



RISK AND RETURN CHARACTERISTICS OF INFRASTRUCTURE INVESTMENT IN LOW INCOME COUNTRIES

This report has been prepared by the OECD, with inputs from the World Bank Group, for the 4th Meeting of the G20 Development Working Group being held on 14-16 September 2015 in Antalya, Turkey. This paper responds to the G20's request for a report which:

- draws together information on the specific factors affecting risk perceptions in Low Income Countries (LICs), including in relation to different parts of the project preparation and development cycle; and which
- identifies practical approaches and initiatives utilized successfully by a range of organizations to mitigate risk, manage the information asymmetry, directly address risk in investing in infrastructure in LICs, and change incentives in MDBs to move to a more enabling culture.

Recognizing a general lack of quantitative data available on the risk and return characteristics of infrastructure in LICs, this initial brief note is largely based on qualitative assessments, building on previous work already completed by the WBG, the OECD and other International Organizations (IOs).

Both the OECD and the WBG recognize that additional efforts are required in this area. Some suggested options for carrying this initiative forward under future G20 Presidencies are set out in the report.

Contacts:

Federico.Bonaglia@oecd.org; Raffaele.Dellacroce@oecd.org;
mboseley@worldbank.org; fruiznunez@worldbank.org.

TABLE OF CONTENTS

RISK AND RETURN CHARACTERISTICS OF INFRASTRUCTURE INVESTMENT IN LOW INCOME COUNTRIES	3
PROSPECTIVE NEXT STEPS AND G20 ROLE.....	3
1. BACKGROUND	5
2. POTENTIAL ROLE OF INSTITUTIONAL INVESTORS IN INFRASTRUCTURE FINANCING ...	8
Institutional investment is on the rise.....	10
Attracting foreign investment while making use of domestic sources of capital	12
3. ANALYSIS OF RISK IN INFRASTRUCTURE	14
Classification of Risk in Infrastructure	14
The Risk Management Environment.....	16
Risks Specifically Related to LICs.....	17
4. ROLE OF OFFICIAL DEVELOPMENT ASSISTANCE (ODA) IN ADDRESSING RISKS	21
Capturing risk mitigation instruments for development.....	21
ANNEX A: WORLD BANK GROUP MATRIX OF GUARANTEE PRODUCTS.....	25
REFERENCES	26

Tables

Table 1. Classification of Risk linked to Infrastructure Assets	16
---	----

Figures

Figure 1. Total assets by Type of Institutional Investor in the OECD, 2001-13	10
Figure 2. Importance of pension funds relative to the size of the economy in selected non-OECD countries, 2013.....	11
Figure 3. The Growing Importance of Pension Funds, 2008 and 2013	12
Figure 4. Amounts mobilised from the private sector in the infrastructure sector through guarantees, syndicated loans and shares in CIVs, 2012-14	22
Figure 5. 5A, 5B & 5C: Key findings of the 2013 Survey on Guarantees.....	22

Boxes

Box 1. Related Work for the G20 Investment and Infrastructure Working Group.....	7
Box 2. Who are the Institutional Investors in Infrastructure and How do they Work?	9
Box 3. Risks and Private Participation in Infrastructure.....	19

RISK AND RETURN CHARACTERISTICS OF INFRASTRUCTURE INVESTMENT IN LOW INCOME COUNTRIES

Introduction

In September 2014, the Group of Twenty (G20) Development Working Group (DWG) agreed to initiate a dialogue on factors affecting perception of risk in Low Income Countries (LICs), with a view to better inform investor risk management and mitigation approaches. As a first step in this initiative, it was agreed to explore the possibility of facilitating engagement between institutional investors and other potential stakeholders. It was also agreed that the DWG should undertake this work in coordination with the G20 Investment and Infrastructure Working Group (IIWG).

To take this work forward, the DWG invited the Organization for Economic Cooperation and Development (OECD) and the World Bank Group (WBG) to prepare a report, which takes into account the 2012 Report on Misperceptions of Risk and Return in Low Income Countries¹, with the following objectives:

- *To draw together information on the specific factors affecting risk perceptions in LICs, including in relation to different parts of the project preparation and development cycle;*
- *To identify practical approaches and initiatives utilized successfully by a range of organizations to mitigate risk, manage the information asymmetry, directly address risk in investing in infrastructure in LICs, and change incentives in MDBs to move to a more enabling culture.*

Recognizing a general lack of quantitative data available on the risk and return characteristics of infrastructure in LICs, this initial brief note is largely based on qualitative assessments, building on previous work already completed by the WBG, the OECD and other International Organizations (IOs). On this basis, this note seeks to identify the key risk factors governments should consider in designing effective instruments to mobilize institutional investors to participate in infrastructure transactions in LICs.²

Both the OECD and the WBG recognize that additional efforts are required in this area and in the next Section of this Report, concerning “Prospective Next Steps and G20 Role”, we have set out some suggested options for carrying this initiative forward under future G20 Presidencies.

¹ Report prepared by Roland Berger for the G20 Presidency in 2012, available at <http://www.g20india.gov.in/pdfs/F-2012-misperception.pdf>.

² This note focuses on risks in infrastructure for institutional investors. For further analysis on risks in infrastructure, see also the forthcoming work for the G20 IIWG: OECD (2015) ‘Mapping Channels for Investment in Infrastructure: a Taxonomy of Instruments’, and a forthcoming Note on *Capital market instruments to mobilize institutional investors to infrastructure and SME financing in Emerging Market Economies* prepared jointly by the WBG the OECD and the IMF, which will provide an in-depth view on the instruments to leverage institutional investors capital in Emerging Market Economies. For further OECD analysis see also the OECD Institutional Investors and Long Term Investment project at www.oecd.org/finance/lti

PROSPECTIVE NEXT STEPS AND G20 ROLE

The following list sets out some options for consideration by the G20 as to potential follow-up work in regard to the issue of Risk and Return Characteristics of Infrastructure Investment in LICs:

- There is a clear need for additional data on private capital mobilised for infrastructure investments and the historical performance of private sector infrastructure investments in LICs, including data on returns on equity and on long-term debt default and recovery rates. As part of this effort, the evaluation of MDBs' data on financed infrastructure projects could be of value.
- Further differentiation of risks linked to specific infrastructure sectors, financing parameters and political setting could be envisaged. The infrastructure sector in which a specific project will operate is an important consideration, as well as the parameters of the eventual financing agreement (duration, repayment structure...). Further, in some regions and LICs, political stability and broader security concerns can prove to be important barriers to private investment.
- There is also a need for additional data on the performance of state-owned infrastructure operators and on the quality of existing infrastructure networks in LICs. This can help reassure investors, strengthen the credibility of government commitments, and avoid risks of asymmetric information between public and private partners in infrastructure projects.
- In several LICs, private sector infrastructure projects have ultimately failed because of end-user opposition. There is a need to develop better systems for communication with the general public in regard to these projects, and for involving end-users in project planning, design and monitoring.
- Recent volatility in global capital markets, especially in LICs, highlights the need to differentiate risks amongst various regions, countries, commercial sectors, and at the microeconomic level. Emerging market risk is not all the same, yet investors tend to react to news in such a way that paints risk with a broad brush. Thus there is a need to focus on the long-term prospects of infrastructure investment, while properly taking into account near-term volatility and potential volatility.
- To make infrastructure investment work for development, beyond the expansion of infrastructure networks, it is crucial to develop sound investment linkages with domestic entrepreneurs. This requires moving beyond local content requirements, to building stronger supply-side capacity for infrastructure investment at the domestic level (including the capacity for small-scale local projects).

In order to tackle misperceptions (for which better data are needed, among other things) and to address existing/real risks investors in infrastructure are facing in LICs (for example through the use of risk mitigation instruments), the G20 can play a key role. Some concrete actions could be:

- Development of a proposal for a preferred set of information for the analysis of infrastructure investment in LICs, with the involvement of relevant international organisations and national statistical authorities. This proposal could build on existing policy and industry initiatives (see the forthcoming note to the G20 IIWG August 2015, Addressing Data Gaps: an Agenda for research) and the OECD project "Infrastructure as an Asset Class". This template could potentially be endorsed in the G20-context, and the Global Infrastructure Hub could coordinate subsequent collection and dissemination, leveraging the work of other international organisations.

- Set up a policy dialogue process with LICs and investors (such as the B20), to better understand the risk profile of infrastructure projects in LICs and the use of relevant instruments currently offered by MDBs and governments. The inclusion of other important participants in the infrastructure financing process, such as rating agencies, may also be considered.
- Coordination of relevant G20 work, making sure that other infrastructure policy work for the DWG focusing on LICs, such as the August 2015 Report on “Stock-Taking of Selected Policy Indicators on the Enabling Environment for Infrastructure Investment”, leverages previous / on-going G20 tools/papers (including relevant work currently being undertaken for the IIWG).

1. BACKGROUND

As the demand for infrastructure continues to rise with growth, trade, urbanization and growing expectations for improved quality of life, many low income countries (LICs) and lower middle income countries (MICs) are struggling to address their infrastructure needs. As a result of the fiscal constraints in many economies, government budgets—traditionally the major source of financing for infrastructure—cannot alone be expected to finance the infrastructure needs in LICs. Yet the volume of private participation in financing infrastructure projects in LICs remains modest in comparison with OECD countries. In order to encourage greater amounts of private investment in infrastructure in LICs and lower income MICs, a better understanding of the expected risk and return characteristics, as well as the existing and potential risk mitigation instruments, is necessary. This is relevant for the private sector in general and, in particular, for institutional investors with specific objectives and risk appetites

The costs and risks faced by private investors in infrastructure are high, particularly in LICs, where economic and financial conditions may be weaker and less stable. In addition to risks specific to the infrastructure sector, other risks might exist or be perceived to exist that are unique in emerging and developing countries. For example, securing the investment-grade rating necessary for institutional investors to invest in certain projects may be particularly challenging (Inderst and Stewart, 2014). Moreover, options to mitigate regulatory, currency and political risk might be generally less available or more costly to obtain. Investment contracts that are not standardised across countries make due diligence more time consuming and expensive and international arbitration is often not an option, leaving disputes to be solved in local courts.

