



**POOLING OF INSTITUTIONAL
INVESTORS CAPITAL –
SELECTED CASE STUDIES IN
UNLISTED EQUITY
INFRASTRUCTURE**

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ABSTRACT / RÉSUMÉ

POOLING OF INSTITUTIONAL INVESTORS CAPITAL - SELECTED CASE STUDIES IN UNLISTED EQUITY INFRASTRUCTURE

This paper “**Pooling of Institutional Investors Capital – Selected Case Studies in unlisted equity infrastructure**” aims to provide clarity on some of the issues associated with the evolving field of infrastructure investment and highlights some of the new models that are being used to facilitate the flow of financing. It firstly looks at the evolution of private institutional investment in infrastructure and examines how the market has developed. An analysis of the various investment vehicles is carried out with a snapshot of the growth experienced in the market. The infrastructure investor universe is then categorised according to the specific method that is utilised for investing in infrastructure. This is followed by highlighting the challenges and barriers to investment that have been evident in the market thus far.

The second part of the paper introduces the new initiatives that have developed in response to the drawbacks and early inefficiencies, highlighting specific case studies of co-investment platforms, government-led initiatives and revised unlisted infrastructure funds that are providing opportunities for institutional investors interested in investing in unlisted equity infrastructure assets.

While this paper benefited from comments from the G20 Investment and Infrastructure Working Group, from the G20/OECD Task Force on institutional investors and long term financing and from the following OECD bodies: the Committee on Financial Markets, the Insurance and Private Pension Committee and the Working Party on Private Pensions, the views contained herein may not necessarily reflect those of the G20 and OECD Members.

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POOLING OF INSTITUTIONAL INVESTORS CAPITAL - SELECTED CASE STUDIES IN UNLISTED EQUITY INFRASTRUCTURE*

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The second part of the paper introduces the new initiatives that have developed in response to the drawbacks and early inefficiencies, highlighting specific case studies of co-investment platforms, government-led initiatives and revised unlisted infrastructure funds that are providing opportunities for institutional investors interested in investing in unlisted equity infrastructure assets.

Another report will include analysis of the public sector decision to attract private capital focusing on institutional investors; the typical risk profile of an infrastructure asset from the private investor’s standpoint and institutional investor’s perspective of infrastructure investing in the forms of equity, debt and capital markets instruments. Particular attention will be paid to debt infrastructure vehicles for institutional investors, looking in particular at new forms of debt infrastructure investments responding to a progressive retreat of banks and to an increased interest by institutional investors for long term infrastructure investments. A third report will introduce approaches to mobilise institutional investors in green infrastructure. This report will add value to topics already covered and supplement OECD input on infrastructure as a broader asset class by taking an in-depth look at green infrastructure, focusing on clean energy infrastructure.

All these three reports are parts of the wider OECD lead project on “**The Analysis of Government and Market-Based Instruments and Incentives to Stimulate Long-Term Investment Finance**”, called by the G20 Finance Ministers and Central Banks Governors in 2013 (see February Communique). The description of the project was also reflected in the work plan of the G20 Study group on financing for investment, endorsed by the G20 Leaders at their 2013 Summit (see Declaration).

Building on the identification of government and market-based instruments and incentives to stimulate long-term investment finance, that project will provide analysis and policy good practices for addressing related challenges. It will also develop more thematic approaches in three main areas that are critical to long-term investment finance: infrastructure investment by institutional investors, corporate financing and bank lending. The project will be structured along the following directions.

a) inventory of instruments and incentives

* This report was prepared (under the supervision of André Laboul, Head of Financial Affairs Division, from the OECD’s Directorate for Financial and Enterprise Affairs) by Raffaele Della Croce, Project manager in that Division and Rajiv Sharma independent consultant with inputs from several bodies (see abstract). Ron Yamada also helped in collecting information for the cases studies. This research is part of the OECD long-term investment project (www.oecd.org/finance/lti).

The final report will provide an international comparative in-depth policy analysis and overview of main types of government and market-based instruments and incentives used to stimulate the financing of long-term investment, based on existing international overviews and new surveys when relevant. It will comprise a taxonomy of such instruments and incentives, including for green investment.

b) sub-themes

The report will also thematically address three main areas of long-term investment financing: infrastructure investment by institutional investors, corporate financing (including issues related to corporate governance) and bank lending (and related business model issues). These three specific outputs will be delivered in different parts.

The first part, on infrastructure investment and institutional investors will focus on the role of Insurers and Pension Funds as Long-Term Investors. This first part will comprise the three reports mentioned above.

The second part will address issues related to the changing nature of capital markets and their role in financing long-term investment by corporations. It will examine the ability of new firms to come to public equity markets and the explanations for falling IPO numbers and volumes. It will also examine the extent to which companies are issuing bonds to buy back shares and increase dividends as opposed to investing in the business. It will include issues related to corporate governance and the value chain.

The third part of the report will address the question of bank models and how leverage, derivatives operations and other aspects of a bank's business may affect its ability to engage in long-term lending.

EXECUTIVE SUMMARY

It is now widely agreed that large institutional investors such as pension funds, sovereign wealth funds and insurers with long term liabilities and a low risk appetite seem suited to invest in infrastructure assets. Despite the theoretical ideal match between a large source of capital and an asset class in need of investment, the uptake of institutional investors has been slow. In addition to the lack of a transparent and stable regulatory framework this has been inter alia due to negative experiences with early investments, discontent with the vehicles used to access infrastructure assets and a lack of government facilitation.

This paper provides an overview of the global infrastructure investment market by outlining a wide range of options available to institutional investors for accessing the asset class. It examines why the flow of institutional capital into infrastructure assets has been limited and highlights some of the new initiatives (market and government led) that are developing in response to the challenges currently being faced, focusing on the unlisted equity market.

As a result of the liberalisation movement in the 1980s and privatisation of infrastructure assets, it has been through the unlisted equity vehicle that the characteristics of the infrastructure asset class have been formulated. Other options for investors have included investing in listed infrastructure companies or listed indices, but the advantages of gaining exposure to true long-term economic infrastructure through these products has been questioned. The early performance figures of infrastructure investments in both the listed and unlisted equity markets would indicate that there is a large amount of heterogeneity and lack of standardisation associated with the asset class. The great variability of infrastructure projects has meant that a lot of information asymmetries have existed in the early stages of the market leading to a lack of transparency with the vehicles on offer and, in the wake of the financial crisis, the subsequent failure of a number of investments.

One of the key areas of tension in the unlisted infrastructure equity market has been a conflict of interest between investors and fund managers over fund fees and terms and conditions. The fees charged by managers for core infrastructure have been in the past often excessively high, resembling private equity fees, despite private equity returns being higher. Investors have also been concerned the short time horizon of fund managers, with most funds offering closed-end models around 10 years. Investors on the other hand have been attracted to the asset class for the long duration of investments, which can be held for up to 30 to 50 years.

As a result, a number of new initiatives have emerged to overcome some of the early drawbacks of institutional infrastructure investment vehicles. The main drivers of these initiatives to pool institutional investors' capital have been the recognition that each individual institutional investor might not have the resources and expertise necessary to make direct infrastructure investments, and might also not have the scale and risk appetite to invest. Many investors also voiced concerns over the asset manager - asset owner relationship, and a desire to partner with other like-minded investors. It was felt that asset managers (i.e. infrastructure funds), were not representing the long-term interests of asset owners (i.e. pension funds) and there seemed to be a significant governance gap. Finally in emerging market economies additional solutions are needed to address the large gap between investment needs and investment supply.

With regard to unlisted infrastructure funds, it is recognised that a spectrum exists for the level of fees and terms and conditions of unlisted funds, similar to the spectrum of risk and return characteristics that exists for the different infrastructure investments. For example, funds investing in greenfield projects in emerging economies where risks are greater and the requirements for expertise are greater would be expected to charge higher fees than funds that invest in brownfield core economic infrastructure assets in developed countries. As a result of growing investor dissatisfaction, investment managers have had to make adjustments to the terms and conditions of their funds. Investors in search of stable, predictable, low-risk returns from their infrastructure investments must ensure that the underlying assets reflect the specific definition that they have associated with the asset class.

Investors have also opted to build in-house expertise to strengthen internal capabilities to invest directly or pool resources together into co-investment vehicles. Co-investment platforms have emerged as a way for investors to align interests, achieve larger scale and invest in assets without the expense of fund managers. The United Kingdom's Pension Investment Platform (PIP), Canada-based Global Strategic Investment Alliance (GSIA) and Canada Pension Plan Investment Board (CPPIB) -led syndicate model all provide examples of different co-investment structures that may help institutional investors access infrastructure investments more efficiently.

Because of the highly political nature of infrastructure investing, governments play a pivotal role to help facilitate the flow of institutional capital into infrastructure assets. The willingness of institutional investors in particular and the private sector more generally to finance major investment projects in any given country is heavily influenced by the perceptions of the country's investment climate and the broad suite of policy settings and institutions that underpin a country's economy and political processes. Through structural reforms, governments can create a more favourable investment climate, build private sector confidence to invest and ensure that global savings are channelled into productive investments.

Recent initiatives have seen governments or development institutions providing assistance in setting up infrastructure funds and contributing directly through seed funds. Equity funds formed as partnerships of public and private institutions could become important sources of finance and providers of organizational capacity and expertise in support of the financing of infrastructure projects. Initiatives such as the establishment of the Pan African Infrastructure Development fund, the Philippine Investment Alliance for Infrastructure fund and the Marguerite fund in Europe provide examples of how funds can be set up with government involvement to help attract institutional investment in the much needed investment areas of the emerging economies and greenfield infrastructure.

Initiatives reviewed in this paper, some yet to be proved successful, could represent models in the future for other similar public and private funds, both at regional and national level, for different infrastructure sectors. However public intervention in long-term investment projects should in principle (but see footnote 22) be decided on the basis of identified market failures to avoid crowding out private investments and should be appropriately priced and subject to fiscal considerations.

