involved in the delivery of infrastructure assets that have balance sheet capacity can finance greenfield investments. Although based on the analysis in Figure 3, utilities and non-utility corporates were a shrinking component of equity investment (in European wind assets), while institutional investors and state agencies were growing segments.

93. There is a collection of various public equity market based instruments (such as yieldcos, REITs, InvITs and MLPs) that are active in brownfield finance. They represent a relatively small fraction of infrastructure finance, but that could change depending on amendments to qualifying assets. These instruments have experienced varying traction in real property or real asset categories, but overall, asset levels have increased in all of them in recent time periods. Governments have had a history of reviewing the laws and regulations that govern equity instruments such as MLPs and REITs – legislature that seeks to amend qualifying assets could expand the use of innovative equity instruments into infrastructure sectors, with an ultimate goal of driving down the costs of equity financing. Thus “fringe areas” of infrastructure finance could become more main-stream and increase the flow of public equity finance into infrastructure assets. Master Limited Partnerships (MLPs), although a small sector of the infrastructure market, have the

potential to channel higher levels of investment through their unique corporate structure. Traditionally associated with conventional energy, pipelines, and natural resource storage, proposed legislation in the United States may expand MLPs to cover certain renewable energy categories like geothermal, solar and wind.

94. Similarly, REITs, traditionally equity instruments associated with real estate properties, could have application to certain social infrastructure sectors such as correctional facilities and retirement housing. The United States, which first created REITS through legislation in 1960, has a long history of amending rules that modify qualifying incomes for different property types. The REIT model is also widely used across the world, with many countries having established legislation to launch REITs in domestic stock markets. The expansion of REITs into renewable energy (particularly through the build-out of solar panels on existing buildings) has the potential to revolutionise small-scale solar financing. The principal behind REITs is the definition of qualifying income, and what business activities and property types can be included as qualifying income. Notably, Turkey has introduced infrastructure-based REITs to be sold to the public or qualified investors. India has launched trust-based structures (REITS and Infrastructure Investment Trusts, or InvITs) that maximise returns through efficient tax pass-through and improved governance structures. In many countries, modifying existing rules for REITs or trust-based vehicles can make an impact in infrastructure finance, particularly given that the REIT model is so widely used across the OECD and G20 countries.

95. Over the past few years, yieldcos have emerged as an equity-based financing model for clean energy projects such as wind and solar. Although there has been some volatility in this market in the recent time period, this model of finance represents an innovative channel for investors to gain exposure to clean energy assets. It is not completely clear whether such structures are suitable for greenfield financing and development of new wind and solar energy plants. Some closed-end funds have also been launched specifically to finance renewable energy, particularly in the United Kingdom.

Unlisted equity market instruments

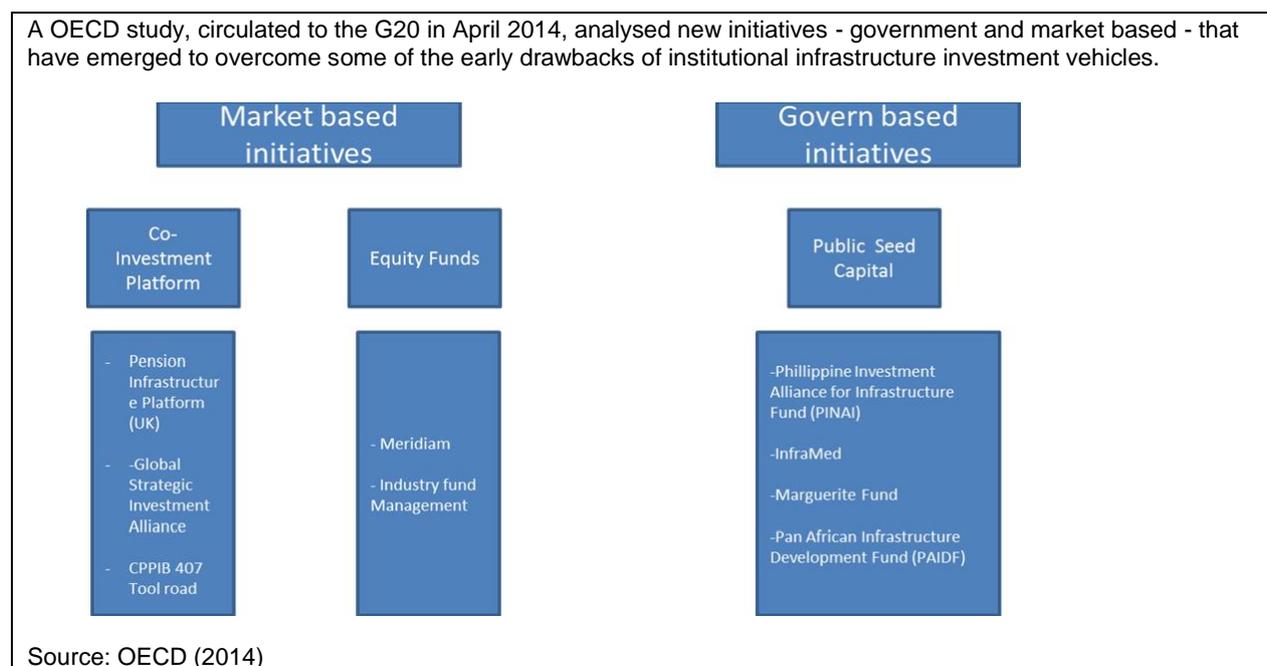
96. Some private market instruments such as funds have played a major role in channelling institutional investment into infrastructure; it is recognised that a spectrum exists of investment strategies, level of fees, and terms and conditions of unlisted funds. Asset management industries, combined with a competitive bidding process for assets and a project pipeline are conducive to investment funds raising capital for deployment into infrastructure projects. This is because funds raise capital in cycles, with a certain pre-determined time period to deploy capital into investments. Since many funds invest in PPP/PFI assets, a supportive project finance environment, and liquidity in debt markets is also supportive, since private equity investors also seek to secure debt financing for investment.

97. Evaluating fund structures and fee arrangements that align investor interests with managers will be crucial in developing a fund-based financing model for long-lived assets such as brownfield infrastructure; this would include open-ended funds or funds with lock-up periods longer than traditional private equity structures. Greenfield projects in emerging economies, where risks are greater and the required expertise is greater, would be expected to charge higher fees than funds that invest in brownfield core economic infrastructure assets in developed countries. Comparing fund structures suitable for the spectrum of infrastructure assets, projects in lower income countries, and renewable energy can help to match the investor demand with the type of financing needed for a project/asset.

98. Open-end funds or funds of length greater than 15 years seem to be more appropriately matched to the long-term liabilities of institutional investors. Open-end funds have an investment period that is ongoing, and provides immediate exposure to income generating assets. With open-end funds, there is greater ability to grow and diversify the fund over time and no rush to deploy capital. With regards to

contributions, investors have more control, valuations are regular and independent and liquidity is available from cash yield with the option of matching buyers to sellers at exit and redemption if appropriate. Investors also have control over reinvestment and distributions decisions. On the other hand, management of the fund during a downturn could prove challenging due to the potential simultaneous withdrawal of funds following liquidity constraints of several fund participants.

Figure 4. Initiatives in the equity market for infrastructure



99. The formation of infrastructure investment platforms, for instance the Pension Investment Platform in the UK, but also programmes launched by the European Investment Bank, European Bank for Reconstruction and Development, and the Asian Infrastructure Investment Bank, are all geared towards channelling institutional investment in infrastructure projects. Some of these initiatives have focused mostly on financing brownfield assets, or rehabilitation of older assets (in particular the PIP in the UK). The EIB has been more active in greenfield finance, sometimes making equity co-investments with other sponsors.

100. The EBRD’s Equity Participation Fund is an innovative structure recently launched. Institutional investors commit capital as limited partners with the EBRD effectively acting as the general partner. The fund itself resembles a private equity-style investment fund, with an expected 15% IRR, and a term of 12 years (IMF 2016). The EBRD has also been active in investing in private equity funds targeted in Eastern Europe and emerging markets within Europe.

101. Caisse de Dépôt et Placement du Québec (CDPQ) is a large Canada-based pension fund that has recently launched an interesting investment initiative. The fund has partnered with a consortium of Mexican institutional investors to launch a co-investment vehicle for infrastructure projects in Mexico. The partnership effectively combines experienced leadership in infrastructure investment management (through CDPQ) and local market networks. Over the next five years, it is expected that the consortium will invest up to CAD 2.8 billion in energy generation (including renewables), transmission and distribution, and transportation, amongst others. A particularly noteworthy characteristic of this example is that the agreement will include private markets investment through CDPQ (51% stake) while the remaining 49%

minority interest will be listed on the Mexican stock exchange as a trust, held by leading Mexican pension funds.

Equity as a catalyst of investment – opportunities and challenges

102. Multilaterals, national development banks and export credit agencies in particular have a catalytic role to play in leveraging private sector capital in both developing and developed countries. This will require a different level of risk taking, new resources and expertise at the level of these institutions and the use of new financial instruments and techniques. Governments use different mechanisms to overcome constraints and barriers for higher institutional investor involvement, including fiscal incentives, capital pooling platforms and risk mitigation mechanisms (guarantees, insurances, credit enhancement, currency risk protection, and other instruments) (OECD 2015a). Similar mechanisms are tried for renewable energy and green infrastructure (Kaminker and Stewart 2012, OECD 2015b). Investment platforms launched by MDBs and co-investments with key regulators, MDBs, SWFs, or governments are some examples to be discussed further.

103. In this context it is relevant to understand and assess the effects of these measures and in particular their capacity to attract private capital without generating or increasing moral hazard and adverse selection phenomena, thus safeguarding the microeconomic benefits produced by the involvement of private capital and competencies. Policy makers should prioritise those instruments that enable the projects' bankability, incentivising at the same time the private sector to correctly assess investments and to reach desirable level of project efficiency, without unduly creating untenable market distortions (OECD 2015a).

104. Financial markets pre-conditions (covered in greater depth in an earlier section) are essential for policymakers to successfully diversify the financing options for infrastructure assets. Strong institutions build the confidence necessary for investors to make the often long-term capital commitments necessary to finance infrastructure. Pre-conditions are especially important for projects located in developing countries which face a number of challenges including a lack of domestic savings, an underdeveloped local long-term capital base, and shallow capital markets. Tapping foreign capital markets and attracting foreign direct investment may be an option; however, risk introduced through currency mismatches and other economic exposures such as interest rates should be addressed ex ante where possible. Closer cooperation between governments, project sponsors, and investors can help to address perceived higher political and regulatory risks.

105. All infrastructure investment instruments may not be suitable for greenfield infrastructure finance. For example, the business models of some listed equity instruments are not a match for early stage infrastructure finance. There is some evidence that private equity structured investments in greenfield assets may be attractive for to some institutional investors that have due diligence expertise and understand their unique risk-return attributes.

106. Regarding greenfield investment, a multi-stakeholder project preparation facility¹⁰ could accelerate institutional investment in infrastructure by pooling and blending funds for the purpose of project preparation and development. Such facilities aim to streamline and shorten the project preparation phase, bringing together the public and private sector. Governance of such a facility regarding conflicts of interest and investor exit options will be a key determinant of success. Strong governance may include a review the operational focus, the proposed areas of intervention by the facility, and ensuring consistency with the facility's policy thrust.

¹⁰ Including government and government agency grants, contributions from donors, or private investment in early stage project development.

107. While many investors prefer the relative stability of the return profile in brownfield assets, institutional investors' attitude towards construction risk has changed over the past ten years, particularly regarding the availability of returns. Some investors may be willing to take construction risk and wait-out the "j-curve" effect in returns for higher future IRRs. Supporting pipe-line initiatives to ensure a steady amount of greenfield assets is crucial to build investor commitment.

SECTION II - RECOMMENDATIONS ON EQUITY INSTRUMENTS FOR THE FINANCING OF INFRASTRUCTURE

108. Equity finance is essential, especially for infrastructure assets with limited capacities for debt finance. Projects that have a greater degree of revenue risks, operating risks, or construction risks that limit the capacity to borrow capital may face financing gaps where equity can be used to provide financial backing. Equity capital occupies a first-loss position in the capital structure of an infrastructure asset; securing an adequate amount of equity is crucial in order to catalyse infrastructure projects. Equity therefore provides support for the issuance of debt, helping to also achieve higher ratings categories when assets are sufficiently well capitalised by loss-absorbing positions. Together, equity and debt financial instruments are self-reinforcing to the stability of the long-term financing of infrastructure, and when combined with the judicious use of certain risk mitigation instruments and incentives, can achieve productive use of both public and private capital.