A supportive enabling environment contributes to reducing the costs and risks of investing in infrastructure. The investment climate is affected by many factors, including political instability, regime uncertainty, rule of law and property rights, government regulations, government transparency and accountability, and enforceability of contracts. The existence of a stable and predictable environment in which both domestic and foreign investors can operate is vital for providing confidence to investors. Here, many host country governments are making efforts to improve the enabling environment, with the support of bilateral multilateral donor agencies and development finance institutions.

Linking the risk and return characteristics of infrastructure investment in LICs to asset/liability management and portfolio theory helps to relate their unique risks to other investments such as infrastructure in developed markets, or traditional asset classes such as stocks and bonds. This is essentially the investment decision faced by institutional investors such as pension funds, insurance companies, or sovereign wealth funds, and this decision then feeds into the asset allocation and investment selection process.

Besides the LIC dimension of risk and return, the characterisation of infrastructure investment faces other hurdles, especially a general lack of data. 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); and the different instruments to invest in infrastructure (i.e. infrastructure funds, listed companies, corporates etc.). Challenges arise from 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.

In order to attract the private sector by providing effective risk mitigation instruments, policy makers – from LICs, as well as developed countries providing these instruments mainly through Development Finance Institutions (DFIs) – and MDBs need to have a clear understanding of the challenges investors are facing in LICs. By facilitating coordination between the G20 DWG and IIWG, this report can also be useful to influence investor perspective on the risks of investing in LICs, particularly the set of institutional investors that manage globally diversified portfolios of infrastructure investments, as well as for domestic institutional investors.

The relevance of increasing capital markets financing for infrastructure was recognized by the G20 leaders gathered in Cannes in November 2011. The G20 commissioned a High Level Panel (HLP), chaired by Mr. Tidjane Thiam, then CEO of Prudential plc, to identify measures to scale-up and diversify sources of financing for infrastructure. To mobilise private financing for infrastructure projects the High Level Panel Recommended:

- sustained support for the development and deepening of local currency debt markets in developing countries and consideration of the use of infrastructure bonds as eligible assets for repo funding by central banks,
- use by MDBs of enhanced risk mitigation instruments to develop a range of co-financing opportunities that could notably have special appeal to SWFs.

One of the key messages in the G20 Action Plan to support the development of Local Currency Markets was that increased focus should be given on developing, diversifying, and professionalizing the domestic investor base.

Official providers of development finance that act as local intermediaries with specialised skills in infrastructure financing, such as IDFC in India and BNDES in Brazil, Fonadin in Mexico and IIGF in Indonesia, also have a key role to catalyse investment by domestic and foreign investors. Export Credit Agencies (ECAs) and Multilateral Development Banks (MDBs) also have a critical role to play in helping to scale up financing for infrastructure development, crowding in private capital for infrastructure in developing countries. As recognized by the G20 HLP, this could be achieved by allocating a substantially larger share of MDBs balance sheets to risk mitigation products rather than to direct loans to the infrastructure sector. This would have the benefit of ‘leveraging’ the existing capital and potentially attracting new capital (i.e. institutional investors).

Box 1. Related Work for the G20 Investment and Infrastructure Working Group

G20 leaders have highlighted the importance of long-term financing, focusing on infrastructure investment, to foster long-term growth. Leaders have called on IOs such as the OECD, the World Bank Group, the IMF and the United Nations, among others, to advance research on obstacles and impediments to long-term investment. Under Turkey's G20 Presidency, the G20 Investment and Infrastructure Working Group (IIWG) has asked the OECD, the World Bank Group and other IOs to produce a number of deliverables focused on long-term investment financing for infrastructure, including the following items:

- *Further identification of effective approaches to the financing of long-term investment by institutional investors:* The OECD has developed the G20 OECD High-Level Principles on Long-Term Investment Financing by Institutional Investors (endorsed by G20 leaders in September 2013) and has been invited by the II WG and the G20 Finance Ministers and Central Bank Governors to deliver the rest of the effective approaches to implement the G20/OECD High-Level Principles by the 2015 Leaders' Summit. As was the case before, these approaches will seek to provide examples of successful or innovative practices regarding mobilising the capital of institutional investors for long-term investment.
- *Development of a report mapping instruments and incentives for infrastructure financing:* In support of ongoing work on the analysis of government and market-based instruments and incentives to stimulate long-term investment finance for infrastructure, a taxonomy is being developed by the OECD to identify options available for the financing of infrastructure – with a particular emphasis on facilitating investment in this asset class by institutional investors – which will focus on new forms of debt and equity investment and risk mitigants.
- *Report on the roles of financial intermediaries in the development phases of infrastructure (“right-siting of capital”):* A report to be developed by the OECD jointly with the Government of Singapore on the “right siting” of capital will explore the role of providers of capital, such as banks and institutional investors, in the development phases of infrastructure projects.
- *Analysis of investment regulations in insurance and private pensions:* A review and analysis of investment regulations governing pension funds and insurers has been undertaken by the OECD in order to better understand the constraints facing these classes of institutional investors in regard to long-term investment financing and alternative investments.
- *Asset-based financing for infrastructure:* The IMF was asked to prepare a note on the potential and challenges of asset based financing, such as Sukuk, with regard to infrastructure financing.
- *Report on country specific investment strategies:* As part of the broader effort to better understand and address investment and infrastructure shortfalls, the IIWG has conducted a voluntary exercise to compile information and data on countries' investment strategies, including the main challenges being addressed, policy priorities, and policy context of these strategies. Based on these contributions the OECD is preparing a report for the G20 Turkish Presidency.
- *Joint IMF-OECD-World Bank report on capital markets instruments for SME and infrastructure financing:* The IMF, OECD and World Bank Group have been invited to work with other relevant IOs to identify where advances can be made with market-financing instruments which could further promote financing for SMEs and infrastructure.³
- *Project Prioritization:* There are two component to this deliverable, which is also a deliverable for the G20 DWG:
 - The first component is the World Bank Group Infrastructure Prioritization Toolkit Package, consisting of (i) a Working Paper on Prioritization of Infrastructure Projects: A Decision Support Framework; and (ii) the Infrastructure Prioritization Toolkit Spreadsheet Platform. The Toolkit is designed to assist

³ The OECD will be separately preparing for the G20 a report on the opportunities and constraints of market-based financing for SMEs. That OECD report will also support elaboration of the joint IO report described above.

governments with the planning and prioritization of infrastructure projects, i.e. the selection of infrastructure projects on a systematic basis, reflecting full economic and financial costs and benefits including environmental and social costs and benefits.

- The second part of the deliverable is a Report, the preparation of which is being led by the Inter-American Development Bank (IADB), on the MDBs Common Approaches to Infrastructure Partnerships.
- *The Report on Recommended PPP Contractual Provisions*: This World Bank Group deliverable involves the development of recommended contractual provisions (such as force majeure clauses, dispute resolution clauses, etc.) for use in PPP transactions. These would not be prescriptive materials.
- *The Guide to PPP Disclosure*: This World Bank Group deliverable provides guidance on best practices in regard to the public disclosure of information in respect of PPP transactions.
- *The PPP Project Checklist*: This joint deliverable of the WBG and the OECD will be a checklist for PPP transactions, complementing the checklist on PPP enabling environments which the OECD produced as a 2014 G20 deliverable. The new checklist will be focused on the procurement and implementation of PPP projects.

2. POTENTIAL ROLE OF INSTITUTIONAL INVESTORS IN INFRASTRUCTURE FINANCING⁴

Despite the growth experienced in the assets under management of institutional investors such as pension funds, insurers and sovereign wealth funds, their investment volume in developing countries is still marginal, and a number of obstacles remain. In order to attract institutional capital to emerging markets, for example 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.

Infrastructure is considered to be an asset class vulnerable to high political, regulatory and execution risk, especially in developing countries. In addition to the policy environment, other factors preventing foreign investments include inflation and foreign exchange risk, potentially restrictive investment requirements and lack of knowledge and expertise.

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. In Peru, for example, the contractual process for a road concession can last up to 5 years and involves more than 20 government departments (Stewart and Yermo, 2012). 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.

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.

⁴ Based on Chapter 6 of “Are institutional investors the answer for long-term development financing?” Raffaele Della Croce, Directorate for Financial and Enterprise Affairs, Development Cooperation Report 2014, OECD. See also www.oecd.org/finance/lti

Establishing national infrastructure plans, providing risk mitigation tools, promoting investors education, and the pooling of funds, will all help overcome some of these barriers. 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.

Box 2. Who are the Institutional Investors in Infrastructure and How do they Work?

Who are the Institutional Investors in Infrastructure and How do they Work?

Traditionally, this heterogeneous group of public and private investors— in particular, pension funds, life insurers and sovereign wealth funds – has been seen as a source 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.