In order to catalyse institutional investment in infrastructure and guarantee the success of these initiatives, governments need to provide mechanisms to assist foreign investment, assist with more favourable regulatory conditions for investments and collaborate on all aspects of investment more transparently. A robust and effective policy structure is required to attract private investment in infrastructure and provide assurance to investors that any investments made will not be adversely affected by future (arbitrary) changes in policy. Initiatives where public capital is invested alongside and on the same terms as private capital help to provide the reassurance of a continued investor-friendly regime.

The decision to establish infrastructure funds needs to be based on the recognition that mobilising private capital and creating a clear pipeline of public-private partnerships is a crucial and complementary

step in responding to the national infrastructure development backlog. Infrastructure needs to be prioritised as a key driver for the country's long-term sustainable growth with the accompanying regulation providing clear rules for private investment and for institutional investors.

In addressing the barriers to investment and examining the prospective solutions, this paper concludes that a collaborative effort by all parties, including investors, product providers and governments, is required in order to increase the levels of investment in infrastructure by institutional investors. Moving from the current mindset to a longer-term investment environment requires a transformational change in both government and investor behavior. Promotion of a public-private dialogue ensuring a coordinated approach between investors, the financial industry and the public sector will be a key element to develop this new "investment culture".

1. Introduction

The emergence of private institutional investors for the financing of infrastructure has been in response to a number of dynamic influences that have taken place over the last half-century. Firstly, the spread of pension plans since the 1930's Great Depression signalled a shift in the social and political atmosphere whereby individuals became more conscious of the pressing need to provide for their future economic security. There has been a net flow of assets into pension funds of immense proportions due to the baby boom generation moving into their peak earning years and the requirement of private plans to be fully funded. While the growth of pension plan funds has predominantly taken place in Anglo American countries, globally pension fund assets have accumulated in value to over US\$29 trillion (OECD 2013). At the same time, the deterioration in infrastructure facilities over time has left infrastructure services in many areas substandard and in need of repair. The OECD estimates global infrastructure requirements to up to the year 2030 to be on the order of US\$ 50 trillion (OECD 1991, 2004, 2006). In the wake of the financial crisis, with governments facing the dual problem of high levels of debt on their balance sheets and the desperate need to stimulate their economies to avoid a lost decade of stagnant growth, facilitating private institutional infrastructure investment has emerged as a prominent public policy issue.

Over the last two decades, encouraged in part by the processes of privatisation, liberalisation and globalisation, institutional investors such as pension funds, insurers and sovereign wealth funds have started to invest in infrastructure assets. Pension funds and sovereign wealth funds have been attracted by these assets because of the associated favourable investment characteristics such as low competition and predictable and stable cash flows over the long-term (10, 20, 30 years and beyond) enabling liability matching and inflation hedging. But despite the favourable matching characteristics between liabilities of institutional investors and infrastructure investments, there are still a number of barriers that impede a steady flow of capital in infrastructure assets. A recent OECD analysis shows that pension fund allocations to direct infrastructure investments in general continues to remain small less than 1% for OECD pension funds surveyed. The "green" investment component of their asset allocations remains even more limited (Kaminker, C. and F. Stewart (2012)). This is partly because of bad experiences for investors in the early stages of development of the market and a lack of clarity around the true risks associated with these types of investments. Because of the inherent complexity and heterogeneity of infrastructure assets, there are a number of specific risks associated with the assets including political, reputational, environmental and governance risks. Additional uncertainty concerning these types of investments arises from the financing mechanisms put in place by financial service providers (as well as the funding and regulatory frameworks enforced by government institutions). Specifically, this uncertainty arises from the myriad of investment vehicles on offer for investors that have been developed through financial markets, with a wide range of risk/return characteristics. The confusion and uncertainty surrounding these factors has meant that institutional investor capital has not been channelled in infrastructure assets as freely as one might otherwise expect.

In response, a number of new initiatives have been developed to overcome some of the early pitfalls of institutional infrastructure investment vehicles. These have involved providing alternative ways for investors to pool their resources together to achieve a critical mass and align interests when executing investments. For those investors that are capable of doing so, the new initiatives help facilitate establishment of co-investment vehicles to access infrastructure assets directly without the need to invest via high fees and short-term horizons associated with certain infrastructure funds. For the smaller, less experienced investors, new fund terms and conditions are slowly being applied that are more aligned with the outlook these institutional investors have for this asset class. Because of the sometimes highly political nature of infrastructure investing, governments also play a pivotal role to help facilitate the flow of institutional capital into infrastructure assets. By helping to set up investment platforms or providing seed capital through regulatory mechanisms such as tax incentives for long-term investment and credit enhancement guarantees, and committing to providing a pipeline of investment opportunities for institutional investors, government-led initiatives are also catalysing institutional investment in infrastructure.

This paper aims to provide clarity on some of the issues associated with this evolving field and highlights some of the new models that are being used to facilitate the flow of investment. It firstly looks at the evolution of private institutional investment in infrastructure and examines how the market has developed. An analysis of the various investment vehicles is carried out with a snapshot of the growth experienced in the market. The infrastructure investor universe is then categorised by the specific approach that is utilised for investing in infrastructure. This is followed by highlighting the challenges and barriers to investment that have been evident in the market thus far.

The second part of the paper introduces the new initiatives that have developed in response to the drawbacks and early inefficiencies, highlighting specific case studies of co-investment platforms, government-led initiatives and revised unlisted infrastructure funds that are providing opportunities for institutional investors interested in investing in infrastructure assets.

2. Private Institutional Infrastructure Investment

The investment vehicles that make up the global institutional infrastructure market are made possible by governments that have adopted privatisation or public-private partnership policies. For instance, most infrastructure had previously been run by the public sector to allow decisions to be made in line with the objectives of government infrastructure policy balancing financial, social and environmental considerations. Over the last three decades, public capital investment in infrastructure has on average declined in OECD countries. The OECD average ratio of capital spent in fixed investment (mainly infrastructure) to GDP fell from above 4% in 1980 to approximately 3% in 2005. This drop reflected a decline in public investment in countries with both traditionally high and low public investment rates between the early 1980s and late 1990s, though it has subsequently stabilised.

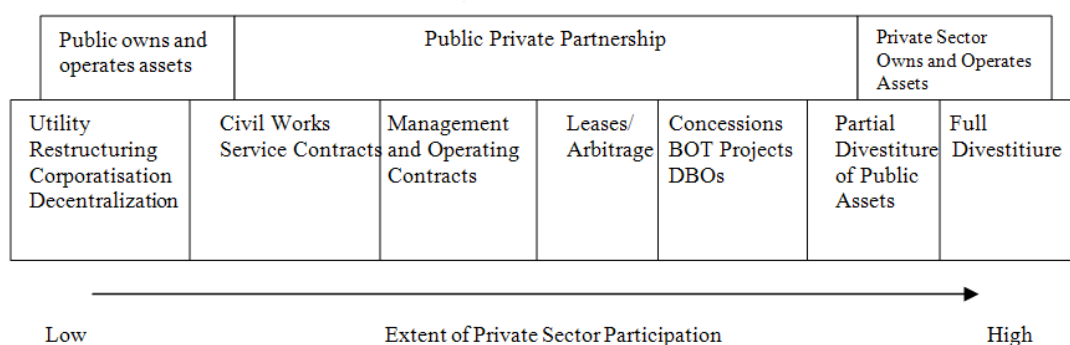
In the past, public provision of infrastructure has sometimes failed to deliver efficient investment outcomes, with misallocation of resources across sectors, regions or time often due to political considerations. Discontent with this approach surfaced in recognition that government decision-making was not always competent and gave undue weight to short-term political advantage rather than long-term objectives (Estache 2001). Efficiency improvements have been a key component of the rationale for privatisation in an attempt to reduce the budgetary burden caused by state enterprise inefficiencies. Productive efficiency brought about by the requirement of private firms to achieve profits has been important in this regard (Kay and Thompson 1986). The privatisation of infrastructure assets has also provided budgetary relief for governments, helping to reduce the macroeconomic constraints on public borrowing and spending.

As the share of government investment in infrastructures has declined, that of private sector has increased, with privatisations being an important driver. In OECD countries alone, some USD 1 trillion of state-owned assets have been sold in recent decades. Out of total privatisations of around USD 900 billion since 1990, more than 550 billion (63%) have been accounted for by infrastructure, notably utilities, transport and telecommunications.¹

The majority of the private sector’s infrastructure investment has been made directly by corporations such as utility and transport companies. However, since the 1990s, national policies of many countries have sought to increase private sector participation in the financing and implementation of infrastructure projects – especially new projects – by other complementary means, notably through “project finance”(EC 2011).

New business models with private sector participation, variants of public-private partnership models (PPPs) – often using the project finance techniques – have been increasingly used particularly in OECD countries, offering further scope for unlocking private sector capital and expertise².

Figure 1. Private Infrastructure Provision Spectrum



Source: World Bank 2011

Figure 1 above illustrates the spectrum of private participation for infrastructure projects. The different forms of the privatisation process with varying degrees of private participation will influence the way investors make their investment decisions:

Privatisation

Full Private Provision (FPP) involves the government transferring complete ownership of the asset to private players. In this case, the private investor takes on all of the risk of the investment (O’Neill 2009a, Macquarie 2009). Privatisation can involve individual asset sales, sales of interests in state-owned companies, outright sales of companies via initial public offerings (IPOs) or auctions. There is also a

¹ Data from the OECD Privatisation Database, and The Privatisation Barometer.

² The growth and spread of PPPs around the world is closely linked to the development of project finance, a financial technique based on lending against the cash flow of a project that is legally and economically self-contained. Project finance arrangements are highly leveraged and lenders receive no guarantees beyond the right to be paid from the cash flows of the project. Moreover as the assets of the project are specific, they are illiquid and have little value if the project is a failure (Yescombe 2007).

growing secondary infrastructure market enabling private institutions to acquire assets from other private players.