109. In order to attract private sector investment to the full spectrum of infrastructure, such assets need to be structured as attractive investment opportunities, providing risk-return profiles that match investors' differing return expectations, liability structures, and preferences. Since high demand for brownfield assets is driving up prices and lowering margins, the opportunity for excess returns on investment in greenfield assets is becoming attractive. Given the huge infrastructure needs in emerging markets for new projects, greenfield investment is where a major part of the global infrastructure gap will be closed. However, investors remain reluctant to take development risk in new projects, which implies the need for either intervention on the part of governments and regulators to facilitate investment, or the development of new financing channels.

Countries could, where possible:

- **Facilitate the establishment of robust unlisted infrastructure equity markets; Review the ability of equity funds to access infrastructure assets in the local market, including the suitability of greenfield assets for existing business models, and also the local laws that govern such vehicles.**

Infrastructure funds (General Partnerships, or GPs) represent a major sector of the unlisted equity market. Governments should review the ability of funds to access infrastructure assets in the local market, including the suitability of greenfield assets for existing business models, and also the local laws that govern such vehicles. This could include the formation of secondary markets for asset transactions and recycling of capital.

The infrastructure fund management industry is growing as the number of funds in the markets increases along with total assets under management. There is some evidence that investment managers are responding to investor demands to lengthen fund terms with long-term investment objectives, and to better align fee structures with the underlying economics of the assets. These are important trends to survey when reviewing unlisted infrastructure equity fund markets.

- **Review the availability of, and the qualifying assets for, diverse listed equity instruments, including existing equity business models such as Real Estate Investment Trusts (REITs), Master Limited Partnerships (MLPs, trusts and open- and closed-end funds.**

Existing equity business models such as REITs, MLPs, and closed-end funds, to name a few, are all equity instruments that are subject to specific investment rules defining qualifying asset types, and may be applicable to certain infrastructure assets. For example, certain infrastructure sectors such as social services like hospitals and schools may have a natural linkage to real estate. MLPs, which are traditionally associated with mid-stream energy, could also include renewable energy assets given legislation filed in the United States. Reviewing securities law and tax regimes for public equity instruments is an important step as instruments can be designed for investors with different tax profiles and preferences.

Such listed instruments may be suitable for countries with higher levels of taxable savings and are broadly available through retail investment channels such as mutual funds, ETFs, index funds, and other asset management products.

- **Encourage the formation of investment platforms and partnerships where government, NDBs and MDBs can leverage private sector investment.**

This is an important initiative that can expand the involvement of the private sector through co-investment, risk-sharing, ultimately realising synergies. Recent initiatives have seen governments or development institutions provide assistance in setting up infrastructure funds and contributing directly through seed funds.

- **Review risk mitigation and incentives that especially encourage equity investment.**

Many risk mitigation techniques and incentives are designed to target the infrastructure at the project level, but also may have supportive roles for equity investors. These combined with known techniques that specifically target equity investors can help authorities raise more equity capital for projects. Generally, the expected benefits of providing risk mitigants should be balanced against their costs, and their provision should serve to supplement market-based approaches to infrastructure finance.

- **Promote synergies between MDBs and NDBs and the broader equity market base, including through co-financing facilities, insurance pools, wider range of currency hedging tools and asset securitisation.**

MDBs can play a catalytic role in securing enough equity finance for an infrastructure project. Other sections of this report cover the potential role of MDBs.

- **Review the efficiency of tax policies for infrastructure finance, noting the tax treatment of debt and equity in the capital structure.**

Tax policy, including tax incentives targeted at infrastructure projects, can have a strong impact on project viability and investment attractiveness. Tax policies governing fund structures including limited liability partnerships are also important considerations, as well as corporate tax policies.

- **Promote equity culture in infrastructure investment**

In general, it is important to promote further equity culture and positive bias in public and private communities, in particular through appropriate corporate governance practices.

- **Exchange experience in relevant fora on successful initiatives in other jurisdictions.**

Governments could participate in international fora to increase knowledge sharing on infrastructure financing policies and establish best practices. Examples include the Global Infrastructure Hub and the G20/OECD Task Force on Institutional Investors and Long-term Financing. This effort can further be supported by analytical work of international organisations, working with academia and practitioners on related issues.

SECTION III - ENGAGING INSTITUTIONAL INVESTORS AND CAPITAL MARKETS IN INFRASTRUCTURE FINANCING

Background

110. Institutional investors – particularly pension funds, insurance companies, SWFs and mutual funds – are increasingly important players in financial markets. As seen in recent OECD surveys, despite a still limited investment in infrastructure and marginal exposure to emerging markets, there seems to be a large amount of potential capacity to expand institutional investment¹¹. In developing countries, domestic institutional investors are also growing rapidly, increasing the potential to address the financing gap.

111. Many of the challenges that limit the investment of institutional investors in infrastructure are applicable both to domestic and foreign institutional investors. In order to attract institutional capital to advanced and emerging markets in infrastructure, and guarantee the success and sustainability of the investment in the long-term, several barriers to investment need to be addressed, some specific to pension funds, others affecting investors more generally.

112. This section will review the potential role of institutional investors in infrastructure financing, the main barriers, and policy implications for governments to facilitate the flow of institutional capital into infrastructure assets.

Role of institutional investors for infrastructure financing

113. Theoretically there is significant potential for institutional investors to act as sources of infrastructure financing. Infrastructure investments may be attractive to institutional investors such as pension funds and insurers as they can match the long term duration of pension and insurance companies' liabilities. Further, these investments are expected to generate attractive yields in excess of those obtained in the fixed income market although with potentially higher volatility. In addition investments in infrastructure assets linked to inflation could hedge pension fund liabilities that are linked to inflation. Even though pension funds have the rationale to hedge against inflation, the extent that they are compelled to can be quite different for defined benefit versus defined contribution funds.

114. In OECD countries alone, institutional investors held USD 92.6 trillion in assets in 2013. Growth in institutional investors' assets remains substantial. For instance, pension fund assets grew by 8.2% annually over 2009-2013. Similar to advanced economies, domestic institutional investors in emerging countries have experienced considerable growth, and they currently hold around USD \$4-5 trillion in assets (excluding investment funds).

115. Although the aggregate institutional investor market is large, the size of domestic markets varies considerably, reflecting a range of factors. These include the mix of public and private pensions, whether participation is mandatory or voluntary, life/non-life split in insurance sector, and investment policies. These factors have largely determined the different paths of asset accumulation. In emerging

¹¹ See OECD Annual Survey of Large Pension Funds and Public Pension Reserve Funds, delivered to G20 in April 2016. www.oecd.org/finance/lti

markets, institutional investors are located in Asia and Latin America, but still with significant variation across countries even in the same region.

116. Despite the financial crisis, growth by institutional investors is unabated, especially in countries where private pensions and insurance markets are still small in relation to the size of their economies. Emerging market and developing economies generally have even greater opportunity to develop their institutional investment sectors, as their financial systems are largely bank-based. Other large investors such as Sovereign Wealth Funds and public pension reserve funds are growing rapidly in developing and emerging economies.

117. The investment strategies of institutional investors differ significantly across countries and type of investors. Asset allocation is influenced by a variety of factors, such as market trends, investment beliefs, regulation, risk appetite, liability considerations, cultural factors, governance structures, tax issues and ultimately domestically available assets. Direct investors are largely seeking equity deals that allow for a level of governance control, such that the value for the investment can be increased over time. Indirect institutional investors may be more interested in debt products that allow for passive investment in assets with higher returns that would be available in developed markets. For example the asset allocation of SWFs and PPRFs varies widely depending on their specific objectives and mandates. Funds more focused on fiscal stabilization for example have a higher weight in fixed income and cash while national saving funds and pension reserve funds are more likely to have a higher allocation to equity and higher risk investments¹².

118. Traditionally, institutional investors have been seen as sources of long-term capital with investment portfolios built around the two main asset classes (bonds and equities) and an investment horizon tied to the often long-term nature of their liabilities. In the 1990s, pension funds began enlarging the opportunity set for purposes of diversification and return seeking, adding equity exposures, corporate and securitized bonds, and then later emerging markets, and alternatives. The bursting of the tech bubble in the early 2000s, followed by the global credit crisis and falling interest rates have contributed to a major shift in asset allocation strategy as many funds realised that they were not always well protected against market volatility.

119. Against the backdrop of prolonged low-yield environment, the *OECD Business and Finance Outlook 2015* expressed the concern that pension funds may become involved in an excessive “search for yield”. While pension funds in small pension markets may tend to favour equities to get higher returns, pension funds in most of the largest pension markets have shown an increasing interest in alternative asset classes. Infrastructure, which is often included in alternative investment allocations by institutional investors, has been part of this growing trend.

120. As a result of these trends and the evolution of asset allocation from traditional stocks and bonds to globally diversified portfolios, some investors have built up sizable allocations in equity infrastructure, while global levels of investment have been growing slowly. Canadian and Australian pension funds have some of the largest allocations observed. Within the past few years, an increasing number of pension funds have started to invest in infrastructure, some of which have created dedicated target allocations. There are many ways in which investors may gain exposure to infrastructure assets. The most recent OECD Annual Survey of Large Pension Funds (LPFs) and Public Pension Reserve

¹² For example, the “Government Pension Fund Global” in Norway has two main goals: to facilitate government savings necessary to meet the rapid rise in public pension expenditures in the coming years, and to support a long-term management of petroleum revenues. Russia’s National Wealth Fund is dedicated to supporting the pension system to guarantee long-term sound functioning of the system.

Funds (PPRFs) collected data on the infrastructure investments of some of the world's largest and most influential funds.

121. Based on the survey population, investor demand for unlisted infrastructure equity has been strong. Direct investment remained the most common method for funds to gain exposure to infrastructure, especially amongst large funds that have the size and expertise to manage assets directly. Infrastructure funds (GPs) that invest on behalf of pension funds were the second most popular choice amongst the survey population. Knowing that the overall pension market is large and highly fragmented, many smaller funds do not possess the staff or expertise to directly manage assets. Hiring external consultants and asset managers to manage infrastructure investment has thus been a strategy for this segment of the pension market.

122. Investors have a strong preference for brownfield (operational) assets that have proven abilities to generate cash flows. Institutional investors are drawn to the long-term nature, stability, and predictability of cash flows that some infrastructure assets can offer, making them suitable to diversify pension fund liability benchmarks. Prospective risk and return are perceived as higher in new greenfield assets and may require more due diligence on the part of the investor. That being said, increased return appetite in relation to construction risk is pushing investors to acquire the expertise to be able to provide creditor oversight on new-build construction.

123. In practice, despite growing interest, institutional investors have, in aggregate, invested very little in infrastructure, even in advanced economies. The OECD has estimated that the largest pension funds have invested less than one percent of their assets in infrastructure, excluding indirect investment via the equity of listed utility companies and infrastructure companies. However, there is significant variation in their appetite. The Canadian and Australian funds lead the way with five to 10 percent allocation in this category (one even at 15 percent). Nevertheless most are languishing in the single digits, if they have any allocation at all.

124. Their investment in emerging markets infrastructure is much more limited. These leading funds invest around one-third of their total portfolios in foreign markets. However, their infrastructure investment shows an even greater 'home bias'. Most of the overseas projects they invest in are in other OECD countries – with only select markets (such as Brazil, Chile, in some cases India) outside of the OECD.

125. The exposure of institutional investors in emerging markets infrastructure is even lower than that of the leading OECD funds. There are a few exceptions, mainly in countries with a larger institutional investor base such as Chile, Mexico and Peru.¹³

126. As seen in recent OECD surveys there seems to be a large amount of potential capacity to expand institutional investment in infrastructure, taking into account the target allocations of the funds that already have established allocations and those that are considering opening new allocations. Assuming some increased 'North-South' allocation by OECD investors into developing markets infrastructure, combined with a growth in emerging market domestic institutional investor assets and the development of infrastructure investing on their part, a figure of US\$ 1 trillion over a prolonged period would not look unreasonable¹⁴. Though not sufficient to solve the infrastructure financing gap alone, this could

¹³ See Inderst, Georg and Stewart, Fiona (2014), "*Institutional Investment in Infrastructure in Emerging Markets and Developing Economies*". See also BBVA (2011), "*A review of recent infrastructure investment in Latin America and the role of private pension funds*", Economic Analysis.

¹⁴ See Capital Market instruments to mobilize institutional investors to infrastructure and SME financing in emerging market economies, Report to G20, WBG- IMF- OECD, 2015

certainly prove as an important source of new capital to help fill the infrastructure financing gap in emerging countries (See Annex 3).

127. However, in order to attract institutional investors in infrastructure and guarantee the success and sustainability of the investment in the long term, several barriers to investment need to be addressed, some specific to pension funds, others affecting investors more generally.