Over the last decade, institutional investors have been looking for new sources of long-term, inflation protected returns. Asset allocation trends observed over recent years show a gradual globalization of portfolios with an increased interest in emerging markets and diversification in new asset classes. However, although growing rapidly, investment in infrastructure is still limited, representing around 1% of total assets, on average, across the OECD⁵.

Pension funds start collecting contributions when individuals enter the workforce and may only start paying benefits 30 to 40 years later, using accumulated assets. With USD 25 trillion in assets held by autonomous pension funds in OECD countries and annual contribution in-flows of around 1 USD trillion, pension funds could be key sources of capital for development.

Public pension reserve funds are set up by governments or social security institutions to contribute to the financing of the relevant pay-as-you-go pension plans. Some of the world's largest public pension reserve funds (including the pension plans for California's state teachers and public employees) actively target infrastructure projects in developing countries.

Life insurance companies also tend to have long-term liabilities, especially as major providers of annuities and similar retirement products. Some of the major insurance companies around the world have made commitments to infrastructure investment.

Mutual funds offer a simple way for people to invest their money. A mutual fund – most often consisting of a mixture of stocks, bonds, cash and other securities – pools the assets of multiple investors. The total amount is invested by a fund manager into a variety of holdings. Investing in such a wide array of stocks and bonds would not be possible for the average investor without the help of a mutual fund.

Sovereign Wealth Funds are special-purpose investment funds or arrangements owned by a central government whose purpose is either to ensure that a country's resources are preserved for future generations, or to stabilise government fiscal and/or foreign exchange revenues and macroeconomic aggregates. Sovereign Wealth Funds and public pension reserve funds are becoming major players in international financial markets. Assets under management by such funds have been growing rapidly and in January 2014 accounted for more than USD 6 trillion, according to the Sovereign Fund Institute.

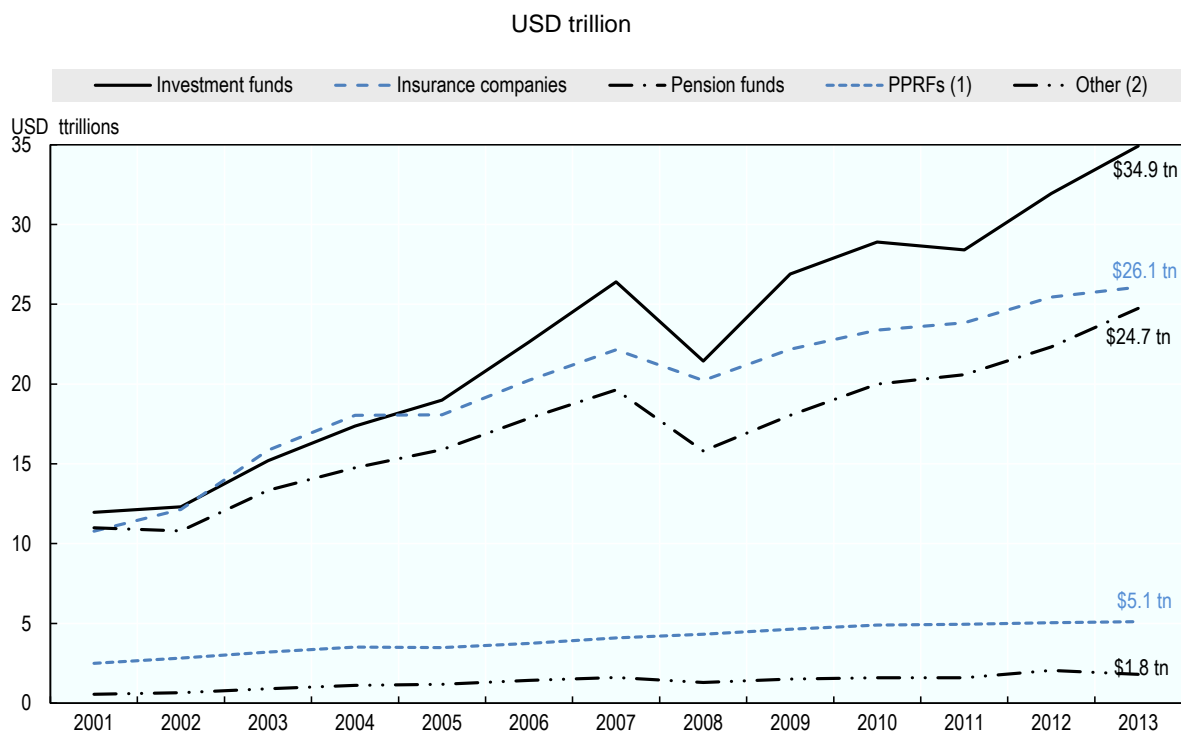
Sources: G20/OECD (2013), "G20/OECD High-Level Principles of Long-Term Investment Financing by Institutional Investors", OECD, Paris, www.oecd.org/daf/fin/private-pensions/G20-OECD-Principles-LTI-Financing.pdf; OECD (2013), *The Role of Banks, Equity Markets and Institutional Investors in Long-Term Financing for Growth and Development*, Report for G20 Leaders, OECD, Paris, www.oecd.org/daf/fin/private-pensions/G20reportLTIFinancingForGrowthRussianPresidency2013.pdf.

⁵ OECD Pension Markets in Focus 2013.

Institutional investment is on the rise

Institutional investors – particularly pension funds, insurance companies and mutual funds – are increasingly important players in financial markets. In OECD countries alone, these institutions held USD 92.6 trillion in assets in 2013 (Figure 1). Growth in institutional investors’ assets remains substantial. For instance, pension fund assets grew by 8.2% annually over 2009-2013.

Figure 1. Total assets by Type of Institutional Investor in the OECD, 2001-13

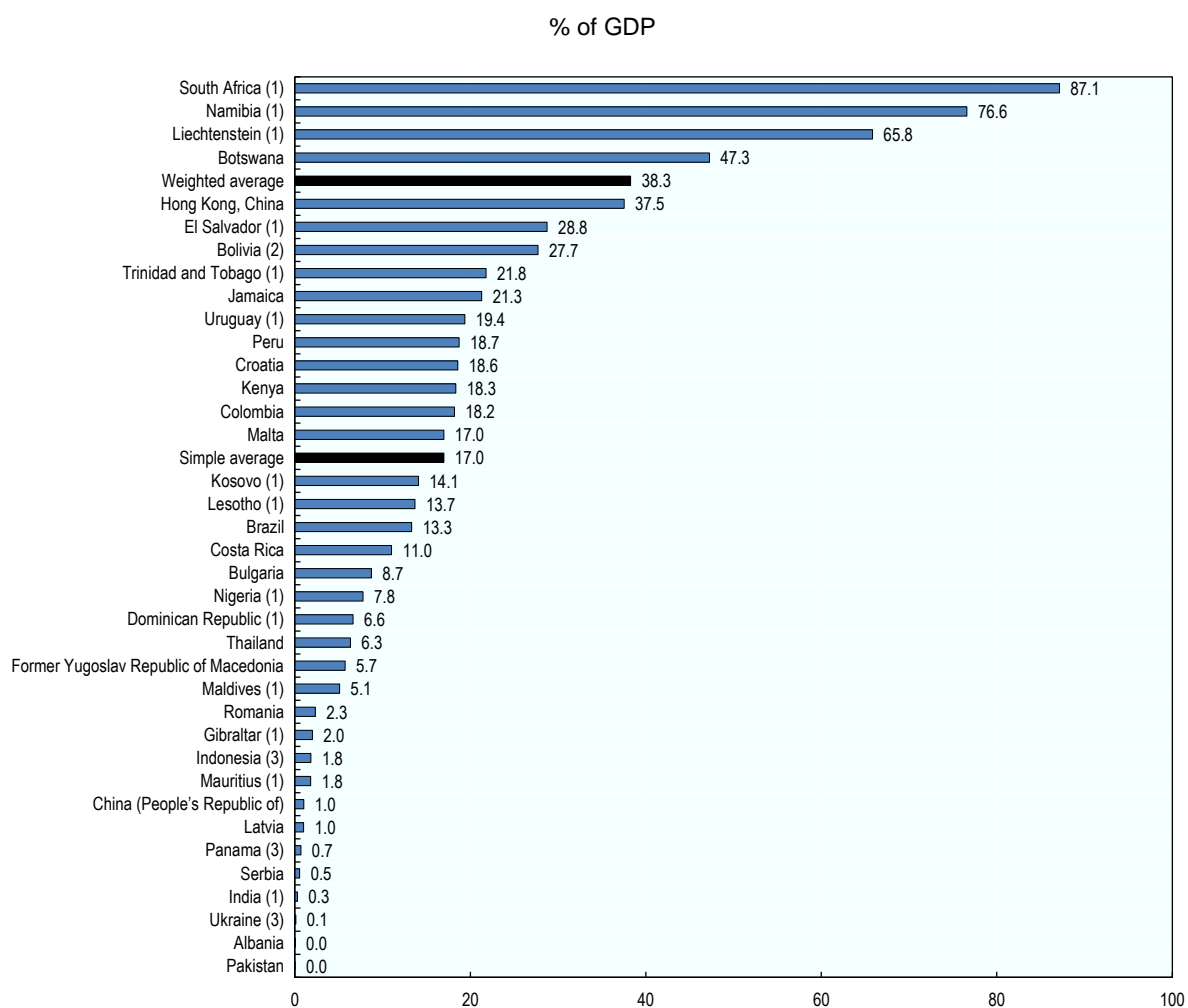


Source: OECD Global Pension Statistics, Global Insurance Statistics and Institutional Investors databases, and OECD staff estimates. Published in OECD Pension Markets in Focus 2014.