Public Private Partnerships

The term public private partnership broadly refers to an arrangement, typically medium to long term (20 to 30 years), between the public and private sectors where the services that fall under the responsibilities of the public sector are provided by the private sector. A key point is that a PPP is not simply a joint venture or the contracting out of certain services such as construction, maintenance and operations; instead the government enters into a contractual arrangement with a single firm (Special Purpose Vehicle) that agrees to provide the service. The SPV, then typically subcontracts with construction and operating companies allowing the government to concentrate on specifying the services that should be provided, and the contractor to provide the services at minimum cost (Irwin et al 2012), see box below.

Box 1. Public Private Partnership ("PPP")

The OECD recommendation of the Council on Public Governance of Public-Private Partnerships define PPP's in the following way:

Public-Private Partnerships (PPPs) are long term contractual arrangements between the government and a private partner whereby the latter delivers and funds public services using a capital asset, sharing the associated risks (see Box 1). In a PPP agreement the service delivery objectives of the government are intended to be aligned with the profit objectives of the private partner. The effectiveness of the alignment depends on a sufficient and appropriate transfer of risk to the private partners. In a PPP contract, the government specifies the quality and quantity of the service it requires from the private partner. The private partner may be tasked with the design, construction, financing, operation and management of a capital asset required for service delivery as well as the delivery of a service to the government, or to the public, using that asset. A key element is the bundling of the construction and operation and maintenance of the underlying asset over the life of the contract. The private partner will receive either a stream of payments from the government for services provided or at least made available, user charges levied directly on the end users, or a combination of both.

A public private partnership ("PPP") arrangement differs from conventional public procurement in several respects. In a PPP arrangement, the public and private sectors collaborate to deliver public infrastructure projects – such as roads, railways, airports or hospitals and schools. PPP contracts typically involve not only the delivery of the infrastructure, but also the management of the facility, maintenance and service delivery. PPPs typically share the following features:³

- a long-term PPP contract between a public contracting authority (the "Authority") and a private sector PPP company based on the procurement of services, not of assets;
- the transfer of certain project risks to the private sector, notably in the areas of design, build, operations and finance;⁴
- a focus on the specification of project outputs rather than project inputs, taking account of the *whole life cycle* implications for the project;
- the application of private financing (often *project finance*) to underpin the risks transferred to the private sector;
- payments to the private sector which reflect the services delivered. The PPP company may be paid by users (e.g. toll motorway), by the Authority (e.g. availability payments, shadow tolls) or by a combination of both (e.g. low user charges together with operating public subsidies).⁵

The UK and Australia are the most mature adopters, with PPPs accounting for around 10% and 5% respectively, of public investment in infrastructure. Many other countries have recently started using PPPs. Most countries initially developed PPPs in the transport sector and later extended their use to other sectors such as education, health, Government accommodation, water and waste treatment.

In sectors such as social infrastructure PPP projects are typically structured as availability based payment projects. The UK for example through the Private Finance Initiative (PFI) has largely used this model in the school and hospitals sectors.⁶ Other countries following the UK experience are Australia, Canada and South Korea.

One consequence of the rapid growth of infrastructure PPPs is that countries remain at vastly different stages of understanding and sophistication in using these innovative partnership models. PPP maturity and deal flow vary across countries due to differences in: legal and procurement frameworks; institutional arrangements; the level of political commitment and public acceptance; experience and competence levels; procurement approaches adopted (KPMG 2010).

³ A Guide to Guidance for PPPs – European Investment Bank – January 2011.

⁴ For more on different types of risks entailed in a PPP project, see OECD (2008), *Public-Private Partnerships: In Pursuit of Risk Sharing and Value for Money*, OECD, Paris; and IMF (2004), *Public-Private Partnerships*, Fiscal Affairs Department, International Monetary Fund, Washington DC.

⁵ In availability based projects, the revenue is not subject to a material element of price or volume risk and payments are made by the Authority for operating and maintaining a public asset as per contracted standards.

⁶ However the Building Schools for the Future (BSF) programme in the UK was revisited by the Coalition Government in 2010.

2.1 Infrastructure Investments Defined

Infrastructure assets have been defined as the physical structures and networks that provide essential services to the public and community (Macquarie 2009). Such a broad definition has led to the inherent lack of uniformity for the infrastructure financial product.

Infrastructure is usually divided into economic and social sectors. Using a broad definition, economic infrastructure typically includes transport (e.g. ports, airports, roads, bridges, tunnels, parking); utilities (e.g. energy distribution networks, storage, power generation, water, sewage, waste); communication (e.g. fixed/mobile networks, towers, satellites); and renewable energy (e.g. solar and wind generation). Social infrastructure - also called public real estate - includes: schools; hospitals and defense buildings, prisons and stadiums.

In addition to the physical characteristics, there are other elements that further define the infrastructure investment universe such as the contractual approach, the phase of asset development (e.g. Greenfield vs. Brownfield) and stage of development of the market⁷. Overall the definition of an individual infrastructure opportunity needs to draw on the different elements in order to provide a meaningful description. For example, a new social project in a developed market is very different from the privatization of an established economic project in an undeveloped market.

Box 2. Greenfield vs. Brownfield Investments (Weber and Alfen 2010)

Greenfield or primary projects are assets generally constructed for the first time at a specific site. They may be in the planning, development, financing or construction stage. In contrast, brownfield or secondary projects are already operational and/or have a predecessor of some form at the same location. These projects may involve the reconstruction, renovation or expansion of existing assets. In other words the key differences lie in the maturity of the project and the available project-specific experience, which is significantly less in the case of Greenfield projects. This may lead to a considerably higher degree of uncertainty and risk due for example to traffic risk and construction risk out of the investor's control.

Investors in Greenfield projects do not generally turn a profit in the first years of the development and construction phase, but instead are merely required to make payments. Initial capital is only returned when the respective facility is operative (making for a J curve which is typical of cash flows from private equity investments). Investors accept the higher risk associated with the project because of the growth potential of an asset in its start-up phase, and the value growth expected. In the secondary market, investors' main interest is in high and stable dividends. This resembles the regular income streams from real estate or bonds. In the traditional investment style classifications, secondary market investments would suit income-style investors, while primary market investments would suit growth-style investors.

The core infrastructure assets outlined above 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, low volatility and low correlation to the performance of other asset classes.

From an investor's perspective, depending on the investment characteristics of the specific project, infrastructure will be classified according to its risk/return profile. It is important to incorporate a financing perspective in defining the term infrastructure, as these differences will ultimately attract or deter different

⁷ See World Economic Forum 2010

sources of private finance. From a financing perspective any definition needs to take into account both the cash flows and risk and reward nature of infrastructure (World Economic Forum 2010).

2.2 Institutional Investors and infrastructure investment

In recent years diversification benefits and higher expectations of investment returns are increasingly driving investors to alternative investments, such as private equity, real estate and commodities. Alternative investments generally have lower liquidity, sell in less efficient markets and require a longer time horizon than publicly traded stocks and bonds. Investments in alternative assets can also help promote sustainable economic growth and create wider social benefits (World Economic Forum 2011). Infrastructure is often included in the alternative investments part of investor portfolios.

Infrastructure investments are attractive to institutional investors such as pension funds and insurers, as they can assist with liability driven investments and provide duration hedging. These investments are expected to generate attractive yields in excess of those obtained in the fixed-income market but with potentially higher volatility. Infrastructure projects are long-term investments that could match the long duration of pension liabilities. In addition, infrastructure assets linked to inflation could hedge the sensitivity of pension fund liabilities to increasing inflation.

Different countries are at different stages in the evolution of pension fund investment in infrastructure. Some large pension funds, particularly in Australia and Canada, have been actively raising their allocations to infrastructure over the past decade and allocations are as high as 10-15% among some pension funds (Inderst and Della Croce 2013).

Box 3. Report on pension fund' long-term investments prepared for G20 Leaders [Annual Survey of Large Pension Funds and Public Pension Reserve Funds]

The survey illustrates the role that large institutional investors can play in providing a source of stable long-term capital. The survey reviewed trends in assets and asset allocation by 86 large pension funds and Public Pension Reserve Funds (PPRFs), which in total managed nearly USD 10 trillion in assets, more than one-third of the total worldwide assets held by this class of institutional investors. The survey was presented to G20 Finance Ministers and Central Bank Governors at their October 2013 meeting in Washington

This year's survey results show a still low level of investment in infrastructure on average among the surveyed funds, despite evidence of growing interest by pension fund managers. This seems to confirm the importance of barriers and disincentives, which limit such investments and the relevance and need for policymakers to address them. If we consider total assets under management for the complete survey (i.e. 69 funds), infrastructure investment in the form of unlisted equity and debt was USD 72.1 billion in 2012, accounting for just 0.9% of the total assets under management of the surveyed funds.

Thirty-three pension funds reported an allocation to unlisted infrastructure equity. Total investment in unlisted infrastructure equity at the end of 2012 was USD 64.0 billion, which represented 3% of total assets of these funds. This is up from an amount of about USD 55 billion in 2011, which corresponds to a nominal increase of 16.5 %, but reflects little change when reported as a ratio to total assets⁸. However, some funds have ramped up their direct infrastructure exposures. Notably, Australia's Future Fund increased its total portfolio allocations to unlisted equity by 0.8 percentage points. Among pension funds, FUNCEF increased its infrastructure allocation by 2.3 percentage points. Still, the room for manoeuvre for most pension funds is still very large and there are clear opportunities for further increase in pension funds' investment in infrastructure.

The survey showed that data on long-term investment – and in particular infrastructure investment – by pension funds is readily available from the funds themselves. However, the methodologies and definitions used to classify such investments can differ widely, rendering comparisons and aggregation difficult. There is clearly a need to standardise definitions and classifications to facilitate monitoring.