Risk mitigation and incentives in infrastructure finance¹⁵

128. Infrastructure investment involves complex risk analysis, risk allocation and risk mitigation, given the highly idiosyncratic and illiquid nature of such investments. From an investor perspective, it is important to carefully analyse all risks that the project will bear during its economic life, while determining an acceptable compensation for bearing such risks. From a government perspective, the decision to provide the infrastructure itself or in partnership with the private sector will be based on a range of factors, including the nature of the infrastructure project, the costs associated with raising private finance, and the type and magnitude of related risks.

129. In recent work developed for the G20 by the OECD (*Infrastructure Financing Instruments and Incentives*) infrastructure risks are classified by their main source – namely political and regulatory, macroeconomic and business, and technical. Risks linked to investment in infrastructure projects can be differentiated by their source (see Table 3), and grouped according to the project development phases, namely:

- **Political and regulatory risks:** Arise from governmental actions, including changes in policies or regulations that adversely impact infrastructure investments. Such actions may be broad in nature (like convertibility risk) or linked to specific industries or PPP contracts. In some cases, this risk may emerge from the behaviour of government contracting authorities or the behaviour of public interest groups. For example, public authorities have a key role in the environmental review process and also in working with communities regarding the social acceptance of an infrastructure asset (i.e. onshore windfarms that face opposition from local community groups). Political risks can be highly subjective, difficult to quantify, and therefore difficult to price into infrastructure finance. Table 3 lists those risks that are closely associated with infrastructure investment.
- **Macroeconomic and business risks:** Arise from the possibility that the industry and/or economic environment is subject to variation. These include macroeconomic variables like inflation, real interest rates and exchange rate fluctuations. An asset's exposure to the business cycle, namely, shifts in demand is a principle business risk of the asset. Finance risks (such as debt maturity) are also a major part of business risk.
- **Technical risks:** Determined by the skill of the operators, managers and related to the features of the project, project complexity, environmental impact, construction and technology.

¹⁵ See also work contributed to the G20 by the GIH on the PPP Risk Allocation Matrices, and WBG work on standard contract terms. In Europe, the United Nations Economic Commission for Europe (UNECE) has also launched a programme for international PPP standards. Furthermore, the Public-Private Infrastructure Advisory Facility (PPIAF) has also developed framework PPP policies.

Table 3. Classification of risk linked to infrastructure assets

Risk Categories	Development Phase	Construction Phase	Operation Phase	Termination Phase
Political and regulatory	Environmental review	Cancellation of permits	Change in tariff regulation	Contract duration
	Rise in pre-construction costs (longer permitting process)	Contract renegotiation		Decommission
				Asset transfer
	Currency convertibility			
	Change in taxation			
	Social acceptance			
	Change in regulatory or legal environment			
Enforceability of contracts, collateral and security				
Macroeconomic and business	Prefunding	Default of counterparty		
	Financing availability	Refinancing risk		
		Liquidity		
		Volatility of demand/market risk		
	Inflation			
	Real interest rates			
Exchange rate fluctuation				
Technical	Governance and management of the project			Termination value different from expected
	Environmental			
	Project feasibility	Construction delays and cost overruns	Qualitative deficit of the physical structure/ service	
	Archaeological			
	Technology and obsolescence			
Force majeure				

Source: OECD (2015c).

130. Research in *Infrastructure Financing Instruments and Incentives* covers a broader spectrum of infrastructure finance and seeks to link strategies to mitigate risks and enhance returns to the financing instruments and channels. It recognises that there are both public and private sector risk mitigants that can increase the viability of infrastructure finance. Policy actions designed to enhance project bankability, in particular by addressing business risk, are discussed below the annex in order to define the range of potential measures that could mobilise infrastructure financing. Table 4 describes the principal risk mitigation instruments and incentives for infrastructure finance.

Table 4. Financial risk mitigants and incentives for infrastructure finance

Type of Measure	Instrument
1. Guarantees, realised directly by Government or by its own controlled agency or development bank	1. Minimum payment, paid by contracting authority
	2. Guarantee in case of default
	3. Guarantee in case of refinancing
	4. Exchange rate guarantees
2. Insurance (private sector)	1. Wrap insurance, technology guarantees, warranties, commercial and political risk insurance
3. Hedging (private sector)	1. Derivatives contracts such as swaps, forwards, options etc.
4. Contract design, paid by contracting authority	1. Availability payment mechanisms
	2. Offtake contracts
5. Provision of capital, realised directly by Government or by its own controlled agency or development bank	1. Subordinated (junior) debt
	2. Debt: 2.1 at market condition 2.2 at lower interest rate
	3. Equity: 3.1 at market conditions 3.2 at more advantageous conditions
6. Grants, generally delivered by contracting authority, even if some dedicated fund at national level exists. Tax incentives can be delivered by national or local authorities	1. Lump sum capital grant
	2. Revenue grant: 2.1 Periodic fixed amount (mitigating the demand risk) 2.2 Revenue integration (it leaves the demand risk on the private player)
	3. Grant on debt interests
	4. Favourable taxation schemes for SPV
	5. Favourable taxation schemes for equity investors

Source: OECD and Vecchi V.; taken from OECD (2015c).

Linking traditional infrastructure finance with new diversified instruments and risk mitigation techniques: Collaboration with institutional investors and pooling of capital

131. From an economic perspective, the central case for the use of private financing models rests on whether it can lead to efficiency benefits by harnessing the skills and know-how of private partners combined with commercial incentives. Private finance can represent value for money for the public sector if the additional cost of finance is offset by benefits of risk transfer to the private sector.

132. Allocating risks to the party best able to manage them is crucial for realising efficiency benefits, and optimal allocation is more obvious for some types of risk than others. For example the party best able to manage demand risk is currently a contentious issue in many countries, following experiences with overoptimistic private traffic forecasts on toll road PPPs. Experience with PPPs has shown that there are a number of challenges that need to be considered with respect to risk allocation. These include the capability of, and incentives for, the public sector to design, negotiate and enforce well-designed contracts and the transaction costs (e.g. negotiating and monitoring costs) associated with using different models.

133. Investors seek stability and certainty in the political and regulatory regime. Attracting increased investment can therefore be achieved through the provision of greater long-term policy certainty. Targeted

interventions are also one part of the contribution that the government can make to promoting private sector investment.

134. While different organisational forms have been increasingly used that would permit more private sector involvement, several new forms of collaboration involving institutional investors have been launched in recent years (i.e. pension funds partnering with pension funds, industrial partners as utilities establishing joint companies with financial institutions).

135. On the debt side, the originate-to-distribute model sees commercial banks cooperating with institutional investors through different means (e.g. partnership between banks and institutional investors, securitisation models, direct lending and debt/credit fund vehicles)¹⁶ in order to channel higher lending volumes to infrastructure. On the equity side, initiatives such as the establishment of the African PAIDF, the Philippine PINAI fund and the Marguerite fund in Europe provide examples of how funds can be set up with government involvement to help attract institutional investment to emerging economies and greenfield infrastructure. MDBs can play a role in facilitating investment by establishing equity investment funds, debt funds, by co-investing with other institutional investors, and through the deployment of various risk mitigation techniques outlined in Table 4. Two OECD reports¹⁷ delve into a number of new models to access infrastructure debt and equity.

136. While broadband services have traditionally been provided by large telecommunications companies, new business models are emerging consisting of either independent networks or ones on which local government authorities work together with private companies to ensure affordable access to infrastructure. Investment platforms providing equity or quasi-equity financing from public and private sources are perceived as a solution to address the above mentioned gap in the market, in particular by providing longer term and the higher risk financing required by such projects. Such financing solutions are under design at EU level to address the specific needs of this sector and similar products are expected to be rolled out in other sectors in the near future as well.

137. The 2015 *OECD Business and Finance Outlook* identified tax policy as a key lever affecting investment flows in the infrastructure sector, which includes tax regimes for cross-border investment activities. The OECD Base Erosion and Profit Shifting (BEPS) project proposes reforms to eliminate global tax distortions; this too has the potential to affect global infrastructure finance. From the investor perspective, the tax treatment of interest income, dividend income, and capital gains can affect the demand for certain finance instruments, which needs to be considered when countries analyse domestic bases of savings (taxable versus tax-exempt). Another example of the effects of taxation comes from the United States where interest income on municipal bonds is tax exempt, creating a low-cost source of debt finance for local government authorities.

The current challenges and barriers to infrastructure investing

138. As is the case globally, the willingness of institutional investors and the private sector to finance major investment projects is heavily influenced by the perceptions of a country's investment climate and the broad suite of policy settings and institutions that underpin a country's economy and political

¹⁶ For example, the French bank Natixis has entered into a partnership agreement with the Belgian insurance company Ageas, one of Europe's 20 largest insurers, whereby Ageas intends to build an infrastructure loan portfolio of around EUR 2 billion.

¹⁷ The OECD report on *Private Financing and Government Support to Promote Long-term Investment in Infrastructure* was circulated to G20 Finance Ministers and Central Bank Governors in September 2014. The OECD report on *Pooling of Institutional Investors' Capital – Selected Case Studies in Unlisted Equity Infrastructure* was circulated to G20 Finance Ministers and Central Bank Governors in April 2014.

processes. Infrastructure, in particular, is considered to be vulnerable to high political, regulatory and execution risk, especially in developing countries.

139. Investment is in part held back in structural terms by a lack of incentives to undertake real investment and factors that reduce the returns to investors. These include restrictive product market regulations that reduce the ability of firms to undertake new activities or to enter new markets, especially across borders. The regulation of capital-intensive network industries and ownership restrictions can hold back productive investments. The regulatory environment also needs to be predictable and stable. For infrastructure investment, specific problems related to planning and limited capacity to prepare and execute projects successfully may also hold back investments.

140. Infrastructure investing exhibits different characteristics from other asset classes, which could represent barriers to entry to potential investors. High up-front costs, lack of liquidity and long asset life of the projects require significant scale and dedicated resources both to understand the risks involved and to manage them, resources that many investors are lacking. These characteristics imply that infrastructure investment – at least in the forms in which it is currently offered – may not be a suitable proposition for all investors.

141. Developing countries face additional and, in some cases, stronger barriers to foreign participation in infrastructure investment, including restrictions on investment (for domestic investors, and sometimes for foreign investors), such as heavy bureaucracy and controls, and weak financial infrastructure. Domestic markets in developing countries tend to rely heavily on local and regional banks as well as multilaterals to finance infrastructure projects. In addition to the lack of deep local markets, there are often restrictions on investment capability, such as bureaucracy, controls, taxes, weak financial infrastructure and inefficient debt management. Where access to private debt financing is available, it is often delivered in foreign currency which, not being easy to hedge, creates the risk of currency mismatches.

Problems with infrastructure investment opportunities

- Investors perceive a lack of suitable infrastructure investment opportunities. A long term plan for infrastructure that sets out a firm government commitment to the sector is essential to provide greater transparency and increased certainty for the private sector. It appears that one of the biggest barriers to institutional investors moving into infrastructure investments is the lack of clarity and consistency in government commitments to policies over time. Increasing the number of projects will increase investor experience with infrastructure investment and bring new investors to the market.
- Inappropriate risk transfer: Pension funds generally have a preference for brownfield-type investments, which they see as less risky and more aligned with a long investment horizon. They also need access to both the equity and debt sides of infrastructure deals with adequate safeguards against regulatory and commercial risks. To attract institutional investors into infrastructure projects, the projects have to be structured as attractive investment opportunities for investors, providing risk-return profiles that match investors' expectations and liability structures. Furthermore, infrastructure investments in developing countries tend to involve new infrastructure ('greenfield' investment), which is more risky than the 'brownfield' projects (investing in existing infrastructure) that are more frequently encountered in the more mature OECD economies (Stewart and Yermo, 2012).
- The long-term nature of infrastructure investments may also run up against short-term incentives that may be driving pension funds. Though theoretically long-term investors, pension funds often face short-term performance pressures, or may need to service short-term

obligations and liquidate their assets, which may prevent them from investing in long-term assets such as infrastructure. There may also be behavioural or psychological biases that lead individuals within institutions to make shorter-term as opposed to long-term investment decisions. Asset managers are also accountable to their clients, who may prioritize short-term returns over long-term commitments and be sensible to volatility.