Note: Book reserves are not included in this chart. Pension funds and insurance companies' assets include assets invested in mutual funds, which may be also counted in investment funds. As 2013 annual data for investment funds, insurance companies and other institutional investors are not yet available, 2013 Q4 data have been used instead when available. Data include Australia's Future Fund, Belgium's Zilverfonds (2008-2013), Canada Pension Plan Investment Board, Chile's Pension Reserve Fund (2010-2013), Japan's Government Pension Investment Fund, Korea's National Pension Service, New Zealand Superannuation Fund, Government Pension Fund - Norway, Poland's Demographic Reserve Fund, Portugal's Social Security Financial Stabilisation Fund, Spain's Social Security Reserve Fund, Sweden's AP1-AP4 and AP6, United States' Social Security Trust Fund. Other forms of institutional savings include foundations and endowment funds, non-pension fund money managed by banks, private investment partnership and other forms of institutional investors.

Pension funds and insurers are major investors in a large number of developed economies, with assets representing over 60% of GDP in countries such as Canada, the Netherlands, the United Kingdom and the United States. In non-OECD countries, institutional investors tend to be less established, although some important exceptions include Brazil and South Africa, which have well-developed pension fund and mutual fund industries. Among non-OECD countries, South Africa has one of the largest pension fund industries – both in absolute terms and in relation to its economy; at over 80% of GDP (Figure 2), it is on a par with the top OECD countries. Emerging economies are also home to some of the largest sovereign wealth funds in the world.

Figure 2. Importance of pension funds relative to the size of the economy in selected non-OECD countries, 2013



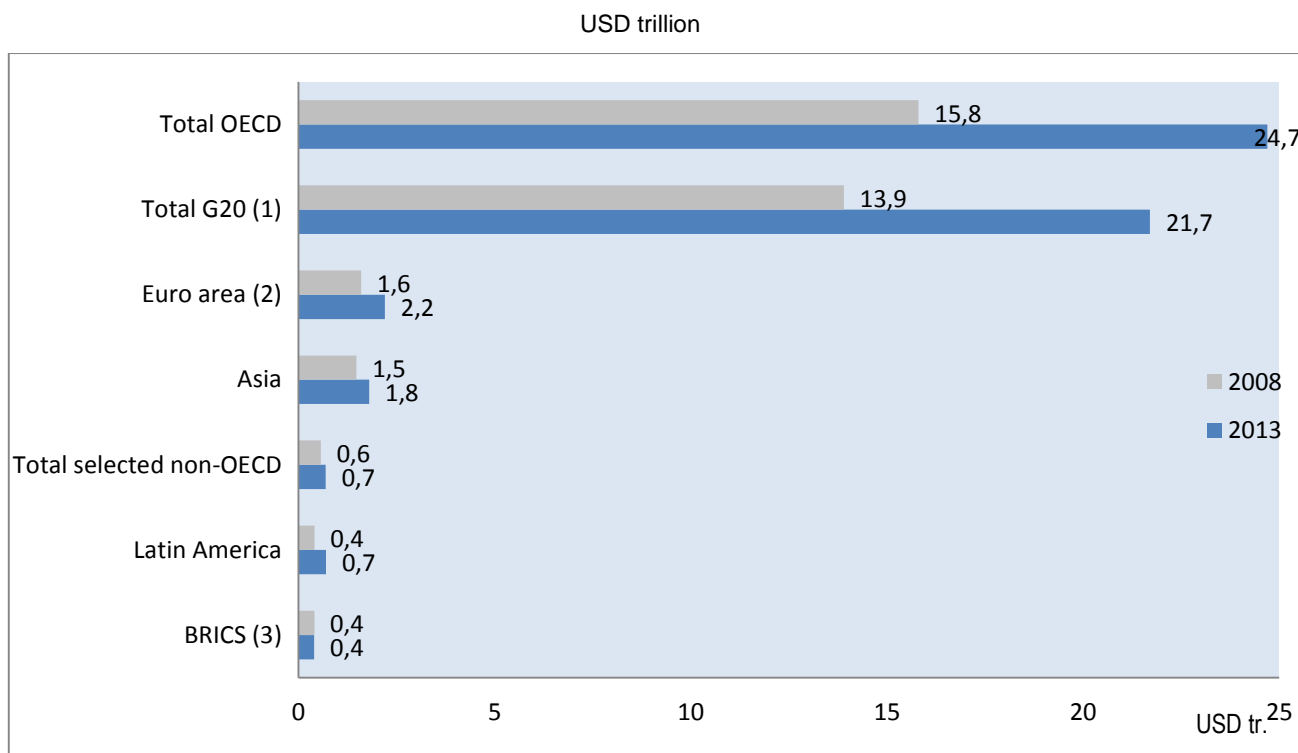
Source: OECD Pension Market in Focus 2014

Notes

- (1) Data from 2012.
- (2) Data from 2010.
- (3) Data from 2011.

Figure 3 shows that, despite the recent 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. In 2013, the average share of pension funds in GDP in OECD countries was 84.2%, while in non-OECD countries it was 38.3%. Emerging market and developing economies generally have even greater opportunity to develop their institutional investment sectors, as their financial systems are largely bank-based. Sovereign Wealth Funds and public pension reserve funds are growing rapidly in developing and emerging economies.

Figure 3. The Growing Importance of Pension Funds, 2008 and 2013



Source: OECD Pension Market in Focus 2013

Notes:

- (1) Excluding Saudi Arabia and the Russian Federation.
- (2) This includes the list of countries that are members of the Euro Area at the end of 2013.
- (3) Excluding the Russian Federation.

Attracting foreign investment while making use of domestic sources of capital

North-South investment refers to investment flows from developed economies into emerging markets and LICs. 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 processes. However, developing countries face additional and, in some cases, stronger barriers to foreign participation in infrastructure investment.

In addition to the lack of large and deep local markets in developing countries, there are often restrictions on investment (for domestic investors, and sometimes for foreign investors), such as heavy bureaucracy and controls, and weak financial infrastructure. Infrastructure, in particular, is considered to be vulnerable to high political, regulatory and execution risk, especially in developing countries. In addition to the policy environment, other factors preventing foreign investments are inflation and currency risk⁶, potentially restrictive investment requirements, and lack of local capacity and expertise. 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; OECD, 2012).

Lack of objective, high-quality data on pension funds' asset allocations and their returns on investment is another barrier. This makes it difficult to assess the risks of infrastructure investments and to compare returns with investment in other assets. Without such information, investors are reluctant to make allocations. Whilst some countries collect such data, there is no international, official, accurate data on alternative investments, such as hedge funds, private equity, real estate, infrastructure or commodities. The OECD has begun to collect this data and to make such comparisons (OECD, 2011).

In addition to North-South investing, domestic pension funds in developing economies could provide an important source of infrastructure and development capital for their own development priorities. It could be argued that investors based in developing countries are better placed to make such investments, having closer knowledge of their local markets and projects, and no currency risk or overseas investment restrictions. International experience in countries such as Chile and Mexico suggests that institutional investors, especially pension fund assets, have been instrumental to the growth of the financial markets, and, in turn, to the provision of development finance. South-South investing is also likely to rise in importance with pension funds, sovereign wealth funds and other institutional investors supplying much-needed capital to their own regions as well as to other emerging markets (Stewart and Yermo, 2012).

Some developing countries have taken bold steps by establishing sovereign wealth and pension fund systems, but often investments are restricted and there is limited scope for channelling these growing pools of assets into infrastructure development. Given the large size of infrastructure projects, achieving proper diversification can limit the amount of capital that any one fund could allocate to project, potentially further limiting the ability for projects to raise capital from local markets.

Latin American and South African pension funds have the highest allocations to infrastructure projects – as high as 3% of total assets in countries such as Mexico and Peru, and 4% in South Africa. Countries with no pension fund allocation to infrastructure include China, India, Indonesia and Nigeria (Stewart and Yermo, 2012).

Governments need to establish the appropriate regulatory, supervisory and tax frameworks to allow such investments to grow. For example, improving investment conditions and enhancing local market liquidity through government bonds would create important preconditions for the growth and development of corporate bond markets, which would ultimately facilitate infrastructure, mortgage and asset-backed financing. For example, the success of infrastructure bonds in Chile and Peru stems partly from the presence of various guarantees. In Peru, pension funds were first allowed to invest in infrastructure bonds in 2001; these bonds are issued by the project operator as the project advances and carry a government certificate of completion (Certificate of Recognition of Annual Payment for Works). Peruvian pension

⁶ 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.

funds have also established an infrastructure trust fund to invest in project debt, and the take-up of these bonds has been relatively fast (Stewart and Yermo, 2012).

In Africa, with the main exception of South Africa, pension funds are at an early stage of development and infrastructure project investments are practically non-existent and highly restricted by regulations. However, change is underway. For instance, Kenya is looking to the pensions industry to fund the country's infrastructure and domestic needs. Since 2009, the government has issued five infrastructure bonds targeted at specific infrastructure projects; the bonds, with maturities ranging from 8-20 years, have been packaged with more incentives than normal government bonds. These bonds have been popular with pension funds, which have taken significant portions of the total issue. In addition, a Kenyan energy generating company – Kengen Ltd. – issued an infrastructure bond in 2009 to fund a number of new projects. The bond was able to raise KES 25 billion (Kenyan shilling) against a target of KES 15 billion. Pension schemes accounted for around 40% of the total take-up (Stewart and Yermo, 2012).