3. Existing Institutional Infrastructure Investment Vehicles

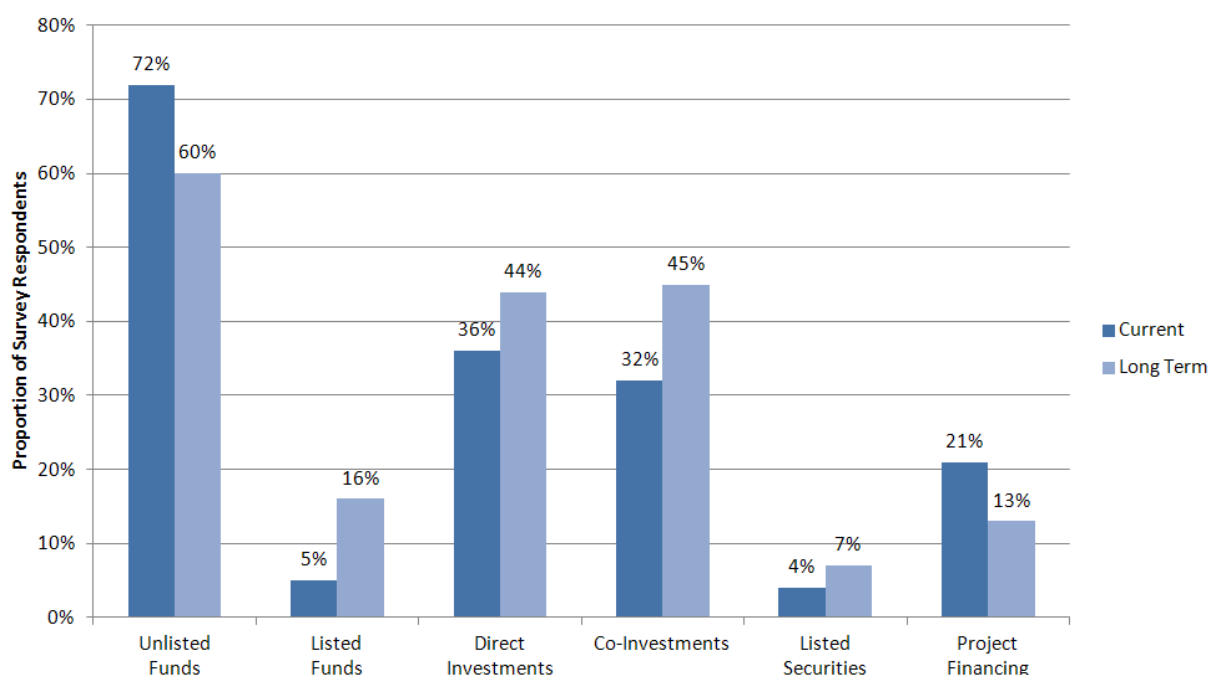
As is the case for other asset classes, and depicted in Section 2 above, there are a number of different vehicles on offer for private investment in infrastructure. Both debt and equity vehicles have been used by investors to access core economic infrastructure. The infrastructure asset class is heterogeneous and not all investments embody the same risk/return characteristics. The vehicle selected for investment will therefore depend both on the nature of the asset and on how the investors have defined and allocated infrastructure in their portfolios.

As the market continues to grow and information about the asset class becomes more readily available, the existing vehicles will become more refined and new offerings will emerge. Market analysis suggests that, to date, unlisted equity investments have been the most popular vehicle for institutional investors to access core economic infrastructure (Probitas Partners 2010). This is highlighted below in the

⁸ Figures may be understated given that for fixed income the majority of the funds do not report such details on their allocation and infrastructure unlisted equity is often included in other asset classes. Some funds also report their allocation to infrastructure through listed equity (i.e. infrastructure corporates), which for purposes of this survey, we have considered as indirect exposure.

graph depicting the results of a survey of 75 institutional investors conducted by data provider, Preqin⁹. The graph shows that among all unlisted vehicles: unlisted funds, direct investments, and co-investments are the most common for institutional investors. Co-investments are a form of direct investing whereby institutional investors partner up with other investors to form a consortium to invest in an asset. These vehicles are discussed in more detail in latter sections of the paper. Unlisted equity refers to equity investment in a company that is not listed on a stock exchange. The value of the company is not therefore directly affected by stock market sentiment. For infrastructure, unlisted equity investments have been made along the privatisation spectrum illustrated above i.e. in privatised brownfield companies or into the SPV of a PPP arrangement either at the development (Greenfield) or operating (Brownfield) stage.

Figure 2. Infrastructure Investors by Preferred Route to Market



Source: Preqin 2012

3.1 Unlisted Fund Market

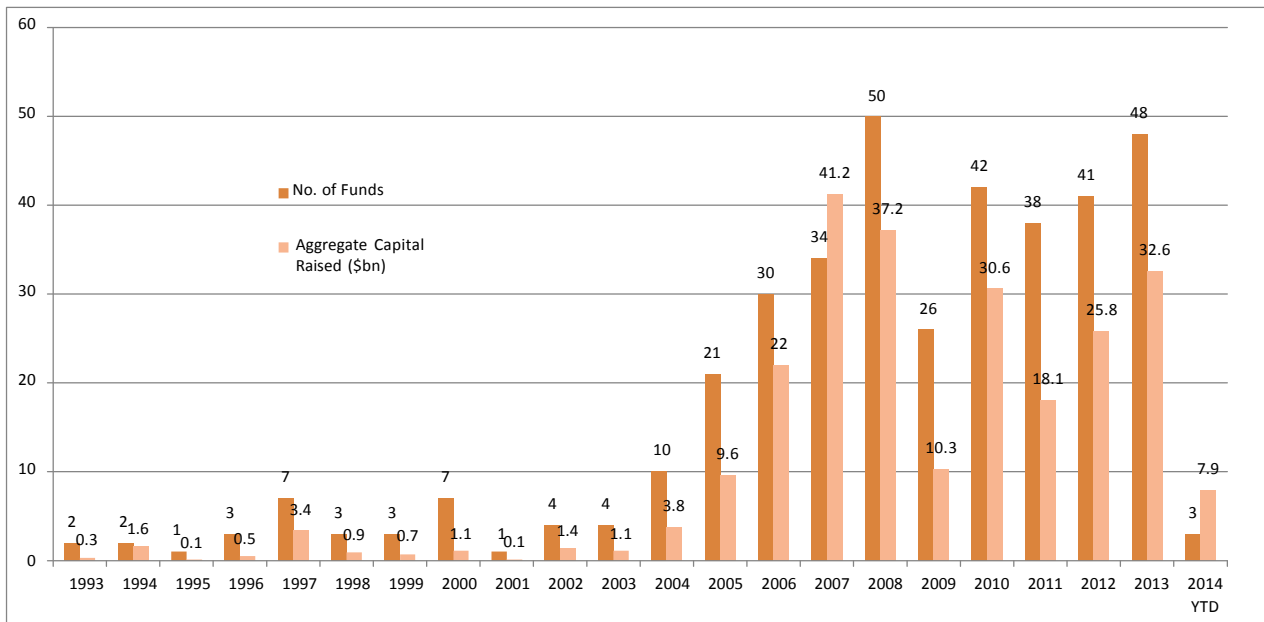
Institutional investors invest in an unlisted infrastructure fund as limited partners (“LPs”). The fund is managed by the general partner of the fund (“GPs”), often an investment bank or investment management firm. The general partner then invests contributions to the fund in various infrastructure assets on behalf of the limited partners.

Figure 3 below shows the growth in the unlisted infrastructure fund market since 1993. The annual levels of capital raised by unlisted infrastructure funds have increased significantly since 2003. The figure highlights the exponential growth experienced in the unlisted fund market during the period from 2004/05

⁹ The survey conducted by Preqin consisted mainly of pension funds and sovereign wealth funds but also included insurance companies, banks and other smaller institutional investors. Project financing in the survey referred to investments in debt for infrastructure projects.

to 2008. The greatest change in the growth of the market occurred between 2005 and 2006, when the aggregate capital raised more than doubled from \$9.4 billion to \$21.8 billion¹⁰ and the number of funds increased from 20 to 33. It is also interesting to note that between 2006 and 2007, while the number of funds in the market only increased by seven, the aggregate amount of capital raised actually increased 93% from \$23.8 billion to \$44.8 billion. The effects of the global financial crisis on infrastructure fundraising can be seen in 2009, with the number of funds dropping from 58 to 27 and the aggregate capital raised declining from \$40.7 billion to \$10.5 billion. In 2010, as the economy started to improve, investor sentiment for infrastructure seemed to rebound, with the number of funds more than doubling from the 2009 level to 48 and aggregate capital also more than doubling to \$31.9 billion. The 2010 figures represent a 15% decrease from the 2008 levels. In 2011 and 2012, the number of funds raised has remained relatively constant around the mid 40's mark. The amount of capital raised has decreased slightly from the 2010 levels and is considerably lower than the 2007 and 2008 levels.

Figure 3. Growth in Unlisted Fund Market



Source: Preqin 2014

With more governments privatising infrastructure assets since the early movers in the 1980's, a globalisation of the infrastructure fund market has occurred as nations have sought to attract private sources of capital. Historically, infrastructure funds have focused primarily on the developed world, specifically in Europe and some other OECD countries. Surprisingly, the first unlisted infrastructure fund focused principally on US assets closed only in 2004. The US has not warmed to private investment in infrastructure development as readily as some other countries. This has been due to many US states lacking the technical capacity to implement PPPs, political and public sensitivity over foreign ownership and many states not having PPP enabling legislation. There has also been a preference in the US to utilise municipal bond financing for infrastructure. Similarly, the number of unlisted funds focusing on Asia and the rest of the world since 2004 has been consistently lower than in Europe or the US. The average fund size in Asia

¹⁰ All figures in this section are quoted in US\$ unless otherwise stated.

and the rest of the world is also a lot smaller as funds there are usually country-specific funds as opposed to typically continent-wide European or US funds (Prequin 2008).

3.2 Unlisted Direct Equity Investment

Direct equity investment refers to investments made directly in unlisted infrastructure assets without the need to utilise a fund manager for the investment process. This method of investment has been utilised by institutional investors that have the in-house resources and capability to source assets, finance the investments and manage/maintain them. Clark *et al.* (2011) estimate there to be approximately twenty direct institutional investors in the market.