- Lack of expertise in the infrastructure sector and small scale of many pension funds: pension funds generally lack the necessary investment and risk management expertise to deal with infrastructure investments. Evaluating infrastructure investment opportunities can be complicated because the inherent risks that occur over a longer period of time can be difficult to assess. With restrictions on compensation levels in certain institutions, and with a highly competitive market for investing talent, the internal ability of pension funds to execute an effective long-term investment strategy and overcome the difficulties can be very challenging.
- There is a lack of appropriate financing vehicles (lack of collective investment vehicles at scale). Only the largest investors have the capacity to invest directly in infrastructure projects. Smaller pension funds in particular require pooled investment vehicles. Collective investment vehicles have been available, such as infrastructure funds, but problems with high fees and extensive leverage mean that these have become less popular since the financial crisis.
- Regulatory barriers: the move to market-consistent valuations and risk-based solvency standards may indirectly affect the ability of pension funds to invest in infrastructure and other alternative asset classes. Specifically, when discount rates are based on market interest rates, there is a strong incentive to use bonds and interest-rate hedging instruments to reduce volatility in solvency levels, as has been observed in the insurance sector.
- Regulatory barriers in some countries may also prevent institutional investors from investing in such assets. Though investment restrictions are important to protect pension fund members, there may be unintended consequences in terms of preventing investment in infrastructure through bans on unlisted or direct investments.
- In addition, international accounting and funding rules may also inadvertently discourage pension funds from investing in longer-term, illiquid or riskier assets such as infrastructure projects.

Problems with the conditions for investment

- Investors lack high-quality data on infrastructure investments and a clear and agreed benchmark, making it difficult to assess the risk in these investments. Without such information, institutional investors are reluctant to make such allocations. A related issue is that, whilst some countries collect data, which matches the needs of the relevant authorities, there is no international, official, accurate data on the asset allocation of institutional investors in alternative asset classes, which include infrastructure. The OECD has begun to collect this data and to make such comparisons. See next section on addressing the information gap.

- In developing countries in addition to the policy environment, other factors preventing foreign investments are inflation and currency risk¹⁸, potentially restrictive investment requirements, and lack of local capacity and expertise.

142. In addition, there are also challenges particular to ‘green infrastructure’. Reasons for institutional investor hesitancy to invest directly in green infrastructure range from energy and environment regulatory and policy uncertainty including a lack of carbon pricing to risks specific to new technology related projects making it difficult for rating agencies to give sufficient investment grade ratings. Capital along the clean energy project is highly fragmented across equity and debt, and smaller scale deals or energy efficiency projects lack aggregation mechanism. These issues are compounded by a lack of suitable investment vehicles (such as green bonds or funds) providing the liquidity and risk/return profile that institutional investors would need. Furthermore, pension fund trustees, who are not environmental experts and indeed often non-financial specialists, remain cautious when it comes to increasing their exposure to new clean technologies.

¹⁸ Currency risk - particularly relevant for developing countries with volatile financial markets - arises from the change in price of one currency against another. Whenever investors or companies have assets or business operations across national borders, they face currency risk if their positions are not hedged.

SECTION III - RECOMMENDATIONS ON ENGAGING INSTITUTIONAL INVESTORS AND CAPITAL MARKETS

143. Over the past decade, institutional investors, such as pension funds, insurers and sovereign wealth funds, have been looking for new sources of long-term, inflation protected returns. Asset allocation trends show gradual globalisation of portfolios, with increased interest in emerging markets and diversification into new asset classes. Diversification benefits and higher return expectations are increasingly driving investors to emerging market infrastructure, and even to consider investments in greenfield assets. To increase the number of infrastructure projects that are suitable for capital markets financing and promote institutional investor participation, different funding modalities and financial instruments should be made available (i.e. availability based payments).

144. Action is required on several fronts at the same time, addressing both the supply and demand sides of the economy. The challenge is to put savings and financial liquidity to productive use in order to support sustainable jobs and growth. Establishing national infrastructure plans, providing risk mitigation tools, promoting investors education, and the pooling of funds, will all help overcome some of the barriers investors are facing. Improving investment conditions and enhancing local market liquidity through governments bonds would also establish important preconditions (e.g., yield curves, market infrastructure, dealer communities) for the growth and development of corporate bond markets which would ultimately facilitate infrastructure, mortgage, and asset-backed financing.

145. Some countries have taken bold steps by establishing Sovereign Wealth Funds (SWFs) and pension fund systems, creating significant financial resources over time. However, investments are often restricted and there is limited scope for channelling these growing pools of assets into infrastructure development. Changes in the regulatory framework may be needed to facilitate such investments.

Countries may consider the following selected actions:

- **Foster collaborative mechanisms between investors and the creation of pooling of capital especially for smaller investors and between investors and other stakeholders such as banks, MBDs and NDBs.**

Governments can facilitate the establishment of joint ventures between public and private pension funds to pool their resources and facilitate investments in infrastructure and green projects. This will allow for capacity sharing and provide the scale necessary for smaller funds to participate in these projects.

- **Consider risk mitigation instruments and incentives specifically focused on investors in general, including guarantees, coverage of political and regulatory risk guarantees and insurance, credit enhancements, and more diversified insurance offerings, while ensuring their efficacy as well as taking due account of the impact on public finances.**

Specific risk mitigation measures or incentives aimed at investors – as opposed to supporting the commercial viability of the infrastructure project – may be considered. Risk mitigation instruments include guarantees, credit enhancements, and more diversified insurance offerings. Instruments such as guarantees and partial guarantees on investments are a particular consideration for mitigating risks for investors in infrastructure finance. A robust framework for the provision of guarantees should be (i) clear and transparent, (ii) financially sound, (iii) impactful, (iv) designed to address moral hazard issues, and (v) evaluated on a periodic basis.

- **Review financial regulations that may potentially pose unintentional barriers to infrastructure investment by institutional investors, taking into account prudential, investor protection, and overarching financial stability objectives.**

Governments may encourage further investigation to ascertain whether regulatory and other instruments (such as some accounting and solvency rules) are unintentionally and unnecessarily preventing institutional investment in infrastructure. At the same time, as regards consumer protection ensuring consistency with the best interest of members, investors, beneficiaries, policyholders and other relevant stakeholders, long-term and infrastructure investments by institutional investors should be consistent with the prudent person principle and financial regulation objectives, ensuring the security, quality, liquidity, profitability and appropriate diversification of the portfolio as a whole.

- **Review the possibility of bundling assets to reach relevant scale, appealing for institutional investors, including consortia of small scale PPP projects.**

The scale of many individual infrastructure projects is too small for large institutional investors, creating a funding gap that disproportionately affects smaller, low income, and rural communities. Bundling individual projects – where a single consortium provides several small-scale PPP projects in order to reduce the length of the procurement process and transaction costs – may create opportunities that are more desirable to larger scale investors.

The aggregation of small projects can be advantageous for institutional investors to gain exposure and diversification to a set of different assets. This is a distinct possibility for some PPP projects (such as in the social infrastructure sectors) that do not require large amounts of capital. The broadband sector, for instance, shows promise for small-scale investment opportunities in the European Union.

- **Promote the development of project infrastructure bonds to mobilise further financing by institutional investors.**

Besides equity instruments, institutional investors can also be mobilized through project bonds. The observed development is promising to diversify long-term funding and create an attractive asset class, in order to mobilize larger volumes from institutional investors. Project bonds are in the process of being developed both in AEs and EMEs, with promising results in the US, the European Union and Latin America. Here are some recommendations to develop this tool:

- Projects bonds require relatively large size thresholds. A sizeable pipeline of bankable projects represents a prerequisite. They are also more suitable to finance brownfield projects (greenfield projects may also be viable, provided banks co-invest during construction).
- The mitigation of political and regulatory risks is critical to enhance the attractiveness of project bonds. Political and regulatory decisions can directly or indirectly affect the projected cash-flows and the financial sustainability of projects. A credible and lasting framework is needed.
- Risks addressed differ depending on the country and project context. Bonds can be structured to support different risk-return profiles, but they usually require credit enhancement to align the appetite of investors with risk-adjusted returns, usually

through partial guarantees or subordinated debt. This implies a new role for Governments, NDBs and MDBs, so that to crowd in private investment.

- Financial markets must also have reached a certain level of development with (i) well-functioning fixed income markets, along with adequate regulations for issuers and investors, (ii) efficient bank loan markets to finance projects (iii) institutions that can provide credible credit enhancement. programme of project bonds requires a work agenda across the whole value chain of infrastructure financing, as well as well-functioning bond markets
- Infrastructure project bonds are not the silver bullet for infrastructure financing. They need to be considered in some countries as a complementary, though important, financing option, to bank and government financing, as well as other non-bank instruments (e.g. infrastructure funds).
- **Promote the setting of objectives for using MDBs' and NDBs' balance sheets to catalyse private investment, taking also into consideration cost of social safeguards; define measurements and criteria to assess the impact of initiatives that leverage private sector capital in infrastructure.**

The framework based on qualitative and quantitative factors will help governments and MDBs to take stock of instruments available and better evaluate their performance. Ultimately this will help institutions to adapt their business model to crowd in more private sector investment in infrastructure. The OECD through its DAC committee is already undertaking statistical measurement and assessment of Development Finance Institutions.

SECTION IV – ADDRESSING THE INFORMATION GAP AND DEVELOPING INFRASTRUCTURE AS AN ASSET CLASS

Background to infrastructure as an asset class

146. G20 work on long-term investment finance has repeated that there is currently a shortage of readily accessible, consistent and comparable data on investments and the supply of and demand for long-term finance on which to base policy analysis and conclusions. It has become clear that more evidence is needed on how to measure infrastructure support for economic development and wealth creation, describing further the factors and determinants of the magnitude of impact. In addition to understanding public policy decisions regarding investment in infrastructure, for which more detailed information on the impact of infrastructure investment at the macro level is needed, information on viability issues of individual projects at the micro level is lacking. Of key importance for private sector participants is a better understanding of the investment characteristics of infrastructure.

147. G20 Finance Ministers gathering in Shanghai in February 2016 stressed the importance of promoting infrastructure investments as an asset class¹⁹. Promoting the development of infrastructure as an asset class, improving data and information, could support more diversified and innovative financing of infrastructure, which is one of the main priorities for the G20 Chinese Presidency. This section is intended to provide background on the topic and support discussion surrounding the types of measures and data collection efforts that could foster the development of infrastructure as an asset class.

Monitoring and analysing infrastructure at the micro level

148. To arrive at a full understanding of the drivers and impediments of infrastructure investment, micro-based analysis is needed. The main objective of such analysis would be to provide a factual description of changes and policies that can be empirically tested and analysed “internally” by people with decision-making authority over sector policy, regulation, governance, and investment. The insights of this analysis are relevant for various infrastructure stakeholders and have implications for both investment management and public policy.

149. Investors and asset managers would benefit from improved information on performance evaluation and for asset allocation decisions to or within the infrastructure asset class. A better understanding of these risk properties by investors reduces the information gap on this alternative asset class, helping to match suitable investments with investor preferences. A potential outcome could be opening new channels of funds to infrastructure.

150. The findings may also support regulators in determining fair regulated prices by appropriately including risk charges in the costs of capital. Indeed, the same need to create new knowledge on the risks of long-term investment is also patent on the regulatory side. More accurate risk measures may imply lower capital charges, and the more effective and efficient intermediation of long term capital. The results also would highlight which risk management strategies and investment screening capabilities are needed for infrastructure investing.

¹⁹ See Communiqué Meeting of Finance Ministers and Central Bank Governors – Shanghai, 27 February 2016

151. This work will be instrumental to improve public infrastructure procurement as well. A better understanding of the risks and expected financial performance of long-term public-private contracts should both optimise the value-for-money of such contracts from the point of view of the tax payer and help minimise political risk for investors by increasing transparency. Governments get a better understanding of the risks of public infrastructure investments and the risk exposure potentially shifted to the private sector, ensuring efficiency of risk sharing mechanisms (i.e. risk guarantees and pricing of contracts).

152. Such work can shed light on ESG criteria in infrastructure investment, and provide valuable analysis on clean energy projects and green infrastructure. Sustainability, including ESG criteria, is an emerging theme in institutional investment and also infrastructure investment. Investors are increasingly factoring ESG into investment decision and risk management processes. Given their usually large scale and long-term nature, as well as the involvement of many public and private stakeholders, infrastructure assets can be exposed to a series of environmental, social and regulatory risks. While the definition of “sustainable infrastructure” varies between investors and can include for example clean energy projects or social housing, the idea that governance practices and environmental considerations affect long-term risk is today widely accepted. Transparent parameters allowing for adequate monitoring of ESG performance is also important.