3. ANALYSIS OF RISK IN INFRASTRUCTURE

Given the important role of private finance for infrastructure development and desire to ensure effective and efficient policy interventions, there is broad recognition among IOs, governments, investors and infrastructure operators of the importance of understanding the risks linked to infrastructure investments. Also critical is an understanding of the strategies being deployed to mitigate risks and enhance returns for infrastructure investment, along with evaluating their efficiency and effectiveness.

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 and the type and magnitude of related risks.

In recent work developed for the G20 by the OECD (Mapping of Instruments and Incentives for Infrastructure Financing: a Taxonomy) infrastructure risks are classified by their main source – namely political and regulatory, macroeconomic and business, and technical. Much of the literature focuses on risk mitigants and incentives available for project finance. The OECD taxonomy 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 in order to define the range of potential measures that could mobilise infrastructure financing.

Classification of Risk in Infrastructure

Risks linked to investment in infrastructure projects can be differentiated by their source. Three broad categories can be identified (see Table 1, below, which shows a classification of the main risks linked to investment in infrastructure projects, grouped according to the project development phases), namely:

1. **Political and regulatory risks:** These 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. Political

risks can be highly subjective, difficult to quantify, and therefore difficult to price into infrastructure finance.

2. **Macroeconomic and business risks:** These risks arise from the possibility that the industry and/or economic environment is subject to variation. These include macroeconomic variables such as inflation, real interest rates and exchange rate fluctuations. An asset's exposure to the business cycle, i.e. shifts in demand, is a principal business risk of the asset. Finance risks (such as debt maturity) are also a major part of business risk.
3. **Technical risks:** These risks are determined by the skill of the operators, managers and related to the features of the project, project complexity, construction and technology.

The risks associated with a specific infrastructure project generally arise from the nature of the underlying asset itself, contracts with the public sector, and its exposure to the environment in which it operates. The magnitude of a risk varies depending on the country (and its underlying investment climate), the sector (and its institutional maturity) and the project (and its complexity).

Risks also vary across the life of the project, divided into the project development phase (before submission of the bid and financial close); the construction phase; and the operation and termination phases. Certain risks may only be present at certain stages of project finance, while others may be present at all stages. Many investors perceive a higher risk in the first phases of the project i.e. during development and construction. These considerations affect the optimum risk allocation.

Certain political and regulatory risks, though likely material in the event of occurrence, are closer to the realm of subjective risks. For instance, the risk of a new government gaining power and changing PPP legislation is an uncertainty and difficult to price into assets. However, governments can take steps to mitigate such risks. When covering political risk, a distinction between sovereign risk – the general risk that market conditions and creditworthiness change at the national or municipal level – and political risk at the project level should be made. Government bond yields or credit default swaps on traded government issued debts are efficient means to price sovereign risks into infrastructure finance. Other political and regulatory risks that are more specific to infrastructure finance are more difficult to correctly price, and would not be completely captured by sovereign spreads.

Table 1. 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					

The Risk Management Environment

Private investors are well equipped to analyse and bear certain risks. Yet the financing of infrastructure often requires large cash outlays, and the assets themselves operate in heavily regulated industries. Through economic development schemes, governments can help to mitigate some of the risks described in Table 1, using various techniques and instruments. Some incentives may provide compensation that increases returns to investors, making investment more attractive. In order to attract private investment in infrastructure projects, governments can influence the magnitude of these risks and, in some cases, reduce the probability of their occurrence, or exposure to losses. The objectives of risk mitigants and incentives are to correct certain market failures or inefficiencies in the procurement of infrastructure investment and delivery of infrastructure assets by private entities, or in the financing of infrastructure investment⁷.

First, governments can influence **political and regulatory risks** by creating a more conducive institutional environment, including making credible commitments to honor the terms of the agreement, and developing reliable guidance on development and construction costs and tariff and demand definition and trends. This would particularly help projects during the development and construction phases. Actions may entail: (i) a stable long-term plan for infrastructure development; enhanced certainty and social

⁷ See the “G20/OECD High-Level Principles of Long-term Investment Financing by Institutional Investors”

acceptance regarding novel approaches to infrastructure development (e.g., PPP, privatisation or pure private development); enhanced transparency and accuracy of the infrastructure pipeline; reliability of feasibility studies; credible commitment to provide necessary authorizations; guidance on environmental reviews; and (ii) certainty of rules about, inter alia, public procurement, permits, expropriation, taxation, litigation, and tariff definition.

According to the OECD Principles for Public Governance of Public-Private Partnerships⁸ 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.

Political risks, like changes in taxation, legal environment, and issues of expropriation, are hard to quantify and can have potentially large impacts on the profitability and viability of investment. In some instances they may even be barriers to address before a finance package can be secured.

Business risks should, where possible, be managed by private players, both in a PPP and under privatisation of private developments (due to the fact that such risks can be both endogenous and exogenous in nature). However, in some circumstances, governments may introduce specific instruments, even with a temporary validity or for a specified range of assets, to make infrastructure investments more appealing and financially viable. In recent years, policymakers have introduced a number of actions/instruments to cope with the infrastructure investment gap and the shortage of traditional financial resources, especially on the debt side (specific examples are described below).

Technical risks can be mitigated through the know-how of specialized operators and should be shifted to the private sector in order to generate an incentive for effective project delivery. However, some technical risks could be retained, to some degree, by the public sector without compromising performance, as they are external to private sector control. This is the case, for example, with archeological and environmental risks, especially in PPP/concessions, where the authority should be aware about the condition of the designated land for the investment.

Risks Specifically Related to LICs

Sovereign and macroeconomic risk

- A broad category, sovereign risk can be described as the creditworthiness of a government, or the general risk of investing in a country. Traditional country analysis involves balance of payments (in particular, foreign exchange reserves), macroeconomic policy, and the supportive institutions (such as rule of law, freedom from corruption, stable political system), that lead to a strong investment climate. This risk can be distinguished from the political and credit risks that may be attributed to specific infrastructure projects.
- Inflation can be a chief concern in certain LICs – this includes not just high inflation but the overall volatility of inflation and the central bank's ability to control it, and to successfully telegraph policy to market participants.

⁸ See the OECD "Recommendation of the Council on Principles for Public Governance of Public-Private Partnerships", May 2012

- Exchange rate risks: in LICs, foreign exchange can be a scarce resource. Exchange rate policy (free float, managed float, fixed) can impact macroeconomic risks ('sudden stops'), and convertibility risks. Exchange rate fluctuations can also impact risk.
- Market based instruments, such as sovereign bond yields and credit default swaps, are useful indicators to measure the market's perceived levels of country and macroeconomic risk.

Business risks

- Business risks include risks arising from the business cycle, credit cycle, and the overall health of the financial system. The transparency and availability of information in order to forecast revenue (and costs), and to effectively manage operations, is a paramount consideration in correctly pricing the business risks of an infrastructure investment.
- The extent of business risk also depends upon the depth and breadth of capital markets, both in equity and debt; access to external sources of financing; the strength of the domestic banking system; and the ability for banks to act as intermediaries, where necessary.

Infrastructure Project-Specific Risks

- Breach of contract and regulatory issues remain amongst the most important political risk concerns for investors in developing economies, particularly in the infrastructure sector. The quality of regulation and the incidence of regulatory disputes are indicators of investor willingness to bear risks. LICs need to pay particular attention to ensuring adherence to the rule of law and the protection of property rights. Other key factors include the need for a strong regulatory environment, transparent and competitive procurement processes, and effective contract enforcement arrangements.
- Experience with the use of public private partnerships (PPPs), and a track record of successful implementation of such transactions, is a major concern in LICs.

Box 3. Risks and Private Participation in Infrastructure⁹

As the demand for infrastructure continues to rise with growth, trade, urbanization and growing expectations for improved quality of life, many emerging markets and developing economies (EMDEs) are struggling to address their infrastructure needs. As a result of the fiscal constraints in many economies, government budgets – traditionally the major source of financing for infrastructure – cannot alone be expected to finance the infrastructure needs in EMDEs. Yet the volume of private participation in financing infrastructure projects in EMDEs remains modest in comparison with OECD countries.

The costs and risks faced by private investors in infrastructure are high, particularly in EMDEs, where economic and financial conditions tend to be weaker and less stable. A supportive enabling environment reduces the costs and risks of investing in infrastructure. The investment climate is affected by many factors, including political instability, regime uncertainty, rule of law and property rights, government regulations, and government transparency and accountability, and enforceable contracts. The existence of a stable and predictable environment in which both domestic and foreign investors can operate is vital for providing confidence to investors.

The literature on infrastructure investments and risk is thin. Araya *et al.* (2013)¹⁰ analyzes the relationship between private participation in infrastructure and country risk. The authors show that a difference of one standard deviation in a country's sovereign risk score is associated with a 27 percent increase in the probability of having private participation in infrastructure commitment and a 41 percent higher level of investment in dollar terms in, for example, the energy sector (among infrastructure sectors) and concessions (among contractual types). As a comparator, infrastructure investment overall is shown to be much more sensitive to sovereign risk than foreign direct investment (FDI) in all sectors. This suggests that investors in sectors such as mining and extractives or manufacturing in high risk environments expect to receive returns commensurate with the risks they are assuming, whereas that is not the perception of infrastructure investors. The authors also show that conflict-affected countries typically require six to seven years to attract significant levels or forms of private investments in infrastructure from the day that the conflict is officially resolved. Private investments in sectors in which assets are more difficult to secure – such as water, power distribution, or roads – are slower to appear or simply never materialize.