While obtaining a figure for the total amount of direct investment in infrastructure is difficult, a sample of 33 funds from the “Annual Survey of Large Pension Funds and Public Pension Reserve Funds” conducted by the OECD in 2013, found that USD 35 billion had been directly invested in infrastructure by institutional investors (OECD 2013 a). These funds represented Australian, Canadian, Danish, Dutch, New Zealand, South African and UK pension funds. Some examples of direct investors listed by country include: Ontario Municipal Employees Retirement System, Ontario Teachers’ Pension Plan, Canadian Pension Plan Investment Board, Caisse de dépôt et placement du Québec, Alberta Investment Management Company from Canada; Universities Superannuation Scheme from the UK; Government Investment Corporation from Singapore; UniSuper, Australian Super, Future Fund, from Australia; NZ Super from New Zealand; CalPERS, Dallas Police and Fire Pension System from the USA; APG, PGGM pension fund asset managers from the Netherlands. As the complex nature of infrastructure investing becomes more readily understood, an increasing number of sufficiently large investors will be looking to invest directly and avoid the fees associated with the fund manager route.

3.3 Listed Infrastructure Market

Listed Infrastructure Funds

The set up for listed infrastructure funds is similar to the unlisted fund structure in that an external manager invests on behalf of investors in various infrastructure assets. While the fund is publically listed, the assets invested in by the fund may or may not be listed. The listed infrastructure fund model is aimed at both retail investors and institutional investors.

The model has drawn criticism because of sometimes complex financial structures, including high levels of debt and potential overpaying for assets in order to inflate fees payable by investors. Some funds paid dividends and fees greater than the total profits of the invested companies, *i.e.* paying dividends out of new debt (Hall 2009, RiskMetrics 2008, O’Neill 2009b). These excesses were exposed with disastrous consequences by the 2008 global financial crisis and ensuing credit crunch, which forced reversion to the unlisted model in some cases. At least eleven infrastructure funds that were listed on the Australian Stock Exchange in 2007 are no longer listed (RiskMetrics 2008).

In 2013, most listed infrastructure fund deals were made in Europe (52%), followed by North America (34%). Listed infrastructure fund deals in Asia and the rest of the world both accounted for 7% of the total deals (Prequin 2013)

Listed Infrastructure Indexed Funds

Listed infrastructure companies contained in well-established stock market indices have provided attractive investment opportunities for retail and institutional investors for a number of years. The index provider Standard & Poors (S&P) estimated the market capitalisation of listed infrastructure companies around the world to be USD 2.1 trillion in 2007 (S&P 2007). Infrastructure indices have been formed to

track the performance of listed companies in this asset class. Listed infrastructure securities funds have also been set up to enable investors to invest in a portfolio of securities of listed infrastructure related companies.

The S&P Global Infrastructure Index was launched in 2006 to track the performance of the largest 75 companies in the infrastructure sector (energy, transportation, utilities). The constituents of the index include 40% from transportation and utilities and 20% from energy. At the end of 2008, the index included 75 companies from 24 countries with a combined market capitalisation of USD 733.7 billion. The effect of the 2008 global financial crisis can be seen in the fall from a market capitalisation figure at the end of 2007 of USD 1.2 trillion (S&P 2008a). The S&P Emerging Markets Infrastructure Index tracks 30 of the largest publically listed emerging market companies in the global infrastructure industry. The index is made up of companies from the transportation, energy, and utilities sectors with weights of 20%, 40%, and 40%, respectively. The combined market capitalisation at the end of 2008 was USD 51.95 billion compared with USD 103 billion at the end of 2007 (S&P 2008b).

The Macquarie Global Infrastructure Index (MGII) was introduced by Macquarie and FTSE in 2005. The MGII comprises a broad range of infrastructure stocks in the sectors (water, transport services, pipelines, multi-utilities, gas distribution, electricity, and telecommunications hardware) (FTSE 2008). As of May 2009, MGII consisted of 231 stocks with a combined market capitalisation of USD 1.13 trillion (compared to USD 1.6 trillion in 2007). This index figure has grown from USD 383 billion in 2000 (Macquarie 2009). The MGII is heavily biased towards utilities with over 80% representation. The investable Macquarie International Infrastructure Securities Fund uses the MGII as its benchmark. Macquarie, in conjunction with FTSE, has a total of 16 benchmarked tradable indexed funds covering all geographic regions and infrastructure sectors (FTSE 2008).

The FTSE IDFC India Infrastructure Index was formed by IDFC (Infrastructure Development Finance Company) and FTSE to represent the performance of Indian companies that generate the majority of their revenue from infrastructure. The FTSE IDFC India Infrastructure Index is comprised of 60 companies in the sectors transportation, energy, water resources, and communications infrastructure. The market capitalisation of the FTSE IDFC India Infrastructure Index in August 2009 was USD 52.5 billion compared to USD 50.0 billion in 2007 (FTSE 2007).

Some other indices include the Goldman Sachs INFRA Infrastructure Index, CNX Infrastructure Index and MSCI Infrastructure Indices.

A major problem with listed infrastructure indices is the vagueness with which infrastructure is defined and whether the listed index actually reflects the true infrastructure exposure that investors seek. The core economic infrastructure and social infrastructure defined above are associated with steady, inflation-linked cash flows derived from appropriately leveraged, contracted assets with low technology, market, and development risk (Orr 2009). The constituents of the indices mentioned in this section, however, also include growth companies such as sellers of construction, electrical and engineering equipment, the performance of which is much more volatile and vulnerable to new infrastructure development and business cycle risk (Orr 2009). Caution must be taken when using the indices to measure the market for infrastructure. If institutional investors are only seeking core economic and social infrastructure asset exposure, it is unlikely that the indices above will generate risk-return behaviour that is aligned with what investors want. This is highlighted by the significant drop in market capitalisation figures in the indices as a result of the 2008 global financial crisis (highlighted by Table 1 below). True economic infrastructure assets, because of their inelastic demand, should not be as drastically affected by short-term variations in the economic climate.

One index that stands out from the vaguely defined infrastructure indices is the Dow Jones Brookfield Infrastructure Index, which was formed in July 2008 (Orr 2009, Dow Jones 2008). Here, the index components are derived from companies that exhibit the following strong infrastructure characteristics: high barriers to entry, royalty stream based on economic growth/inflation, high operating margins, low capital and maintenance expenditure and growing long-term cash flows. The market capitalisation of the Dow Jones Brookfield Global Infrastructure Index as at October 2009 was USD 376 billion. The sector with the highest allocation in the index was oil, gas & transportation, with 31%, followed by transmission and distribution with 24% (Dow Jones 2009).

Table 1 below summarises the market capitalisation values for global infrastructure indices in 2007 and 2008.

Table 1. Market Capitalisation Values (\$US billion) for Global Infrastructure Indices

	2007 (\$US billion)	2008/09 (\$US billion)
S&P Global Infrastructure	1200	734
S&P Emerging Markets	103	51.95
Macquarie Global Infrastructure	1600	1130
FTSE IDFC India Infrastructure	50	52.5
Dow Jones Brookfield Global		376

Source: Authors

The effect of the global financial crisis on public markets can be seen in Table 1 with market capitalisation figures for all major infrastructure indices severely dropping in value from the 2007 figures. The slight increase in value of the FTSE IDFC India Infrastructure index highlights the reduced impact of the global financial crisis on emerging economies compared with the large Western markets.

3.4 Infrastructure Debt Vehicles¹¹

Infrastructure projects, because of their immense size, have typically required a large amount of debt financing. Before the financial crisis, this amounted to up to 90% of the total asset value. Infrastructure debt is usually classed as a fixed-income product for investors and can be broken down into a number of different types.

In Greenfield projects, there are typically two types of debt financing: Project Finance (predominant) and Project Bonds (smaller volumes although increasing rapidly). Project finance is a long-term loan structure that relies on the project's cash flow for repayments and uses the project's assets as security or collateral. Project Finance loans are usually offered by banks who have various mechanisms to control the risks associated with the construction phase of infrastructure projects. Construction projects have also been financed by bonds. In these cases, the project procurer utilises a financial institution, usually an investment bank to underwrite bonds, targeted at institutional investors.

Once construction has been completed and the infrastructure asset becomes operational, long-term bonds may replace the bank loans and short-term bonds from the early stages of the project.

¹¹ For a more in depth analysis of infrastructure debt vehicles see Gatti S, (forthcoming 2014) "Government and market based instruments and incentives to stimulate long-term investment finance in infrastructure", OECD working paper No 37, OECD publishing.

For brownfield assets, institutional investors are able to invest in long-term bonds or corporate bonds that are linked to the infrastructure company.

The debt issued for infrastructure finance varies in seniority from senior debt (lower risk, usually bank loans) to junior or mezzanine debt (higher risk). Senior debt holders assisted by a security package and stringent covenants are first in line to be repaid if an investment fails, ranking higher than junior debt holders, mezzanine debt holders and equity investors.

Credit rating agencies and credit insurance companies (such as monoline insurers¹²) play an important role in the issuance of bonds. Initially, a shadow rating is placed on the project by a credit rating agency, which can then be increased by the project owners through some form of enhancement such as the purchase of insurance. As risk perceptions and circumstances change, the bond covenants require the project owners to pay premiums to preserve the initial risk rating of the bond. Credit rating companies are most concerned about the impact of risks on the company's ability to meet debt repayments. Poor information, ambiguities and discretion in the contract all contribute to lower ratings (Engel et al 2010).