Towards infrastructure as an asset class

153. In order to encourage higher levels of investment in infrastructure by institutional investors, improved data and information are necessary. Encouraging a competitive market where pricing and associated risks in infrastructure assets are transparent allows investors to evaluate the risk/return opportunities with enough confidence to make well informed investment decisions. Advancing the dialogue on the subject of infrastructure as an asset class will address four primary areas:

- **Principal/agent problems and asymmetric information:** Infrastructure projects tend to lack transparency due to opaque and diverse structures. This also applies to PPP models. The information required by investors to assess these risk-structures and the infrastructure market in general is lacking or highly scattered, creating uncertainty. The lack of transparency and adequate data increase risks for those engaging in infrastructure financing. In cases where agents (such as investment managers) act on behalf of investors, aligning investor interests with managers’ requires access to data in order to complete the manager selection process, to select appropriate investment products, and to properly monitor managers.
- **Investment mandate ambiguity:** Describing with strong empirical evidence the role of infrastructure investments in the asset allocation process, and integrating infrastructure assets into the asset/liability investment framework. Placing infrastructure assets in a “real asset” category conceptually fits the purported properties of infrastructure, however; a closer look at expected performance and a clearer understanding of these expectations is warranted in order to reduce the risk of asset allocation errors and misspecifications. Additionally, regardless of strategic asset allocation objectives, infrastructure may have a role in meeting liability-driven investment objectives. A strong infrastructure investment mandate can also improve asset/owner governance and alignment of interests.
- **Benchmarking and success metrics for infrastructure investment:** Observing performance of the infrastructure investment universe, and constructing benchmarks based on historical returns creates inputs into the asset allocation process, and permits the evaluation of long-term objectives and success metrics. Infrastructure investments may also be useful components of an inflation hedging benchmark and consequently a liability-hedging portfolio

(complementing inflation protected bonds, equities, or other inflation sensitive assets). Sustainability and green investment goals may also be part of the evaluation process. For regulators, benchmarks provide inputs to perform stress tests and Value-at-Risk (VaR) analysis.

- **Legal and regulatory:** Accounting standards, pension and insurance regulation/supervision, solvency, and governance can all be improved with better access to information about the unique attributes of infrastructure investments.

Asset class defined

154. An asset class is a set of assets that bear some fundamental economic similarities to each other, and that have characteristics that make them distinct from other assets (Greer 1997). Well-specified asset classes will display similar return patterns in varying market conditions and at a more granular level are subject to similar laws and regulations in a particular market or region. Portfolios can be invested across multiple asset classes with different risk and return profiles and correlations, with the objective of diversifying exposures and maximising the Sharpe ratio. Yet low historical correlation of a group of investments is not by itself enough to distinguish it as a separate asset class (ibid). For example, a portfolio of short equities will have a negative correlation to long equities, and may have a positive impact on overall portfolio efficiency, but it does not constitute a separate asset class because the underlying assets are the same.

Long-term infrastructure investments defined

155. The OECD succinctly defines infrastructure as the system of public works in a country, state or region, including roads, utility lines and public building – in essence the tangible backbone of essential goods and services underpinning an economy. Infrastructure investments are direct or indirect stakes in entities that own or operate these assets. Where commodity risk is more present, the infrastructure label is less likely to be applied (Moody's 2015)²⁰.

156. “Discussion about infrastructure is typically animated by a belief or perception that infrastructure is ‘different’” (Beeferman and Wain 2012). From an investment standpoint, infrastructure is often described using categories such as geography, industrial sector, economic or social purpose²¹, or phase of asset development (e.g. greenfield/brownfield), yet it also escapes a widely agreed upon definition. Core infrastructure assets (brownfield) have the following common characteristics: large, long-term assets providing essential services, limited or no competition and high barriers to entry, predictable and steady cash flows with a strong yield component, inflation protection (through built-in contracts or regulated prices), and a lower correlation to the business cycle. These generalised characteristics serve as an indicator of the potential properties of infrastructure as a whole, yet only some of the assets in the universe meet these requirements (Weber and Alfen, 2010).

157. Infrastructure investments often have higher levels of leverage than non-infrastructure investments, presumably because cash flows are less volatile and sponsors of infrastructure projects are

²⁰ Natural resource extraction (such as oil or gas) is not vital to the functioning of an economy; a country can import such commodities. Yet energy distribution networks are fixed and essential (Moody's 2015).

²¹ Economic infrastructure would include toll-roads, bridges, tunnels, airports, seaports, railroads, gas and electricity distribution, water distribution, waste removal, and renewable energy production. Social infrastructure includes schools, correctional facilities, healthcare, and aged-care facilities (Beeferman et al. 2012).

willing to accept higher levels of debt (Beeferman and Wain 2012)²². Broadly citing the literature, high leverage in project finance might actually mitigate certain financial risks by introducing the concepts of the “discipline of debt”²³ and that debt can actually lower the cost of finance, without increasing the cost of equity. Capital structure thus matters greatly in impacting risk and return and must be analysed on a project-by-project basis.

158. Future cash flows in project finance are often defined by contract terms which tend to limit economic exposure, yet the smoothing of unlisted infrastructure equity valuation and infrequency of appraisals can give the appearance of lower volatility, obscuring its true systematic risk exposures. MSCI research has found that the betas of private equity and private real estate increase over time, largely due to this smoothing effect (Gilfedder and Shepard, 2014). For example, as a private equity fund approaches liquidation, more frequent portfolio appraisals and the anticipated exit of private equity stakes through IPOs increases beta, yet the risk in the actual entity being sold may not necessarily be larger than at earlier stages in the life of the investment.

²² Statement is based on a survey distributed by the authors of U.S. public pension funds on their beliefs on infrastructure investments.

²³ Large interest and principal payments can force management to improve performance and operational efficiency. The so called “discipline of debt” (Tuck 2002). Debt payments also reduce free cash flow available for managers to use at their discretion (Helm and Tindall 2009).

SECTION IV - RECOMMENDATIONS ON ADDRESSING THE INFORMATION GAP AND DEVELOPING INFRASTRUCTURE AS AN ASSET CLASS

159. Improving data and information could support more diversified and innovative financing of infrastructure, and also broaden its appeal to a larger base of investors. This is necessary for institutional investors themselves to have the necessary data to analyse the performance of these investments and the confidence to then make allocations. It is also necessary for policy makers to be able to understand and monitor such allocations in order to be able to make appropriate policy responses.

160. Data collection in the infrastructure sector faces several challenges such as the lack of a common definition for infrastructure (i.e. by sector, stage of development, geographic region, or financial instrument); the fact that investors can invest opportunistically or through other allocations (such as private equity or real assets); the different routes to invest in infrastructure (i.e. infrastructure funds, listed companies, corporates etc.). Challenges are due to the fact that projects are often very different from one another and dependent on the regulatory framework or concession agreement, and more broadly on the type of contract used.

Countries may consider the following selected actions:

- **Promote international infrastructure data collection, with the adoption of a template for a preferred set of information to be collected (macro and micro level), including quantitative data on historical cash flows and performance at the project level and qualitative data covering project characteristics and sustainability issues²⁴.**

Governments and regulators could, where appropriate and needed, strengthen formal requirements to provide consistent information on investments by institutional investors in infrastructure, following internationally agreed definitions. This would allow for future monitoring on an international basis. Data collection at a macro-, meso- and micro-level by international organizations and other relevant parties includes the development of a preferred set of information for the analysis of infrastructure investments. Macro-level data such as FDI flows, Capital Account flows, and industry-level data are helpful to analyse investment levels. Project-level data, whether gathered directly from institutional investors, asset managers, banks, or corporations, is useful to analyse the specific investment characteristics of infrastructure assets.

Different institutions are taking different approaches to infrastructure valuation and analysis. Differences lie in the sources of data themselves, in perspective, or in the level of granularity. For instance, one can start by looking at country-level data which is helpful to understand capital flows and market-level regulatory effects on investment. Project level and corporate data is good for understanding the risk/return characteristics of infrastructure assets.

- **Promote standardisation and harmonisation of project documentation²⁵ and of approaches to infrastructure valuation, and analysis.**

²⁴ Building on current work developed by GIH, EDHEC and the OECD, and on note circulated to the G20 in 2015 on Addressing Data Gaps in Long-term Investment.

²⁵ Building on GIH PPP Risk matrix.

Standardisation of project documentation could potentially help to decrease overall costs and could increase project viability. While PPP transactions will always require some degree of asset-specific customisation, a general template for structuring PPP contracts should reduce the cost and complexity of executing a PPP transaction and facilitate broader investor involvement. Recent initiatives such as the GIH PPP Risk Allocation Matrix, aim to develop template contracts for PPPs in order to facilitate private sector involvement.²⁶

The promotion of standardisation should not, however, undermine the need to promote strong ex-ante policy design in developing long-term contracts. Due to the fact that infrastructure assets are long-lived, contracts need to be durable over a long period where change is likely to be inevitable. Policies need to take into account this possibility when considering standardisation.

- **Promote a definition of sustainable and quality infrastructure investment to facilitate data collection on sustainability and resilience factors in infrastructure investment.**

Besides defining the financial characteristics of infrastructure assets, information that describes the social, governance, and environmental factors of infrastructure will help to more broadly define infrastructure as an asset class. This could include the creation of sustainability benchmarks and also the experience of investors that have attempted to measure the sustainability of their infrastructure portfolios.

- **Support initiatives to create infrastructure benchmarks which will in turn help to describe infrastructure as an asset class.**

Benchmarks should describe the investment characteristics and properties of infrastructure debt and equity instruments, helping investors complete their strategic asset allocation and liability benchmarking processes. This will help direct investors and funds investing through third party managers to benefit from vehicles better suited to their needs. For example, the development of take-out instruments for de-risked stages of projects or hybrid investment vehicles (ie Debt funds and Trusts) would allow increased institutional investors involvement.

Several initiatives are underway in the private sector, such as EDHEC Infrastructure's academic research and data gathering on infrastructure assets. An objective of this project could be to create benchmarks for infrastructure performance. Moody's has, for some time, published studies on infrastructure debts which sheds light on the potential investment characteristics of infrastructure. Governments could, where appropriate, support initiatives in the private sector by facilitating data gathering from projects based in their countries. Public institutions could also strive to establish a common knowledge-sharing platform to promote accessibility of data.

What is critical in advancing infrastructure as an asset class is providing easy access to information for all investors, including those investors who have limited resources to perform due diligence on infrastructure assets. The construction of benchmarks and performance histories will in turn facilitate performance analysis and the computation of Sharpe ratios, which will allow investors to compare risk-adjusted returns in infrastructure to other asset classes. This is critical to complete the strategic asset allocation process. Investors should also consider, more generally, how infrastructure assets can address other portfolio objectives such as liability matching.

²⁶ UNECE and PPIAF have also produced work relevant for the standardisation of PPPs.

ANNEX 1

EXAMPLES OF EFFECTIVE APPROACHES IDENTIFIED TO FACILITATE THE IMPLEMENTATION OF THE G20/OECD HIGH-LEVEL PRINCIPLES OF LONG-TERM INVESTMENT FINANCING BY INSTITUTIONAL INVESTORS WHICH ARE RELEVANT FOR THE SECTIONS OF THE SUPPORTING NOTE

Preamble - Pre-conditions for diversified, integrated financing for infrastructure and other long-term investments

- Governments take steps to ensure the policy framework is credible and consistent, which entails credible monetary policy, a responsible fiscal framework, a stable macroeconomic environment, a transparent regulatory environment and a consistent supervisory policy framework.
- Governments take steps to ensure the regulatory framework is as compatible as possible with long-term investments, by promoting trust and confidence by investors and market participants and addressing the most common market failures.
- Governments adopt measures that help to create a supportive business environment, including by reducing administrative burdens and simplifying bureaucratic procedures to the extent feasible, increasing the quality of contract enforcement and the functioning of infrastructure partnerships where they exist, and preventing and fighting corruption in order to provide a good climate for private sector investment.
- Governments implement a regulatory regime that is able to withstand changes in government or in a particular political majority.
- Governments take steps to remove barriers to long-term investment by institutional investors, including factors that hinder the development of long-term instruments and result in illiquidity.
- Governments should put in place framework conditions that are favourable to long-term investment financing.
- Governments seek to achieve an acceptable balance between stability and growth objectives by establishing specific benefits for long-term investments in terms of prudential requirements and taxation, which are supportive of long-term growth, while at the same time adapting supervision to the peculiarities of longer term investments, which entail specific risks, such as early redemption risk or greater sensitivity to interest rate volatility due to longer duration.
- Governments review business regulation, administrative and procurement procedures, and supervision on a regular basis in the context of maintaining regulatory efficiency and effectiveness, while avoiding ad-hoc and frequent changes. Governments eliminate regulations that unduly hinder project delivery and private participation in long-term investment financing.
- Governments establish long-term infrastructure plans to outline their expected future infrastructure priorities.

- Where appropriate, governments may choose to provide opportunities for private sector participation in long-term investment projects such as infrastructure and other relevant projects. From a design perspective, investment opportunities should enable the different parties to earn returns commensurate to the risks they take.
- Formation of institutional mechanisms and governance frameworks for infrastructure project identification, procurement and monitoring committees, legal and regulatory frameworks, with all stakeholders, including potential investors, developers, and contractors, involved in robust consultations before bid documents are prepared
- Efforts should be made to standardise the approach to PPP contracts to make arrangements more accessible for both project sponsors and investors, and encourage the consideration of PPPs as an alternative to conventional procurement...