Moszoro, *et. al* (2014) tries to disentangle country risk, investigating discreet institutional and political determinants of PPI. The authors find that the weaker the political and institutional environment, the higher the risks the private sector will face, in turn lowering the probability of an investment in the sector as well as the amount invested. Stable inflation, access to finance, freedom from corruption, rule of law, quality of regulations, and the number of disputes, are shown to be relevant factors for the determination of private participation in infrastructure.

Specifically, the higher a country scores on freedom from corruption, the higher the average level of investments with private participation in infrastructure. Decreasing corruption by 10 points can increase private sector investment by 15 percent¹¹. Freedom from corruption is statistically significant for all sectors except for transport.¹²

The higher a country score on rule of law, the higher the average level of investments with private participation in infrastructure. Improving rule of law by one standard deviation (*i.e.*, by 0.1) can increase PPI by three percent.

Breach of contract and regulatory issues remain the most important political risk concerns for investors into developing economies, according to the annual MIGA-EIU Political Risk Survey. Forty-five percent of investors in

⁹ The note in this box is based on Moszoro, Marian, Gonzalo Araya, Fernanda Ruiz-Nuñez, and Jordan Schwartz, May 2015, 'Institutional and Political Determinants of Private Participation in Infrastructure', available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2508474

¹⁰ Araya G., Schwartz J., Andrés L., 2013, 'The Effects of Country Risk and Conflict on Infrastructure PPIs', World Bank Policy Research Working Paper No 6569.

¹¹ As measured by Transparency International's Corruption Perceptions Index (CPI).

¹² While corruption generally reduces the prospects for investment in all sectors, the lack of sensitivity in the transport sector could be explained by the fact that corruption primarily effects investors' decisions to *enter* the transport market, not the subsequent level of investment. Investors may be able to mitigate corruption risks once they do invest.

developing countries named breach of contract and 58 percent named adverse regulatory changes as the most important political risks they will face in the next three years. Forty percent of the survey respondents mentioned that they experienced financial losses through adverse regulatory changes and 34 percent through breach of contract over the past three years. Therefore, it is not surprising to observe that both quality of regulations and number of previous disputes are important channels to increase private sector investments.

An improvement of one standard deviation (0.1) in quality of regulation produces an average increase of five percent in the level of infrastructure investment in PPIs. Quality of regulation is statistically significant for all sectors except water. Regulatory quality includes measures of the incidence of price controls and perceptions of the burdens imposed by excessive regulation. Improving the quality of regulations in a country can attract more private investors to infrastructure PPIs, but since water is a socially sensitive sector and very likely to be politically influenced, investors may prefer price controls and strong regulation, as they limit *ex ante* the risk of domestic politics around water.

On disputes, the estimation indicates that the higher the number of disputes, the lower the level of investments. An increase in an additional project going to court decreases investments by four percent.¹³ PPI investments in telecoms and water are particularly sensitive to the accumulated number of disputes in that particular sector. An additional dispute can decrease PPI investments in those sectors by approximately 12 percent.

Freedom from corruption and the sound rule of law are essential in attracting greenfield projects – investments that face more risks than brownfield projects. Those governments that promote a corruption-free environment and where property rights are protected are able to attract more greenfield projects

Investment returns can be affected by political changes and instability. A strong opposition party and a larger fractionalization of the opposition are positively correlated with PPI. This may be due to, correspondingly, a higher likelihood of partisan cooperation over long-term policies when political competition is tight and to an increase in third-party oversight and scrutiny from political opponents that provides a higher degree of reliability and predictability that is essential for the private sector to invest.

A sound investment climate is a critical factor affecting the supply of private infrastructure investment financing. The challenges from upstream “enabling” institutions, policies, and regulations and sector economics down to pipeline development need to be addressed simultaneously. Tackling such a complex and interconnected agenda requires building the institutional capacity and the quality of regulations and governance, as well as an analysis of synergies and an adoption of a holistic approach to infrastructure development.

¹³ Using the number of disputes in the last 10 years before the commitment, in order to capture the countries’ prior experience with such disputes.

4. ROLE OF OFFICIAL DEVELOPMENT ASSISTANCE (ODA) IN ADDRESSING RISKS

The new Sustainable Development Goals (SDGs), currently being developed by the United Nations, address issues such as ending poverty, preserving the environment, combatting climate change, ensuring peace and security, increasing resilience; and establishing a fair and equal trading system. The United Nations has recognised that these challenges are no longer national issues, and that they need to be discussed at a global level. Funding these new SDGs will require financing from both public and private sources.

Official Development Assistance (ODA) – currently at a level of approximately USD \$135bn a year – can make a contribution to the achievement of the SDGs, particularly in the poorest and most fragile countries with no access to external capital, but ODA, by itself, will not be sufficient.

Reflecting the changing geography of poverty, the relative importance of ODA – compared to other sources – is decreasing in middle income countries (although 1bn people are still living in extreme poverty today, in countries such as India and Nigeria).

ODA can continue to reduce poverty by becoming smarter – by leveraging private capital through the use of risk mitigation instruments, and by facilitating increased levels of trade. Development assistance can also help maximise other sources of funding that can finance the SDGs, such as countries' own domestic resources (including tax revenues), foreign direct investments driven by south-south trade, or other important sources of external financing such as remittances.

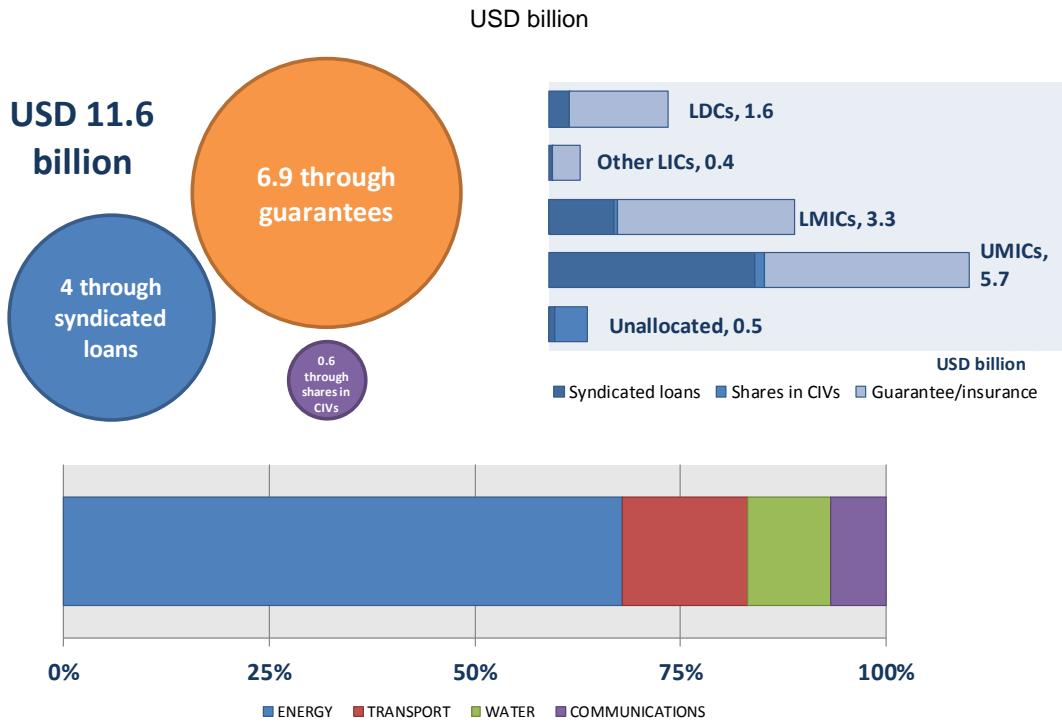
Capturing risk mitigation instruments for development

Since the 2002 Monterrey Consensus, and more recently in the context of the global financial crisis, development finance providers have recognised the need to exploit to a greater degree the public sector's potential to catalyse private finance for developing countries through risk mitigation instruments, such as guarantees. The WBG and other MDBs now offer a wide variety of such risk mitigation instruments, and a brief description of the products currently offered by the various entities within the WBG is set out in Annex A.

As part of the efforts to better capture the broader picture of official support for sustainable development, the OECD Development Assistance Committee (DAC) – in close collaboration with a group of development finance experts – is working on instrument-specific methodologies for measuring the amounts mobilised from the private sector by official development finance interventions. The approach strives to be conservative (in terms of causality), pragmatic (data availability) and fair (pro-rated attribution), in order to permit aggregation of the data at the global level whilst avoiding double-counting. A first set of methodologies with these qualifications have been defined for guarantees, syndicated loans and shares in collective investment vehicles (CIVs), and a special survey to pilot the methodologies and assess the availability of necessary data in development finance providers' internal systems has just been completed.

The preliminary results of the 2015 Survey, shown below in Figure 4, indicate that, in 2012-14, amounts mobilised from the private sector through these instruments totalled USD 37.1 billion, of which 31% was for infrastructure projects (USD 11.6 billion). Guarantees were the main lever (60%) for private investment in the infrastructure sector. The results also highlight that middle-income countries benefited the most from the leveraging effect of these instruments, with energy being the main targeted sector. Figures 5A, 5B and 5C present additional data from the 2013 Survey.