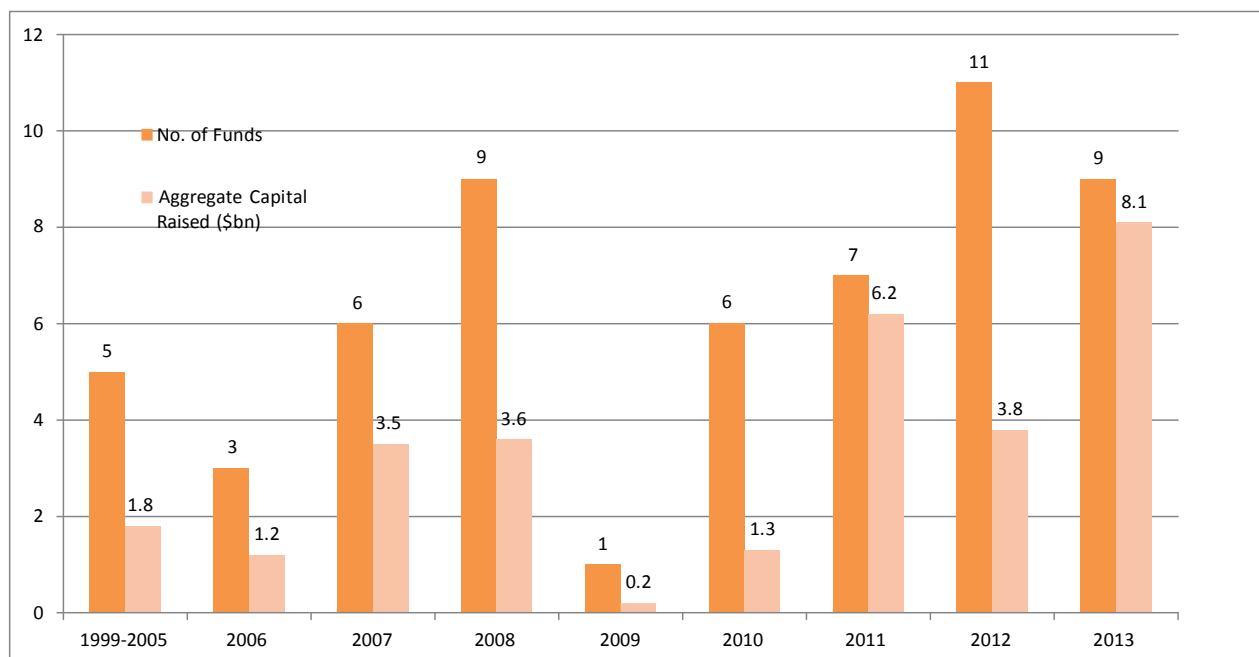
In the post-financial crisis era, infrastructure debt funds have increased in prominence as a contraction in credit markets has made sourcing long-term funding for both new developments and asset refinancing more difficult. Stricter controls on banks' debt-to-capital ratios have led to reduced lending by banks. The regulations on bank capitalisation, such as Basel III as well as a general deleveraging exercise in the wake of the crisis, have forced banks to increase the amount of capital they must hold, potentially affecting their ability to provide loans for infrastructure projects.

Debt funds have been marketed by General Partner firms as an alternative to traditional debt from banks. Such funds are offered as a way of investing in assets that are relatively safe but offer a yield higher than government bonds. Given that the typical debt-to-equity leverage ratios for infrastructure projects are on the order of 75:25 or 90:10, there is considerable opportunity for investors to invest in senior debt over equity.

The figure below shows the number of unlisted infrastructure debt funds that had been raised and were being raised to year end 2013.

¹² Monoline insurers are specialised insurance companies that guarantee the repayment of bonds. The credit crunch and financial crisis brought about the demise of monoline insurers as many had moved away from stable bonds and into risky subprime mortgage assets. This has affected the ability of infrastructure investors to access project finance although the credit worthiness of insurers is starting to recover (Plimmer and Wigglesworth 2012). The Europe 2020 bond initiative has been set up by the European Commission to help investors raise finance for infrastructure projects. The initiative is intended to provide an alternative to the monoline guarantees for infrastructure bonds. The Europe 2020 project bond facility would either provide guarantees directly to senior debt holders or introduce a junior debt layer underwritten by the EIB between the equity and the senior debt (Eurofi 2011).

Figure 4. Annual Unlisted Infrastructure Debt Fund Fundraising



Source: Preqin 2014

Institutional investors that invest in debt funds are likely to include these investments in the fixed-income or alternative assets allocation of their portfolio, depending on the associated risk.

Recent developments in debt vehicle include interesting partnership between bank and institutional investors. For instance, recently, 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 €2 billion in the next three years.

3.5 Expected Performance of Infrastructure Investments

While the market for infrastructure funds (of all types) is in its infant stages and availability of reliable data on returns to investment in infrastructure is scarce, there have been a number of industry-based and academic studies that have analysed returns. These are shown in Table 2 below.

Table 2. Summary of Infrastructure Return Figures

Type	Source	Institution	Publication Date	Period Studied	Geographic Region	Annualised Return Figure (%)
Unlisted Fund	Academic	Peng and Newell	2007	1995-2006	Australia	14.11
Unlisted Fund	Academic	Newell et al	2011	1995-2009	Australia	14.11
Unlisted Fund	Academic	Finkenzeller et al	2010	1994-2009	Australia	8.2
Unlisted Fund	Academic	Hartigan et al	2011	1998-2008	UK	6.5
Unlisted Fund	Private Sector/Industry	Macquarie	2004	1995-2002	Australia	19.2
Unlisted Fund	Private Sector/Industry	Mercer	2005	1996-2005	Australia	13.3
Unlisted Fund	Private Sector/Industry	Colonial First State	2006	1996-2006	Australia	13.5
Unlisted Fund	Private Sector/Industry	Colonial First State	2010	2001-2010	Australia	11.1
Listed Funds	Academic	Peng and Newell	2007	1995-2006	Australia	22.5
Listed Funds	Index Provider	ASX	2010	2006-2010	Australia	-2.79
Listed Securities	Private Sector/Industry	Macquarie	2009	1994-2009	Global	4.2
Listed Index	Private Sector/Industry	Dow Jones Brookfield	2011	2002-2011	Global	14.6
Listed Index	Index Provider	S&P	2010	2006-2010	Global	6.8
Listed Index	Index Provider	S&P	2010	2006-2010	Emerging Markets	15.6
Listed Index	Private Sector/Industry	MSCI	2010	2002-2011	Global	0.04
Listed Index	Private Sector/Industry	FTSE/IDFC	2011	2006-2010	India	32.1
Listed Index	Private Sector/Industry	UBS	2011	2006-2010	Asia/Pacific	5.7

Source: Authors

The figures shown above illustrate the lack of standardisation and heterogeneity that exists in the infrastructure asset class. In the early stages of this market, some investors were able to enjoy high returns (akin to returns on equity investments) with the advantage of bond-type risk. With demand and knowledge rising, it is expected that returns will stabilize towards a much lower level in the long term. Nevertheless, the underlying variety inherent in this asset class with regards to the types of assets and financial products as well as geographic location, could result in continued variability rather than convergence to an equilibrium level of return on investment.

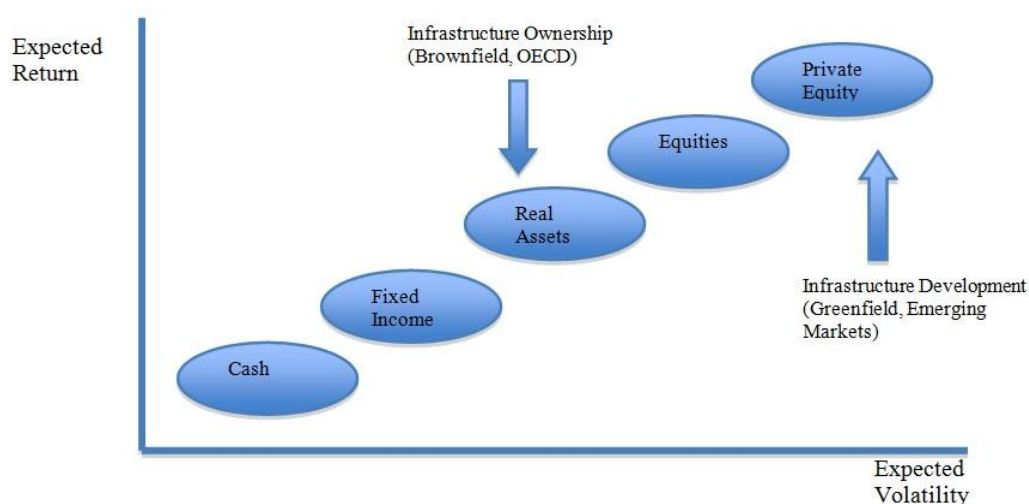
A number of firms have published their expected risk and return profiles to illustrate where infrastructure investments rank with other asset classes. Infrastructure has usually been described as showing both higher risk and higher returns than equities, but at times risks have been perceived as lower

than for equities, with returns sometimes lower and sometimes higher than for equities. Mercer states that financial products falling into the category of diversified infrastructure funds should be striving to achieve returns of 9-12% (Mercer 2005). RREEF separates the total return expectations of mature assets (10%-14% pa) from early-stage assets (18 % pa) (RREEF 2007). Within the infrastructure sector, returns can vary depending on the type of asset. For example, JP Morgan Asset Management expects lower rates of return for toll roads (2-8%) and PPP/PFI (9-14%) compared with airports (15-18%) and broadcast networks (15-20%). An overall infrastructure average is given as 10-15% (Quadrant 2008).

From an investor's perspective, Inderst (2009) reports on a survey of European pension funds that shows return expectations for the infrastructure asset class to be 9.5% annualised over ten years, ranking it below private equity (11.3%) but above stocks (9.0%), bonds (5.1%) and cash (3.7%). As an example of the large pension funds, the Dutch fund APG expects a return of 10% from infrastructure in comparison to 6% for real estate and 15% for private equity. CalPERS expect an annual return of inflation (CPI) plus 5-7% (Inderst 2009).