Section I - Diversifying instruments and optimising risk allocation

- Governments take steps to ensure a sound corporate governance framework, which aims to facilitate effective and appropriate monitoring and control and to promote proper incentives for boards and management to act in good faith and in the interests of their companies and shareholders and to exercise their powers with due care.
- Governments take steps to ensure there are no unnecessary restrictions on the range of long-term government and market financial instruments.
- Governments take steps to improve incentives to long-term investments through facilitating capital market activity and providing a regulatory environment that – committed to the supremacy of prudential principles – lifts confidence and encourages better investment portfolio management and increased contributions of institutional investors to financing of SMEs.
- Governments take steps to broaden both the investor and issuer base in the securities markets to ensure that small firms at every stage of the financial ladder can obtain access to the most suitable financial instruments, including by eliminating the equity gap in early stages of business development via amendments to listing rules and reduced administrative costs and informational burdens associated with listing.
- Governments take steps to expand the range of financial instruments available for small business in order to broaden the SME financing channel, including bonds issued by financial institutions with proceeds earmarked for SME lending, SME private placement bonds, and project bonds.
- In determining which types of projects to pursue or how to undertake them, governments take into account the expected contribution of long-term investment to broader public policy goals.
- 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.

- Governments should ensure that capital markets and financial intermediaries are 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.
- Placing less emphasis on the role of the national development bank, including with regard to infrastructure, in order to crowd-in the private sector, in particular, through capital markets. The intention is to harness domestic and foreign savings to finance new infrastructure, especially economic infrastructure, such as ports, airports, clean energy and railroads.
- Strengthening the system of multi-layer capital markets, developing multi-level stock market, developing the bond market in accordance with regulations, and gradually promoting the development of the OTC market.
- Remove impediments to private investment in infrastructure that derive from long lead times. Reducing timelines for obtaining permits and licenses are a common example. Among the efforts are the following:
- Governments establish a framework to provide for the issuance of capital market instruments to support long-term investment financing, which may include infrastructure asset-backed securities and project bonds.
- Measures are being introduced to further develop the basic infrastructure for capital markets, including payments and settlements, and electronic trading platforms and systems through which securities denominated in the domestic currency can be traded in the international financial markets, thereby helping to provide depth and liquidity.
- Simplifying the processes involved in the public issue and offer of securities, particularly for equities and bonds, in order to encourage companies to raise funds from capital markets.
- With a view to improve access to capital markets ... transit between the alternative stock market and the stock exchange is facilitated.
- An Alternative Bond Market aimed at providing midcaps with a market to issue bonds and short-term securities has been launched in December 2013.

Section II - Equity Instruments for the financing of infrastructure

- Entities other than banks such as collective investment schemes, insurances and securitisation vehicles (SPV) are allowed, under appropriate conditions, to lend directly to companies. Equity crowdfunding for start-up enterprises has been extended to a broader category of “innovative SMEs”; creation of LT private equity, venture capital and debt funds.
- Private Equity Funds and Development Capital Certificates (CKDs). CKDs were introduced in 2009 with the main purpose of developing sources of long-term financing for Mexican companies and infrastructure projects located in Mexico. These vehicles are issued to finance a private equity fund in order to invest in infrastructure projects based in a business plan and certain eligibility criteria determined by the sponsoring manager. More recently, different

financing vehicles for infrastructure have been launched, in particular: i) FIBRA E, which is an instrument for cashing out mature infrastructure projects, including energy projects; ii) Investment Projects Certificates (CerPIs), which emulate a typical private equity structure; and iii) Educational Infrastructure Certificates (CIEs) that channel institutional investors' resources to education infrastructure.

- A New EU Regulation on European Long Term Investment Funds (ELTIFs) to promote financing for infrastructure projects or unlisted companies of lasting duration that issue equity or debt instruments for which there is no readily identifiable buyer. This new type of collective investment framework allows investors to put money into companies and projects that need long-term capital and is aimed at investment fund managers who want to offer long-term investment opportunities to institutional and private investors across Europe, e.g. in infrastructure projects. To benefit from this cross-border passport the new Funds will have to meet rules designed to protect both investors and the companies and projects they invest in.
- Solvency II's long-term guarantees package actively supports a long-term approach to investment by enabling insurers to recognise their ability to safely ride-out periods of asset price instability in their capital requirements. The Standard Formula investment risk-charges, set out in the Delegated Acts, now provide greater incentive for insurers to invest in a wider range of assets through more favourable treatment of EU investment funds, private equity, high quality securitisations, infrastructure project bonds and unrated bonds and loans, particularly where supported by collateral or guarantees.
- Adoption of rules to achieve neutrality in the tax treatment of economically equivalent financing arrangements, and ensure that the tax treatment of a financing arrangement is consistent with the economic substance and commercial reality of the legal obligations set out in the arrangements. These rules operate to classify financing arrangements, as either debt or equity finance, on the basis of economic substance of the arrangement, rather than merely on the basis of legal form. The classification of a financing arrangement as debt or equity then determines the tax treatment of returns.
- Regarding tax neutrality, on the one hand, the government has considerably reduced the tax deductibility of interest payments granted to corporates, which will favour equity financing.
- On the other hand, reforms have been implemented on the tax framework of specific saving schemes. The stock savings plan reform includes two aspects. First, the increase in the upper limit of the traditional plan from the current 132 000 € to 150 000 €. Second, the establishment of SMEs and middle-scale enterprises stock savings plan, with a ceiling up to 75 000 €. This should contribute to the mobilization of households' savings towards the financing of corporate equity.
- Other measures, not targeted at the tax framework but dealing with operational matters, have also been adopted to promote equity financing for mid-caps as well as young and innovative enterprises which inherent risks deter more traditional finance providers from engaging. Initiatives such as providing a clear framework for crowdfunding, improving the schemes supporting venture capital and private equity will all contribute to a higher share of equity in the financing mix of companies.
- The government has set up the world's first investment bank dedicated to accelerating the transition to a green economy, the Green Investment Bank (GIB). With allocated funding of

£3.8bn, the GIB is providing debt and equity finance solutions to innovative, environmentally friendly sectors where there is currently a lack of sufficient support from private markets.

- Project companies are obliged to finance at least 20% of the investment amount with equity. The scope of debt assumption commitment is limited with the senior loans excluding the equity commitment of the project company pursuant to the implementation contract.
- The existing limit of 10 years for Private Equity Funds to hold their participations will be removed and replaced by a different rule that leaves to each PE fund the option to decide the maximum timeframe to hold the participation in their portfolios. This will allow PE funds to invest in LT projects and to adapt their investment policy to the typical and predictable maturity of long term projects.
- A new law promotes the constitution of venture capital entities focused on financing SMEs through equity and debt and makes the current requirements for venture capital entities more flexible.
- A regulation for investment-based crowdfunding platforms is proposed in order to provide a safe harbour for this new funding channel. With the significant expansion of crowdfunding recently, the question on whether to regulate this activity has arisen. The proposal covers both equity and bonds-crowdfunding and loan-based crowdfunding. Limits are established both to the amount individual retail investors can contribute to a project during a twelve month period (3,000 €) and to the amount an individual investors can invest annually through all platforms (10,000 €). Non-retail investor can invest without limits but in all cases projects should be below a 2 million euros threshold (5 million for non-retail investment only).
- Solvency II encompasses some anti-cyclical measures to prevent undesired investment behaviours related to particular market conditions. For instance the capital requirement for equity risk contains a symmetric adjustment, designed to prevent pro-cyclical behaviour ("fire sales") of equities exposures. The capital charge calibrated 'through the cycle' is corrected with an adjustment. The adjustment behaves symmetrically: it is expected to be positive when markets have recently risen, and negative when equity markets have dropped in the previous months. Secondly, under Pillar 2, supervisory authorities may extend the recovery period for breaches of the Solvency Capital Requirement in case of fall in financial markets.
- Supporting the venture capital market, in this case, through more efficient legal and tax rules, which should help attract more resources for investment in innovative firms, for which access to traditional bank financing is often difficult.
- Measures to address the venture capital market's inability to consistently attract private investors, which has resulted in limited availability of venture capital financing for young, innovative, and high-growth firms that often lack both a credit history and the collateral needed to secure a loan at a financial institution.
- Adoption of measures to expand non-banking sources of debt financing and to promote equity investments, including the removal of legal and fiscal barriers to issuance of corporate bonds by unlisted companies (particularly SMEs), granting access to capital markets and enabling the solicitation of national and international institutional investors.

Section III - Engaging institutional investors and capital markets

- Governments adopt measures to promote long-term savings, which should help support the development of institutional investors with business models focused on the longer term.
- When evaluating policies to promote long-term investment by institutional investors, policymakers should ensure its consistency with the best interest of members, investors, beneficiaries, policyholders and other relevant stakeholders, and consider its wider potential public impact. In particular, long-term investment can help achieve broader policy goals such as financial stability, debt sustainability, job creation, inclusive growth, higher living standards, competitiveness, sustainable economic development and green growth.
- Governments ensure that the proper framework conditions are in place to support long-term investment financing by institutional investors. Such conditions include a stable macroeconomic environment, responsible fiscal management, a strong financial sector, and a well-developed system of channelling public and private savings to longer-term investments.
- Governments should ensure that the legal and institutional preconditions are favourable for the development of institutional investors with a longer term investment horizon. Such investors should be adequately regulated and supervised, taking into account their specificities and the risks they face, and in line with relevant international standards.
- Governments offer tax concessions on contributions to retirement savings plans to encourage individuals to save for their retirement; some jurisdictions have taken steps to increase voluntary contributions to pension funds, consisting of payroll deductions, direct deposits to workers' bank accounts, direct debit payments of voluntary savings, provision of online payment arrangements, and the ability to make deposits in retail stores.
- Governments offer tax concessions on the earnings on funds invested in retirement savings plans to encourage individuals to save for the long term).
- A number of jurisdictions seek to mobilize savings by targeting education, which includes general education as well as financial education.
- Governments adopt measures to strengthen long-term savings and prevent any leakages in the system, including via the use of pre-retirement preservation, auto-enrolment as the default option, and tax harmonisation of deductions for different retirement products.
- Governments should promote the development of long-term savings through savings mobilisation policies. 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 saving should be provided and tax impediments removed.
- Governments should also promote the development of long-term savings through pooled investment vehicles and collectively organised long-term savings and retirement plans, increased awareness amongst the population, financial inclusion policies, and the promotion of financial literacy.

- Governments should establish a policy environment to address any market failures which inhibit long-term investment by institutional investors in start-up firms with a high growth potential, and more generally in small and medium-sized companies.
- Governments develop a national strategy to help disadvantaged and/or vulnerable members of the population overcome financial exclusion and build savings and assets, as well as improve their financial literacy. Such programs may be delivered with the assistance of community/non-government organisations.
- Investments that insurance companies make in assets admitted to trading in alternative markets can be considered as assets representative of technical provisions under certain percentages. Those incentives will not be removed with the application of Solvency II. In accordance with Solvency II directive there are no quantitative limitations towards insurers' investments in alternative assets.
- Encourage and support institutional investors, including the national social security fund, to actively participate in capital market investment and expand the spectrum and scale of capital market investment, including fixed-income securities investment, equity investment and infrastructure investment in the open market.
- Draft regulatory framework for "credit funds" places limits on the concentration of assets, the duration of loans, and financial leverage; the funds are also required to adopt suitable organizational and governance mechanisms to manage credit risk.
- Introduction of a favoured regime in order to foster cross-border investments in newly established EU small and medium size enterprises or EU undertakings performing social entrepreneurship activities
- Investment restrictions have been significantly simplified. They are limited to investments in alternative investment funds, investments in financial instruments not traded on regulated markets or investments in connection with goods and foreign exchange exposure. Some binding restrictions of a quantitative nature have therefore been maintained for prudential purposes but their impact will be duly monitored.

Section IV - Addressing the information gap and developing infrastructure as an asset class

- Development of a National Infrastructure Construction Schedule to provide certainty and transparency to infrastructure investors and constructors in relation to public infrastructure projects coming to the market; the web-based resource facilitates private sector engagement by promoting upcoming investment opportunities to both domestic and international investors.
- Ensuring periodic issuance of a report or a public announcement examining all key dimensions of investment for the benefit of the investor community.
- Governments may wish to make long-term commitments to building roads, bridges, etc., as well as other non-transport related public infrastructure assets that promote productivity and economic growth.
- Improving project planning and developing pipelines of suitable projects.