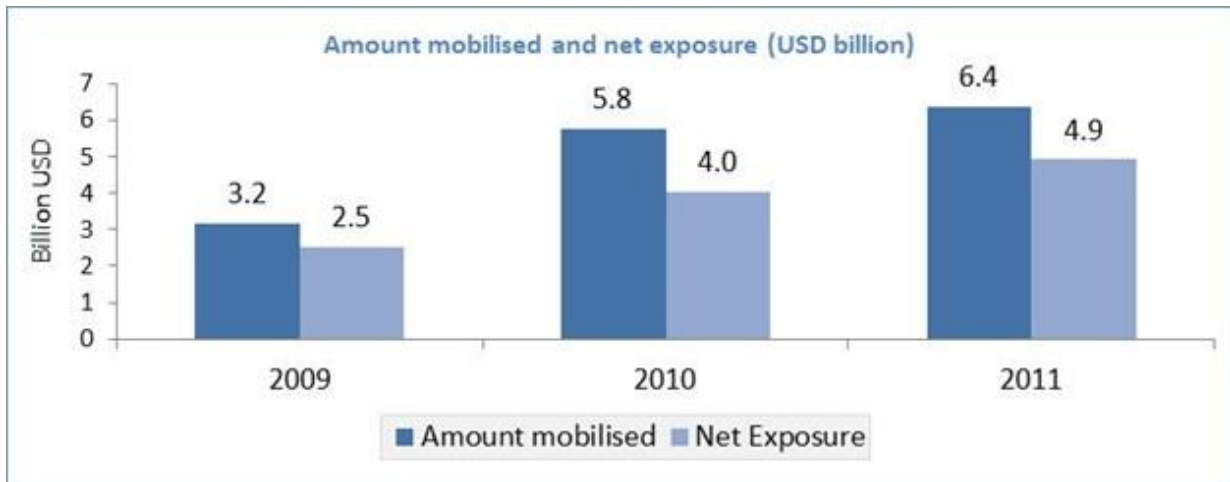
Figure 4. Amounts mobilised from the private sector in the infrastructure sector through guarantees, syndicated loans and shares in CIVs, 2012-14



Source: 2015 DAC Survey on amounts mobilised from the private sector by official development finance interventions

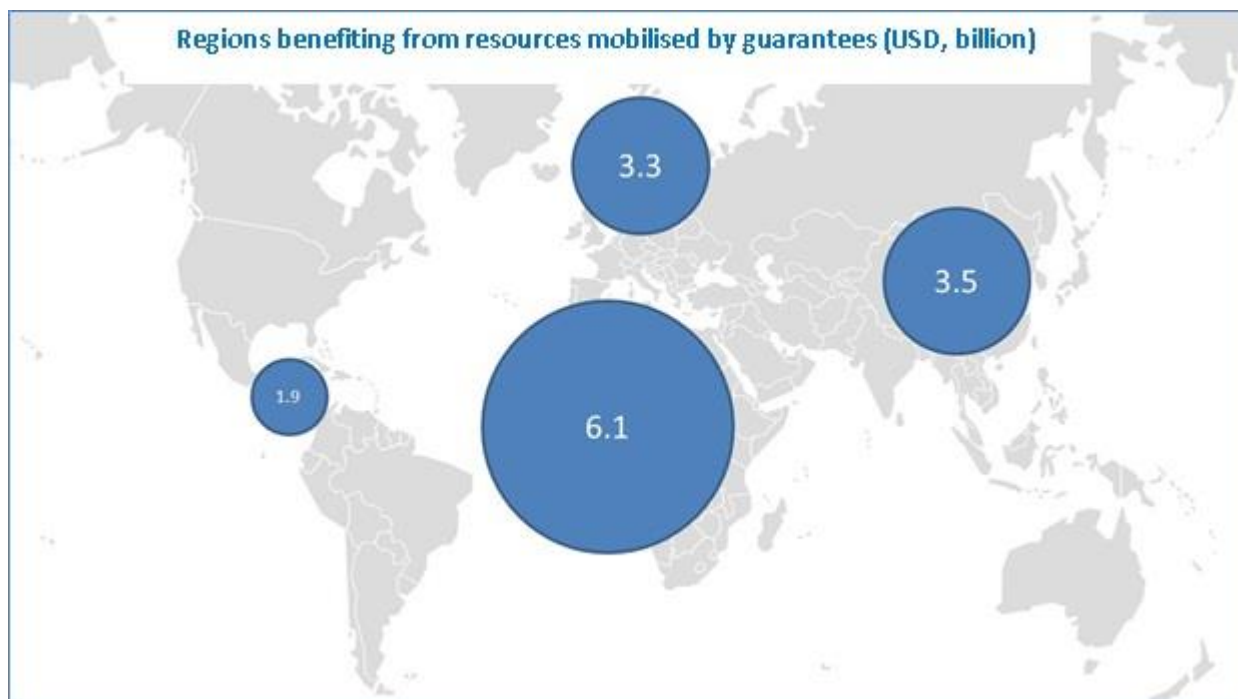
Figure 5. 5A, 5B & 5C: Key findings of the 2013 Survey on Guarantees

- Official guarantees for development – extended by DFIs and IFIs – mobilised USD 15.3 billion from the private sector for development purposes from 2009 to 2011.



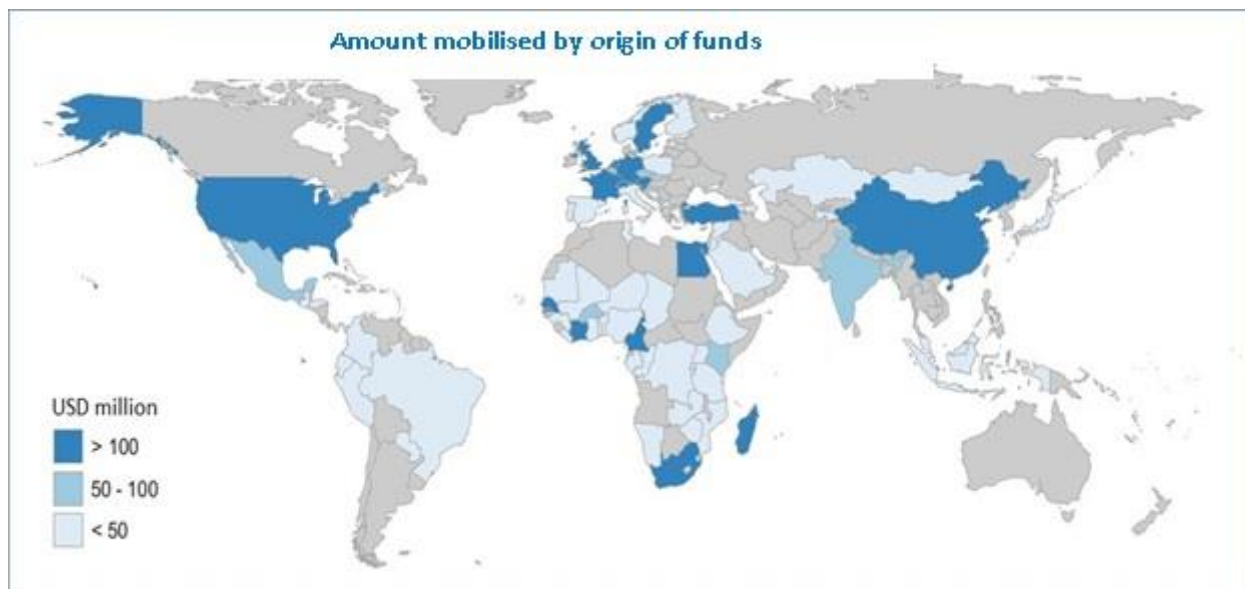
Source: Guarantees for Development, OECD Development Cooperation Working Paper 11/2013

- While Africa was the region benefiting the most from guarantees, more than 50% of the resources benefited upper-middle income countries.



Source: Guarantees for Development, OECD Development Cooperation Working Paper 11/2013

- 15% of the resources mobilised by guarantees were domestic.



Source: Guarantees for Development, OECD Development Cooperation Working Paper 11/2013

The OECD/DAC work on mobilisation will also benefit the OECD DAC work to develop a new statistical measurement framework, Total Official Support for Sustainable Development (TOSSD), which will mobilise broader official resources extended to developing countries in support of sustainable development. There are ongoing discussions on the need for such a statistical measurement framework to capture more effectively the use of risk mitigation instruments such as guarantees, possibly including flows mobilised. TOSSD can promote transparency and foster accountability by providing a statistical framework designed to mobilise the vast requisite resources, including Official Development Assistance and beyond, in support of the emerging post-2015 sustainable development agenda. The report to the DWG in September will include a reference to the current status of the TOSSD initiative in light of discussions at the 2015 Financing for Development Conference in Addis Ababa.