Some investment management firms have separated core brownfield economic infrastructure from riskier greenfield infrastructure development on the risk/return spectrum as follows:

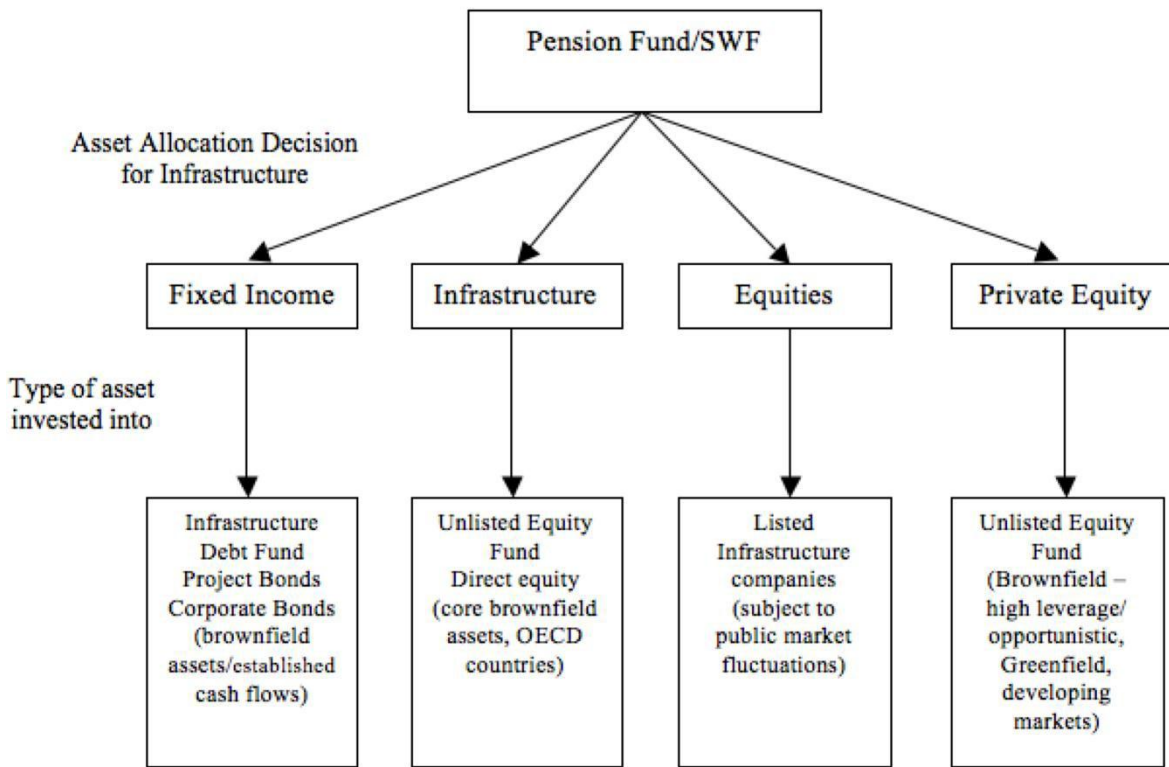
Figure 5. Infrastructure Risk/Reward Profile



Source: Adapted from Lazard 2007

The level of return expected from an infrastructure investment will depend in part on how exactly the specific asset is defined and categorised within the sector. The great variety of products available as well as the inherent heterogeneity associated with the assets would enable investment in infrastructure along the entire risk/return spectrum above. The investment decision of investors is often related to how infrastructure is allocated within their investment portfolio; *i.e.* how investors define infrastructure in their portfolio will influence the type of assets or vehicles in which they invest. The categories used to group the various investment vehicles for infrastructure have included: fixed-income; infrastructure; equities; alternatives; and private equity. Figure 6 below illustrates how the allocation decision of investors will determine the type of vehicle and assets in which they invest.

Figure 6. Investor Asset Allocation for Infrastructure



Source: Author

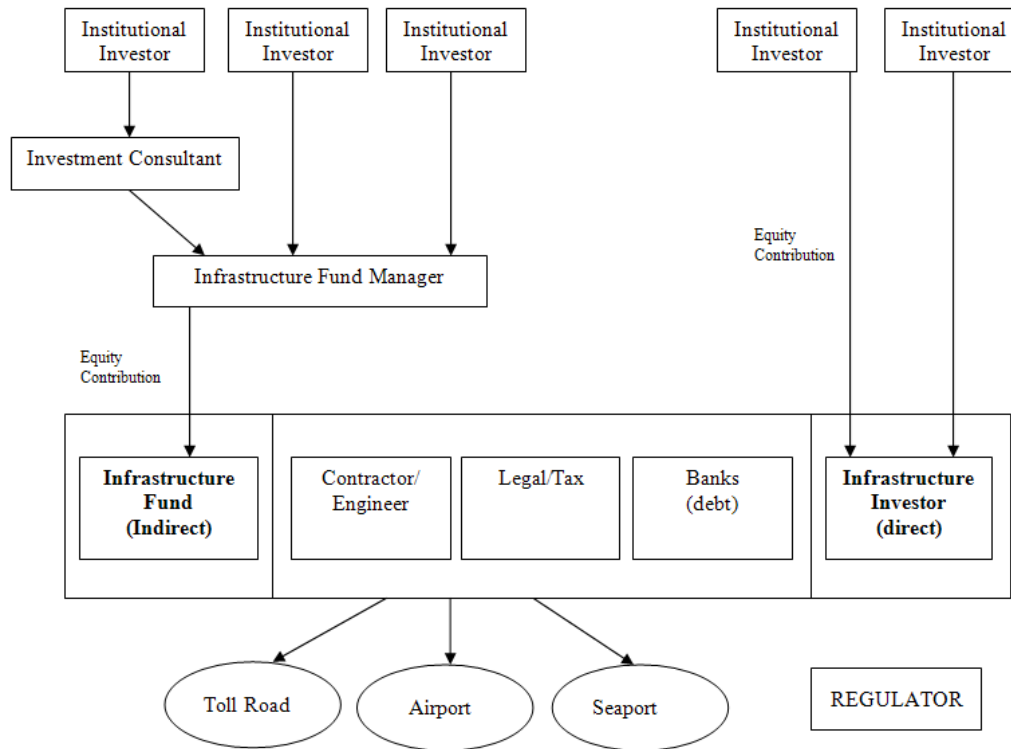
With investors looking to invest in stable, resilient asset classes after the global financial crisis, many core economic infrastructure assets appear to be a favourable option. However, institutional investors have to be cautious and must ensure that the underlying assets acquired through the vehicles on offer reflect the specific definition that they have associated with the asset class.

3.6 Methods of Investment

Despite the wide variety of financial products on offer, it is through the unlisted equity investment vehicles that the characteristics of a separate asset class for investors have developed. Because of the heterogeneity of infrastructure assets and underlying information asymmetries, long-term relations between institutions and individuals have often been central to the infrastructure investment process, with a particular reliance on financial intermediaries. Whether an investor invests directly in the asset class or utilises financial intermediaries will depend in large part on the size and internal resource capability of the investor. For example, the governance and internal resources of a pension fund will determine the extent of reliance on external investment consultants or fund managers.

The relational form of infrastructure investing can take one of two main structural forms, indirect or direct, with variations illustrated in Figure 7.

Figure 7. Methods of Institutional Infrastructure Investment



Source: Adapted from Torrance 2009

The indirect investment method involves the pension fund investor deploying its capital in an infrastructure fund, passing on all responsibility for the investment to the fund manager. Investment consultants have played an increasingly important role in the indirect relational infrastructure investment process, providing advice to the smaller pension funds for investing in infrastructure. The investment consultant usually initiates the process by advising the investor of the benefits of an allocation to infrastructure. Once the investor has agreed to invest in infrastructure, the consultant then provides advice on a suitable manager through which to invest. The manager’s role in the process is to source appropriate assets in which to invest on behalf of institutional investors.

As shown in Figure 7, the second, direct method relates to the situation where the pension fund investor has the capability to forego the consultant and manager stages of the investment process and is able to invest directly in infrastructure assets. This means that these investors have the in-house resources and capability to finance investments and manage/maintain them.

Direct investments, typically involving industrial sponsors can be made alongside co-investment partners in a consortium consisting of other pension fund investors and infrastructure fund managers. The equity arrangement in a consortium of direct investors varies from asset to asset. In a co-investment arrangement, it is usually the fund manager or largest pension fund investor in the consortium that leads the transaction.

In line with the two main methods of investing on offer, the infrastructure investor universe is differentiated based on the size of assets under management and governance capability. The very large pension funds capable of directly investing in infrastructure will have a separate division of the fund’s

investment committee solely focused on infrastructure investments¹³. Medium to large funds may have one member of the investment committee dedicated to infrastructure with the responsibility of carrying out due-diligence on fund managers and making recommendations to the wider committee. It is likely that this person would not be entirely focused on infrastructure and would have other asset classes to look after as well. The smallest funds would most likely have no dedicated infrastructure asset analysts and based on a collective trustee or investment committee decision employ the advice of an investment consultant for an allocation to the infrastructure asset class.

4. The Current Challenges and Barriers to Infrastructure Investing

Despite the growth experienced in the institutional infrastructure investment environment, currently less than 1% of pension fund assets are allocated directly to infrastructure projects and a number of obstacles remain. In order to continue 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.

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.

Contrary to the conventional wisdom according to which one of the barriers to private investment in infrastructure is the lack of financial support by the public sector, most of the surveys targeting infrastructure investors clearly indicate that public money in whatever form supplied to infrastructure *is not* the main concern (Gatti forthcoming 2014). A survey conducted by Allen & Overy (2009) demonstrates clearly that what investors require when approaching infrastructure investments is not primarily public financial support. Together with guarantees on funding, it ranks at the bottom of the list. Instead, robust rule of law and attractiveness of the regulatory environment together with a successful track record of other infrastructure projects closed are the most cited elements that drive the choice in which jurisdiction to invest in infrastructure.

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.

4.1 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

¹³ Some large funds have set up wholly owned, stand alone, infrastructure funds management groups called „captive GPs“, which are subsidiaries and operate autonomously. For example: Borealis Infrastructure, part of Ontario Municipal Employers Retirement System (OMERS). See Clark et al (2011) for more explanation.

biggest barriers to institutional investors moving into infrastructure investments is the lack of clarity and consistency in government commitments to policies over time.