- Standardisation and harmonisation of projects in different sectors and employing different structures (e.g. PPP, concessions, etc.) as a means of addressing complex project structuring and preparation, which has been characterized as including a higher-risk construction phase, renegotiation risk, small-size projects, lack of standardization of project structures, lack of administrative/project management capacity, long lead times, and lack of cross-border standardization and harmonization of national technical standards
- Consultation to develop a framework for simple, transparent and standardized securitization instruments, which would be able to receive a more risk-sensitive prudential treatment and would notably increase the transparency and consistency of key information for investors
- Development of standardized legal documents and PPP procurement practices, in particular at sub-national level
- Development of standardized documentation, accompanied by capacity building instruments like tool-kits and training programs, information dissemination and communication strategies, which has helped empower authorities to not only develop a pipeline of commercially viable PPP projects but also to implement the projects on the ground
- Where appropriate, governments should provide opportunities for private sector participation in long-term investment projects such as infrastructure and other relevant projects via, for instance, public procurement and public-private partnerships.
- Investment opportunities should enable the different parties to earn returns commensurate to the risks they take.
- Proper planning and effective management of such initiatives is recommended in order to ensure a regular, coherent pipeline of suitable projects. These initiatives should be supported by a transparent, sound and predictable regulatory framework and subject to effective monitoring and accountability. They also require capacity building in government at both the national and local level.
- Introduction of Infrastructure Debt Funds, which aim at raising low-cost long-term resources for refinancing infrastructure projects.
- Introduction of Infrastructure Investment Trusts and Real Estate Investment Trusts, which are trust-based structures that maximize returns through efficient tax pass-through and improved governance structures.
- Development of a transparent, harmonized and accessible infrastructure asset class, with longer-duration instruments: infrastructure debentures have been introduced to promote private long-term financing of investments, by giving tax breaks (Income Tax and IOF) for capital market instruments, and creating sources of long-term funding that are viable alternatives to the national development bank.
- Improving the basic legal and regulatory environment in order to support the development of financial instruments for the financing of long-term infrastructure projects. A variety of such financing tools have been considered, including bank lending, corporate bonds, asset-backed securities, and venture investment funds.

- Governments take steps to strengthen infrastructure investment by improving the competitive environment, including by reforming the administrative and court procedures for antitrust violations and the enforcement of cartel law.
- Governments examine ways to improve information on infrastructure investment plans and projects of national, regional and local authorities to attract private sector financing.
- Governments remove impediments in the tax system that may discourage private sector investment in infrastructure, but without sacrificing fiscal prudence and the broader goal of neutrality of the tax system.

ANNEX 2

SELECTED EXAMPLES OF RECOMMENDED POLICY STEPS TO DIVERSIFYING SOURCES OF INFRASTRUCTURE FINANCE²⁷

Preamble:

- Australia: the macroeconomic policy framework in Australia has played an important role in facilitating private investment by fostering macroeconomic stability. The main pillars of this framework are a flexible exchange rate, an open capital account, an inflation-targeting independent central bank, and fiscal policy that is focused on transparency and medium-term sustainability.
- United Kingdom: tax incentives have been provided, as for example in the form of a preferential business income tax for projects related to public infrastructure construction, environmental protection, and energy and water conservation. For example in the summer budget 2015, the government announced further cuts to the rate of corporate taxation. Cutting corporate tax increases the return companies receive on investment, therefore incentivising the business investment that is vital to productivity growth.
- South Africa plans the implementation of tax-free savings accounts.
- India: with a view to enhancing domestic saving and, in particular, household financial saving, the union budget for 2014-15 had increased the exemption limit for personal income tax, enhanced the (financial) investment limit for claiming deductions from taxable income and had reintroduced the KisanVikasPatra, a very popular saving instrument among small savers. The Indian Government has also increased public infrastructure spending in order to crowd in private investment.
- Also in India, the Employees' Provident Fund Organization (EPFO) is a domestic pension fund based in India with one of the largest Assets under Management (AUMs) in the country. A new investment pattern has been notified for EPFO, which provides for specific targets for investment in infrastructure as an asset class.
- India: since July 2014, RBI has permitted banks to issue long-term bonds with a minimum maturity of seven years to raise resources for lending to (i) long term projects in infrastructure sub-sectors, and (ii) affordable housing.
- Indonesia: to expand access to finance and financial services, particularly for those at the bottom of the pyramid, the government has set national strategy for financial inclusion.
- Mexico: implementation of international electronic platforms and systems through which securities denominated in Mexican pesos could be traded in the international financial markets, providing depth and liquidity. These platforms could be used for the more than 250 issuers listed in the Mexican Stock Exchange.

²⁷ Source G20/OECD Report on G20 Investment Strategies –Volume 1

- Turkey has simplified the process involved in the public issue and offer of securities, particularly for equities and bonds, in order to encourage companies to raise funds from capital markets. Also, in order to enhance long-term savings, Turkey has introduced new incentives and governance principles for the private pension system. The private pension system now holds 2.5 times the assets it held as of 31.12.2012.
- Australia: The National Infrastructure Construction Schedule (NICS) is a web based resource that enables Australian governments and industry to better plan their forward work and investment programs. The NICS helps facilitate private sector engagement by promoting upcoming investment opportunities to both domestic and international investors.
- China's 13th Five-Year Plan of National Economic and Social development (2016-2020), which will outline the investment priorities in the next 5 years.
- Spain's PITVI (Plan de Infraestructuras, Transporte y Vivienda). The primary goals of PITVI in terms of investment are to complete the main structuring transport axes, to strengthen the intermodal connections and to provide certain strategic infrastructures, such as cross-border connections.

I. Diversifying instruments and optimising risk allocation

- **Promote cooperative and targeted risk allocation mechanisms amongst the various financial stakeholders active on the infrastructure spectrum, including MDBs and NDBs, banks, companies, institutional investors and governments, positioning the different actors depending on their risk profiles and institutional objectives and favouring joint actions, securitisation and balance sheet optimisation.**
- **Develop innovative governance frameworks (including innovative forms of Public-Private Partnerships (PPP) and Islamic sukuk financing) to enable infrastructure sustainability and facilitate private financing, including with the support of government through financing approaches such as asset recycling, land value capture, special assessment districts, and tax increment financing. Strengthen institutions to ensure adequate design and transparency.**
- Indonesia has initiated further alternative access of financing for infrastructure, in particular Islamic sukuk. Indonesia's path in developing Projects-Based Sukuk (PBS) was initiated as part of strategist in infrastructure financing and diversifying risks.
- Australia's Government's Asset Recycling Initiative provides the state and territory governments with incentives to privatise existing infrastructure assets, and reinvest the proceeds in productivity enhancing infrastructure. The Initiative (running from 2014 to 2019) is expected to support over A\$30 billion in new infrastructure activity and provide investors with opportunities to purchase mature, brownfield infrastructure assets.
- In Korea the current PPP have been simplified into two forms of system, Build-Transfer-Operate (BTO) and Build-Transfer-Lease (BTL). All risk will be burdened by either the private sector or the government. Because a BTO system puts high risk on the private sector, the government usually provides excessive financial support and the fee is

relatively high. The Korean government will adopt a new PPP model which is middle risk and middle return structure. The public and private sector will each share any losses and profits from projects. It will introduce a BTO-rs system in which the public and private sector share the gains and losses at a certain ratio. It will also introduce a BTO-a system in which the government preserves certain level of investment cost including the facility investment and operation expenses. On the profit side, the two systems are similar in that the public and private sector share it. On the loss side, they are different in that loss from the private sector is limited to certain level in BTO-a system, but not in BTO-rs system. BTO-a system is thus a little bit lower risk and lower return structure than BTO-rs system.

- **Promote reliable long-term infrastructure funding for financing of projects to ensure adequate revenue streams that attract private investment.**
- **Encourage diverse channels of debt financing for infrastructure projects, in particular through non-bank channels, including syndication of bank loans through capital markets, the development of a robust project finance market and structure, securitisation and the formation of lending consortia. Develop take-out instruments for de-risked stages of projects or hybrid investment vehicles.**
 - India's Government has been introducing new, innovative instruments for attracting long term investment in infrastructure. Infrastructure Debt Funds (IDFs) aim at raising low-cost long term resources for refinancing infrastructure projects. IDFs introduced by the Government of India aim at refinancing of existing debt through take out. Refinancing of projects improves the risk profile of the project post commencement of operations. The reduced risk perception and recalibrated based returns at different periods trigger such refinancing.
 - Municipal bonds in the United States accrue tax-exempt interest for investors, which has the effect of lowering the borrowing cost for municipalities that issue bonds through capital markets to finance infrastructure projects.
- **Encourage the formation of a secondary market for infrastructure; Develop specific products to improve access to capital market financing for infrastructure, including new vehicles to foster investors participation (equity or debt, public and private) in infrastructure projects and recycling of capital through securitisation.**
 - In April 2015, the Tokyo Stock Exchange opened a listed infrastructure fund market.
- **Review the financing needs and instruments of small-scale infrastructure projects, which may be different from large-scale infrastructure, which may be different from large-scale infrastructure. Promote project pooling, social and development impact investment instruments, and building networks of investors with local authorities and partners.**
 - Australia's Renewable Energy Target programme consists of the Large-scale Renewable Energy Target which supports investment in renewable energy power stations and the small-scale Renewable Energy Scheme which encourages household take up of renewable energy
- **Enhance the capacity of corporations (including public utilities and state-owned enterprises (SOEs)) to invest equity and debt capital in infrastructure projects adopting more efficient structures (i.e. through corporate governance reform) or increasing their**

access to local and international debt markets (i.e. improving corporate capability to obtain a credit rating).

- In Mexico and Brazil governments are looking at new corporate governance regimes for State Owned enterprises.
- In order to foster investor trust, the Turkish government enhanced corporate governance regulation for listed companies to include mandatory implementation of several corporate governance principles.
- The Code for Responsible Investing in South Africa (CRISA) gives guidance on how the institutional investor should execute investment analysis and investment activities and exercise rights so as to promote sound governance.
- The government of Italy signed an agreement with bank foundations (key shareholders of banks) to enhance the transparency and effectiveness of bank foundations' governance.
- **Review the efficiency of tax policies for infrastructure finance, noting the tax treatment of debt and equity in the capital structure.**
 - In the United Kingdom, tax incentives have been provided, as for example in the form of a preferential business income tax for projects related to public infrastructure construction, environmental protection, and energy and water conservation. For example in the summer budget 2015, the government announced further cuts to the rate of corporation tax. Cutting corporation tax increases the return companies receive on investment, so incentivizes the business investment that is vital to productivity growth.
- **Address and take into consideration the nature of investment (greenfield/brownfield, domestic/foreign) and its risk/return characteristics in the identification of relevant financing and funding mechanisms.**
- **Review the financing needs and instruments of small-scale infrastructure projects, which may be different from large-scale infrastructure.**
 - Australia's Renewable Energy Target programme consists of the Large-scale Renewable Energy Target which supports investment in renewable energy power stations and the small-scale Renewable Energy Scheme which encourages household take up of renewable energy

II. Equity Instruments for the financing of Infrastructure

- **Facilitate the establishment of robust unlisted infrastructure equity markets; Review the ability of equity funds to access infrastructure assets in the local market, including the suitability of greenfield assets for existing business models, and also the local laws that govern such vehicles.**
- Closed-end funds with long-term horizons: Funds have been launched by asset managers with 25 year investment terms and fee structures that better align investment objectives with the long-term life of infrastructure assets. Such funds are also able to take on

construction risk in greenfield development. The expansion of some funds into emerging markets is a likely next-step in the evolution of infrastructure fund management.

- **Review the availability of qualifying assets for diverse listed equity instruments, including existing equity business models such as Real Investment Trusts (REITs), Master Limited Partners (MLPs), trusts and open- and closed-end funds**
 - Closed-end funds in the United Kingdom: A handful of closed-end fund structures have been launched in the UK, such as Greencoat UK Wind, which is a listed equity instrument designed to invest in operational renewable energy assets.
 - The Master Limited Partnerships Parity Act in the United States seeks to add certain renewable energy assets such as wind and solar projects to the qualifying assets for MLP structures. Such an amendment to securities law would broaden the scope of MLPs to include other infrastructure sectors. MLPs, which provide tax-efficient structures for investors, are already active in other sectors of infrastructure finance, such as mid-stream energy.
 - Proposals to include revenues on the sale of electricity generated from solar panels installed on buildings as qualifying income in REITs has the potential to expand the financing capability of REITs in advancing the growth of smart grids and micro-grids.
 - In recent years, Turkey has launched new instruments for enhancing private investment in infrastructure assets. Introduction of "Infrastructure-based REITs" whose shares have to be sold to public or qualified investors is one of the most significant developments.
 - In April 2015, the Tokyo Stock Exchange opened a listed infrastructure fund market.
- **Encourage the formation of investment platforms and partnerships where government, NDBs and MDBs can leverage private sector investment.**
 - CKD Infraestructura México: Caisse de Dépôt et Placement du Québec (CDPQ), a large Canada-based pension fund, and a consortium of Mexican institutional investors, together launched a co-investment vehicle for infrastructure projects in Mexico. The partnership effectively combines experienced leadership in infrastructure investment management (through CDPQ) and local market networks. A particularly noteworthy characteristic of this example is that the agreement will include private markets investment through CDPQ (51% stake) while the remaining 49% minority interest will be listed on the Mexican stock exchange as a trust, held by leading Mexican pension funds.
 - Infrastructure investment platforms: A number of examples exist including the Pension Investment Platform's (PiP) Multi-Strategy Infrastructure Fund in the United Kingdom, the European Bank for Reconstruction and Development's Equity Participation Fund, and the European Investment Bank's platform, which has also supported greenfield investment.
 - in recent years, Chinese government has launched co-financing-funds with the Inter-American Development Bank (IDB) and the African Development Bank (AfDB), and established the Silk Road Fund, the China-LAC Industrial Cooperation Investment Fund (CLAI Fund), and the China-Africa Fund for Industrial Cooperation (CAFIC) to promote

diversification of financial instruments. These funds could strengthen the synergy effects and catalyse financing in the infrastructure field.