ANNEX A: WORLD BANK GROUP MATRIX OF GUARANTEE PRODUCTS



Guarantee Products

	RISK COVERAGE	ELIGIBLE BORROWER	PROJECT TYPE	BENEFICIARY	PRICING AND INDEMNITY REQUIREMENTS
World Bank (IBRD & IDA)	<p>Credit Risk: Default on payment obligations on bonds, loans, and non-loan related government obligations regardless of cause of default</p>	<ul style="list-style-type: none"> • For Development Policy Financing: Sovereign governments • For Investment Policy Financing: Sovereign governments and sub-national entities such as states, municipalities and state-owned enterprises • For non-loan related government obligations in relation to Investment Policy Financing: Private and foreign public entities 	<ul style="list-style-type: none"> • For Development Policy Financing: Public sector program of policy and institutional reforms • For Investment Policy Financing: Public sector projects • For non-loan related government obligations in relation to Investment Policy Financing: Private sector projects and public-to-public cross-border transactions • For IBRD Enclave Investment Project Financing: <ul style="list-style-type: none"> a. Project with strong financial flows in local currency in an IDA-only country that has sufficient alternative non-project related foreign exchange to cover the country's obligations to IBRD; b. Export-oriented, foreign exchange-generating project with private sector participation in IDA-only country 	<ul style="list-style-type: none"> • For Development Policy Financing: Private lenders and bond investors • For Investment Policy Financing: Private lenders and bond investors • For non-loan related government obligations in relation to Investment Policy Financing: Private and foreign public entities 	<p>Priced similar to IBRD loans or IDA credits</p> <p>Government must sign indemnity agreement with the World Bank</p>
	<p>Political Risk: Default on payment obligations on loans caused by failure of government to meet specific performance obligations, including but not limited to:</p> <ul style="list-style-type: none"> - Contractual performance of public counterparties - Change of laws and regulations - Expropriation - Non-convertibility and transferability of currency - War and civil disturbance, etc. 	Private implementing entity in public private participation (PPP) projects	<ul style="list-style-type: none"> • Projects with private sector participation such as build-operate-transfer and concession projects; public private participation (PPP) projects; privatizations • For IBRD Enclave Investment Project Financing: <ul style="list-style-type: none"> a. Project with strong financial flows in local currency in an IDA-only country that has sufficient alternative non-project related foreign exchange to cover the country's obligations to IBRD b. Export-oriented, foreign exchange-generating project with private sector participation in IDA-only country 	Private entity	
IFC	<p>Credit Risk: Default on payment obligations on bonds, loans, asset portfolios, derivative contracts, trade finance, and other financial instruments</p>	Private sector entity	Corporate, project, structured and trade financing	Private lenders, bond investors and other providers of credit to the private sector	<p>Priced on a commercial basis</p> <p>No indemnity agreement required</p>
MIGA	<p>Credit Risk: Default on payment obligations on any form of private commercial debt (non-honoring of financial obligations)</p>	Sovereign or sub-sovereign government or state-owned-enterprise	Public sector project involving cross-border financing	Commercial lenders providing credit to the public sector	<p>Priced on a commercial basis</p> <p>Requires host country approval, but no indemnity agreement</p>
	<p>Political Risk: Losses on equity/quasi-equity or other forms of direct investment caused by:</p> <ul style="list-style-type: none"> - Expropriation - Breach of contract - Currency inconvertibility and transfer restriction - War and civil disturbance 	Private sector entity or government-owned company operating on a commercial basis	Private sector project involving cross-border investment	Private investor or lender or government-owned company operating on a commercial basis	

Contacts: World Bank: Miguel Navarro-Martín, mnavarromartin@worldbank.org; IFC: Keshav Gaur, kgaur@worldbank.org; MIGA: Edith Quintrell, equintrell@worldbank.org

REFERENCES

- Araya G., Schwartz J., Andrés L., 2013, 'The Effects of Country Risk and Conflict on Infrastructure PPIs', World Bank Policy Research Working Paper No 6569.
- Blanc-Brude, F., H. Goldsmith, and T. Välilä (2006), Ex ante construction costs in the European road sector: A comparison of public-private partnerships and traditional public procurement, Economic and Financial Report, EIB, 01/2006, Luxembourg.
- Blanc-Brude, F., Hasan, M., and Ismail, O., (2014) "Unlisted Infrastructure Debt Valuation and Performance Measurement", EDHEC Risk Institute, July 2014
- Bonetti, V., S. Caselli, and S. Gatti (2010), "Offtaking agreements and how they impact the cost of funding for project finance deals: A clinical case study of the Quezon Power Ltd Co.", *Review of Financial Economics* 19; pp.60–71.
- Borgonovo E. and S. Gatti (2013), "Risk Analysis with Contractual Default. Does Covenant Breach Matter?", *European Journal of Operational Research*, no. 230; pp. 431-443.
- Della Croce, R., Sharma, R., 2014, 'Pooling of Institutional Investors Capital: Selected case studies in unlisted equity infrastructure', OECD, Report for G20
- Della Croce, R. (2014) "Are institutional investors the answer for long-term development financing?", Development Co-operation Report 2014, OECD Publishing.
- Della Croce, R. and J. Yermo (2013), "Institutional Investors and Infrastructure Financing", OECD Working Papers on Finance, Insurance and Private Pensions, No. 36, OECD Publishing, available at <http://dx.doi.org/10.1787/5k3wh99xgc33-en>
- Flannery, S. and Rickerson, W. (2014), Expanding the Investor Base and Lowering the Cost of Capital for Renewable Energy through Master Limited Partnerships, Prepared for the Union of Concerned Scientist, April 2014.
- Flyvbjerg, B. (2009), Survival of the Un-fittest: Why the Worst Infrastructure Gets Built - and What We Can Do about It, *Oxford Review of Economic Policy*, volume 25 (3), pp. 344–367,
- Frisari G. (2013), Risk Gaps: A Map of Risk Mitigation Instruments for Clean Investments, Climate Policy Initiative
- Gatti S. (2014), Government and Market-based Instruments and Incentives to stimulate Long-term Investment Finance in Infrastructure, OECD working paper n. 37.
- Gatti S., Della Croce R. (2015). International trends in infrastructure finance, in Caselli S., Corbetta G., Vecchi V. (2015), *Public Private Partnership for infrastructure and business development*, New York: Palgrave Macmillan
- Gatti, S. (2014), "Private Financing and Government Support to Promote Long-term Investments in Infrastructure", *OECD Working Papers on Finance, Insurance and Private Pensions*, No.37, OECD

Gatti S., Vecchi V., Borgonovo E., Cusumano N., Amadio S. (2014). Do public guarantees to infrastructure investments engender moral hazard of private bidders? A multiple agents based simulation. Paper Laboratorio ASPI – Bocconi.

G20/OECD (2013), ‘G20/OECD High-Level Principles of Long-Term Investment Financing by Institutional Investors’, OECD, Paris, available at www.oecd.org/daf/fin/private-pensions/G20-OECD-Principles-LTI-Financing.pdf.

Inderst, G. and F. Stewart (2014), ‘Institutional Investment in Infrastructure in Emerging Markets and Developing Economies’, World Bank Group and PPIAF.

International Energy Agency (IEA) (2012), World Energy Outlook 2012, OECD Publishing, Paris, available at <http://dx.doi.org/10.1787/weo-2012-en>.

Kaminker, C., et al. (2013), “Institutional investors and green infrastructure investments: Selected case studies”, *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 35, OECD Publishing, Paris, available at <http://dx.doi.org/10.1787/5k3xr8k6jb0n-en>.

Matsukawa T (2014), ‘Risk Mitigation Instruments for Infrastructure Financing’, World Bank Background Paper.

Moszoro M., Araya G., Ruiz-Nuñez F., Schwartz J. (2015), ‘*What Drives Private Participation in Infrastructure in Developing Countries?*’ In Caselli S., Corbetta G., Vecchi V., Public Private Partnerships for infrastructure and enterprise funding. Principles, Practices and Perspectives, New York: Palgrave

McKinsey Global Institute (2013), Infrastructure Productivity. How to save \$1 trillion a year, January 2013.

Moody’s (2010), Default and Recovery Rates for Project Finance Bank Loans, 1983-2008 .

McKinsey Global Institute (2013), Infrastructure Productivity. How to save \$1 trillion a year, January 2013

OECD (2007), ‘Infrastructure to 2030: Main findings and policy recommendations’.

OECD (2015) ‘Mapping Channels for Investment in Infrastructure: a Taxonomy of Instruments’

OECD (2014) Pension Markets in Focus 2014.

OECD-AfDB (2014) Seminar on addressing policy impediments to private investment in African infrastructure, Summary of Discussions & Way Forward 15 July 2014, Paris.

OECD (2013a), Annual survey of Large Pension Funds and Public Pension Reserve Funds, Paris, September, Report for G20 Leaders,

OECD (2013b), ‘The Role of Banks, Equity Markets and Institutional Investors in Long-Term Financing for Growth and Development, Report for G20 Leaders’, OECD, Paris, available at www.oecd.org/daf/fin/privatepensions/G20reportLTFinancingForGrowthRussianPresidency2013.pdf.

OECD (2013) Mariana Mirabile¹, Julia Benn¹, Cécile Sangaré¹ Guarantees for development, OECD Development Cooperation Working Paper 11/2013

OECD (2012), 'G20/OECD policy note on pension fund financing for green infrastructure and initiatives', OECD, Paris.

Schwartz, J. Z., Ruiz-Núñez, F., & Chelsky, J. (2014). Closing the Infrastructure Finance Gap: Addressing Risk. *Financial Flows Infrastructure Financing*, 141.

Standard & Poors (2007, 2015a), S&P Global Infrastructure Index Fact Sheet.

Standard and Poor's (2013), Why UK University Student Accommodation Projects are Satisfying Investors Appetite for Long-term Infrastructure Debt, August.

Standard & Poors (2015b), S&P Emerging Markets Infrastructure Index Fact Sheet.

Standard & Poors (2015c), Lessons Learned From 20 Years of Rating Global Project Finance Debt, S&P, in *CreditWeek*, Volume 35 (3), January.

Stewart, F. and J. Yermo (2012), 'Infrastructure investment in new markets: Challenges and opportunities for pension funds', OECD Working Papers on Finance, Insurance and Private Pensions, No. 26, OECD Publishing, Paris, available at <http://dx.doi.org/10.1787/5k8xff424vln-en>.

Vecchi V., Gatti S., Hellowell, M. (2015 forthcoming), Government Policies To Mitigate The Risks Of Infrastructure Projects: A Framework For Classification And Analysis.

World Economic Forum, Mitigation of Political and Regulatory Risk in Infrastructure projects, February 2015.