- India's Government has been introducing new, innovative instruments for attracting long term investment in infrastructure. Infrastructure Investment Trust (InvITs) and Real Estate Investment Trusts (REITs) are trust-based structures that maximize returns through efficient tax pass-through and improved governance structures.
- **Review risk mitigation and incentives that especially encourage equity investment**
- **Promote synergies between MDBs and NDBs and the broader equity market base, including through co-financing facilities, insurance pools, wider range of currency hedging tools, and asset securitisation.**
- **Exchange experience in relevant fora on successful initiatives in other jurisdictions**

III. Engaging institutional investors and capital markets

- **Foster collaborative mechanisms between investors and the creation of pooling of capital especially for smaller investors and between investors and other stakeholders such as banks and MBDs and NDBs**
 - In the partnership/co-investment model, an institutional investor invests in infrastructure loans originated by a Mandated Lead Arranger (MLA) Bank. The MLA organises a syndicate and retains a pre-agreed percentage of each loan in its loan portfolio, selling the remaining portion to institutional investors. With this co-investment, an institutional investor can build a portfolio of infrastructure loans and can rely on the servicing of the loans in the portfolio provided by the originating bank. Recent examples are the partnership set up between Natixis and insurance company Ageas and the partnership between Crédit Agricole and Crédit Agricole Assurances
- **Consider risk mitigation instruments and incentives specifically focused on investors, including guarantees, coverage of political and regulatory risk guarantees and insurance, credit enhancements, and more diversified insurance offerings, while ensuring their efficacy as well as taking due account of the impact on public finances.**
 - The European Commission's Investment Plan for Europe is setting up the European Fund for Strategic Investments (EFSI) in partnership with the European Investment Bank (EIB), built on a guarantee of EUR 16 billion from the EU budget, combined with EUR 5 billion committed by the EIB. Based on prudent estimates from historical experience, the multiplier effect of the Fund will be 1:15. In other words, for every public euro that is mobilised through the Fund, EUR 15 of total investment, that would not have happened otherwise, is generated. The focus of the Fund is to invest in infrastructure, such as in energy networks as well as transport infrastructure; education, research and innovation; renewable energy; and in SMEs and mid-caps. In order to meet these objectives, the EIB is also developing new equity products and financing mechanisms
 - In India government's financial support mechanisms like the Viability Gap Funding Scheme (VGF) and a Project Development Fund (PDF) are among the initiatives that create capacity in government entities to identify, design and structure bankable PPP projects. The VGF Scheme provides financial support in the form of grants, one time or deferred, to identify

PPP projects to make them commercially viable by subsidising the capital cost. The PDF provides financial support for project development by financing part of the project development expenses of project authorities. These government support mechanisms, along with the development of standardised documentation and capacity building instruments like tool-kits and training programmes, information dissemination and communication strategies through a dedicated website for PPPs, have helped empower authorities to not only develop a pipeline of commercially viable PPP projects but also implement the projects on the ground.

- The UK Government introduced a credit guarantee scheme for infrastructure projects in 2012. The scheme runs until March 2021 and is capped at a maximum value of GBP 40 billion (excluding interest). Both Greenfield and Brownfield assets are eligible in return for a commercial fee. The projects covered by the scheme assume the UK national credit risk, the Treasury guaranteeing all interest and principal payments to the lender. The fee makes the guarantee scheme different from state subsidized lending, which would not be in line with EU policy. The fee is calculated on a case-by-case basis, using market-oriented methods. Fees cannot be modified after signing of the guarantee agreement.
- Mexico's Federal Government is working on designing and developing infrastructure financing vehicles and credit enhancement measures, such as guarantees, loans or subordinated debt from NDBs, which could mitigate projects' risks and foster institutional investors' participation in infrastructure financing. Likewise, the Federal Government will take further actions in order to develop project bonds for specific projects.
- **Review financial regulations that may potentially pose unintentional barriers to infrastructure investment by institutional investors, taking into account prudential, investor protection, and overarching financial stability objectives.**
 - The European Commission, together with Member States, is reviewing EU and national procedures and legislative frameworks with the aim of identifying possible actions to reduce administrative burdens and unlock investment potential for infrastructure projects. Targeted action by the Commission to improve the functioning of the Single Market in some essential areas (digital, energy, transport and services) will be developed in 2015 with a focus on measures conducive to investment at the EU level such as the Capital Market Union.
- **Bundling assets to reach relevant scale, appealing for institutional investors, including consortia of small scale PPP projects.**

- In the UK, the Priority School Building Programme (PSBP) is a programme to address the needs of the schools most in need of urgent repair. Through the programme, 260 schools will be rebuilt or have their condition needs met by Education Funding Agency (EFA). The first school was opened in May 2014. Under the PSBP, EFA will deliver 5 batches of 46 schools through private funding. These batches will be delivered through ‘PF2’, the government’s new approach to private finance, and have a funding requirement of approximately £700 million. To deliver this private finance funding, EFA developed and procured a financing model (‘the aggregator’) which will aggregate the funding requirements across the 5 batches. By aggregating funding requirements, the UK has been able to access cheaper finance and streamline procurement by using standard finance documents for each batch of schools. Aviva and the European Investment Bank are each expected to provide around 50% of senior debt and INPP will provide mezzanine debt.
- In the United States, the Build America Investment Initiative’s (BAII) Interagency Infrastructure Finance Working Group (WG) recommends that USDA begins a broader dialogue with relevant federal agencies on structuring asset bundles and the consequences of transferring these bundled assets
- **Promote the setting of objectives for using MDBs and NDBs balance sheets to catalyse private investment, taking also into consideration social safeguards; define measurements and criteria to assess the impact of initiatives that leverage private sector capital in infrastructure.**

IV. Addressing the information gap and developing infrastructure as an asset class

- **Promote international infrastructure data collection, with the adoption of a template for a preferred set of information to be collected (macro et micro level), including quantitative data on historical cash flows and performance at the project level and qualitative data covering project characteristics and sustainability issues.**
- European Insurance and Occupational Pensions Authority (EIOPA): EIOPA reviewed the characteristics of both infrastructure debt and equity financing instruments in order to determine whether such investments warrant modifications to the standard formula for risk charges for insurance companies. EIOPA recommended to the European Commission in September 2015 that a separate asset class for certain qualifying infrastructure investments should be created under the Solvency II guidelines. As follow-up work, EIOPA is undertaking further work on defining criteria to identify safer debt or equity investments in infrastructure corporates and on appropriate calibrations for such investments.
- US: A working group set up by the Treasury has recently recognised that the absence of an infrastructure return benchmark or index reduces the investment community’s ability to evaluate PPPs. It was recommended that the Department of the Treasury convenes financial data providers and infrastructure market participants to explore the possibility of developing a U.S.-centric infrastructure return index for one or more sectors.
- Government of South Africa and the World Bank are working to establish a “Knowledge Hub” in South Africa. The objective of the Knowledge Hub is to support evidence based implementation support for service delivery, or “knowledge in action”. This Hub intends to fill a critical gap in connecting the fragmented knowledge space, bringing in the Bank’s global expertise of practitioners in implementing development solutions, and in taking it to scale.

- **Promote standardisation and harmonisation of project documentation and of approaches to infrastructure valuation and analysis.**
 - China: The government has improved the PPP operating guidelines to provide full cycle regulation for operating procedures from project identification, preparation, procurement, execution to handover. The contract guidance and the standardized contracts for different industries and sectors have also been formulated.
 - Italy: the Government is considering strengthening the governance of public investment with regard to the involvement of the private sector, including through the establishment of a specialized unit to assess the bankability of sizeable projects, define standards, contract models and public tenders and improve PPPs capability.
- **Promote a definition of sustainable and quality infrastructure investment to facilitate data collection on sustainability and resilience factors in infrastructure investment.**
- **Support initiatives to create infrastructure benchmarks which will in turn help to describe infrastructure as an asset class. Benchmarks should describe the investment characteristics and properties of infrastructure debt and equity instruments, helping investors complete their strategic asset allocation and liability benchmarking processes.**

ANNEX 3

TABLE: CURRENT AND POTENTIAL ALLOCATION OF INSTITUTIONAL INVESTORS TO EMERGING MARKET INFRASTRUCTURE

Institutional Investors	AUM USD	Current Investment in Infrastructure	Asset Allocation Scenario- Infrastructure	Allocation	Current Investment in EMEs	Potential Investment in EMEs infrastructure	Comments
OECD Institutional Investors	US 80tn	1% on average implies USS 800bn-mostly in OECD	Increase to 3% (5%) on average implies USD 2.4tb (USD4tn)		Estimated 10% in EMDE in general- but very small in Infrastructure	5% EME of 3% in Infrastructure = USD 120bn 10% EME of 5% in infrastructure = USD 400bn	Limited by both supply (e.g., available projects and assets) and demand factors (capacity, investor regulation, liquidity needs)
Emerging Market Institutional Investors	USD 5tn	< 1% on average - 0.5% would imply USD 25bn	Increase to 3% on average implies USD 150bn		High percentage in EME	80% EME of 3% = USD120bn 70% EME of 5% = USD175bn	Growth potential - e.g. EMEs Pension funds currently \$2.5 trillion AUM estimated to rise to USD 17tn by 2050
Of which: EME PPRFs/SSFs	USD 1tn	Limited - some examples - up to 10%	Increase to 5% implies USD 50bn		High Percentage in EME	70% of 5% assets = USD 35bn	High targets- often the largest source of capital in a developing country
Sovereign Wealth Funds	USD 4tn	Unclear - 2% implies USD 80bn	Increase to 5% implies USD 200bn		Relatively high in EME	30% EME of 3% in Infra= USD36bn 50% EME of 5% in infra = 100bn	Many new EME SWF being set up to specifically invest in domestic infrastructure
Other global institutional capital (asset/wealth managers)	USD 20tn	Assumed 1% on average implies USD 200bn	Increase to 3% on average implies USD 600bn		Very small in EME	10% EME of 3% in infrastructure= USD 60bn	
Total						USD 300-700bn	

Source: World Bank, IMF, and OECD (2015), Capital Market Instruments to Mobilize Institutional Investors to Infrastructure and SME Financing in Emerging Market Economies, Report for the G20, World Bank Group, Washington D.C.

LIST OF ABBREVIATIONS

ARI	Asset Recycling Initiative (Australia)
BEPS	Base Erosion and Profit Shifting
CDPQ	Caisse de Dépôt et Placement du Québec
DAC	Development Assistance Committee (OECD)
EBRD	European Bank for Reconstruction and Development
EDHEC	Ecole des Hautes Etudes Commerciales du Nord
EIB	European Investment Bank
ESG	Environmental, social and governance
ETF	Exchange Traded Fund
EU	European Union
FDI	Foreign direct investment
G20	Group of 20
GIH	Global Infrastructure Hub
GP	General Partnership
IIWG	Infrastructure and Investment Working Group
IMF	International Monetary Fund
InVIT	Infrastructure Investment Trust
MDB	Multilateral development bank
MLP	Master Limited Partnership
NDB	National development bank
OECD	Organisation for Economic Co-operation and Development
PAIDF	Pan African Infrastructure Development Fund
PFI	Private Finance Initiative (UK)
PFI	Public finance institution
PINAI	Philippine Investment Alliance for Infrastructure
PPP	Public-private partnership
PPRF	Public pension reserve fund
REIT	Real Estate Investment Trust
SME	Small and medium sized enterprise
SOE	State-owned enterprise
SPV	Special Purpose Vehicle
SWF	Sovereign wealth fund
UN SDGs	United Nations Sustainable Development Goals
VaR	Value-at-Risk
WACC	weighted average cost of capital
WBG	World Bank Group

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