The experience of countries such as Australia and Canada has shown how national infrastructure plans are an important signal to investors – including pension funds – of political commitments to infrastructure over the long term (Inderst and Della Croce 2013).

- **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.

Governments and/or multinational agencies can use “public financing mechanisms” to provide cover for risks which are new to investors or cannot be covered in existing markets. These include devices such as loan guarantees, insurance options, and credit enhancement tools, which improve deal flow and ensure that adequate, investment-grade deals at scale come to the market as potential investments for institutional investors.

It will also be necessary to revive this role for the insurance industry (in particular the monoline insurers) and for other financial sector players.

Lack of Investor Capability (infrastructure investing is different from other asset classes, involving different types of risk)

- 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.
- *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 (see Table 3 below).

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.

4.2 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 such data and to make such comparisons through the “Annual Survey of Large Pension Funds and Public Pension Reserve Funds” which provides data not collected before on assets such as infrastructure and complements national statistical data already collected by the OECD. This survey will soon be expanded and extended to other institutional investors insurers¹⁴.

¹⁴ The survey illustrates the role that large institutional investors can play in providing a source of stable long-term capital. The survey reviewed trends in assets and asset allocation by 86 large pension funds and Public Pension Reserve Funds (PPRFs), which in total managed nearly USD 10 trillion in assets, more than one third of the total worldwide assets held by this class of institutional investors. The survey was presented to G20 Finance Ministers and Central Bank Governors at their October 2013 meeting in Washington. See www.oecd.org/finance/lti

Quantitative Limits on Pension Fund Alternative Investments

Table 3. Investment Limits

	Total	Hedge Funds	Private Equity	Infrastructure	Real Estate	Currency	Commodities	Structured Products	Others
Australia	No limits ¹								
Belgium	No limits								
Canada					25%				
Chile ²									
Colombia			40%						
Costa Rica			10%					5%	
Czech Republic ³		5%	5%	5%		5%	5%	70%	70%
Germany Pensionskassen		5%	15%		25% REITS	30%	5%		
Hong Kong						30% ⁴			10% REITS
Israel	No limits								
Mexico			15%	15%				10%	
Netherlands	No limits								
Norway	7%								
Poland		10%	10%	10%	10%	10%	10%	10%	10%
Portugal	10%								
Romania ⁵			2%				3%		
Slovak Republic (voluntary funds)					30%				
South Africa ⁶		10%	10%		25%				
Swaziland	15%				25%		10%	Look through principle applies	
Switzerland	15%					30%		10%	
Turkey	No limits								15% warrant 20% venture capital
UK	No limits								

Source: OECD – Survey of Investment Regulations of Pension Funds 2011

The barriers to investment for infrastructure assets can be summarized in the following table:

Table 4. Barriers to investment for infrastructure assets

Categories	Barriers
1. The Investment Opportunities	<ul style="list-style-type: none"> •Lack of political commitment over the long term •Regulatory instability •Fragmentation of the market among different level of governments •No clarity on investment opportunities •High bidding costs •Infrastructure investment opportunities in the market are perceived as too risky
2. The Investor Capability	<ul style="list-style-type: none"> •Lack of expertise in the infrastructure sector •Problem of scale of pension funds •Mis-alignment of interests between infrastructure funds and pension funds •Regulatory Barriers •Short Termism of investors
3. The Conditions for Investment	<ul style="list-style-type: none"> •Negative perception of the infrastructure value •Lack of transparency in the Infrastructure sector •Shortage of data on infrastructure projects

Source: OECD Pension Fund Investment in Infrastructure: Policy Actions, Working Paper 2011

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.

As a result of the barriers detailed above and drawbacks of existing vehicles, adjustments and new initiatives are needed to help pool institutional resources and facilitate the flow of institutional capital into infrastructure assets. The types of initiatives that have been developed as solutions are detailed in the next section.

5. The New Initiatives to Pool Institutional Investors Capital –Case Studies

In light of the challenges, it is widely acknowledged that private institutional infrastructure investment is significantly needed but requires a collaborative effort by all parties; governments, investors and managers. Existing models need to be enhanced and developed to ensure an alignment of interests. The barriers to investment highlighted above would indicate there are solutions for private institutional infrastructure investment that can be categorised as both market-led and government-led initiatives.

The market-led initiatives refer to the vehicles set up by private institutions and are being designed to address the conflicts of interest between investors and fund managers over time horizons and fees.

The market-led initiatives are directed at different types of investors in the differentiated infrastructure investor universe. Larger pension funds have the resources to establish fully developed governance structures, supporting the development of internal expertise, and therefore building the capability to invest directly in infrastructure assets. Direct investments in infrastructure require a relatively large equity contribution, which is often outside the capacity of small funds. The scale of larger funds allows them to invest in this sector and still maintain the liquidity needed to meet necessary prudential requirements. Co-investment platforms have been developed for these sufficiently large institutional investors to help facilitate the flow of institutional capital efficiently into infrastructure assets without having to go through financial intermediaries.

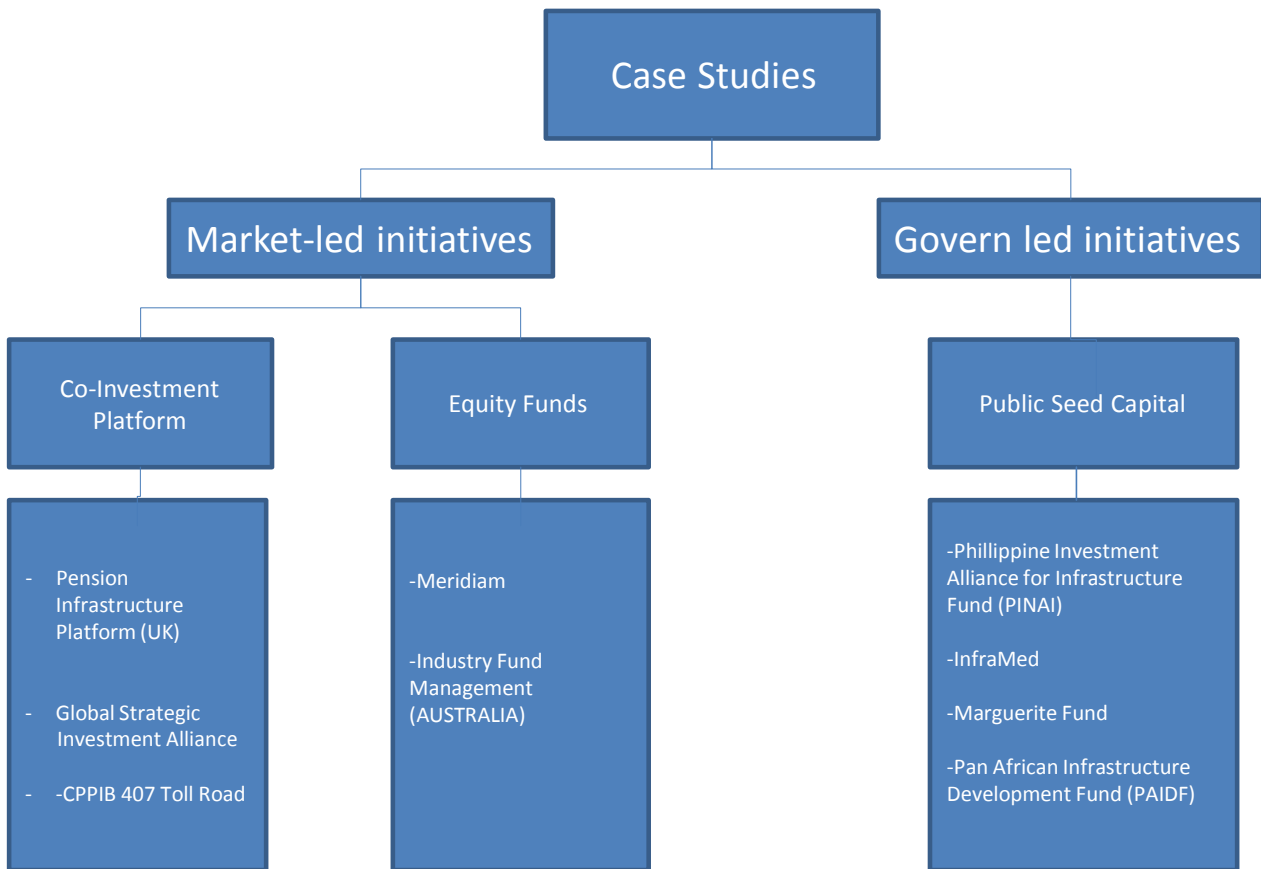
For the smaller funds without the in-house capability to invest directly, pooled investment vehicles are required to access infrastructure investments. The unlisted equity fund model, however, is being remodelled to take into consideration the needs of these investors.

Government-led initiatives refer to the wide range of mechanisms at governments' disposal that can be used to help encourage institutional investors to invest in infrastructure assets. These have included helping to set up an investment platform for investors, providing seed capital for infrastructure funds, enabling regulation for long term investment, and assisting with bank financing for long-term project finance. Because of the sometimes highly political nature of infrastructure investing, it is difficult to remove the influence of government from any initiative for private institutional infrastructure investment, which emphasises the need for collaboration between the various parties to achieve the desired outcomes.

Equity funds formed as partnerships of public and private institutions could become important sources of risk sharing finance as well as providers of organizational capacity and expertise in support of the financing of infrastructure projects. Partnering with government-backed capital may provide assurance for private fund managers and may also help facilitate additional private investors to deploy capital into infrastructure funds. These partnerships are examples of new investment models for public and private sectors to fund infrastructure projects in developed and also developing countries.

The case studies highlighted in the section below provide examples of the new investment structures that have been created in response to the issues noted above. The cases provide examples of mechanisms used to facilitate institutional infrastructure investment in various locations around the world, including co-investment platforms, revised/investor-friendly unlisted funds and government-led equity fund initiatives. The following diagram illustrates where each of the case studies fit within the different categories of instruments.

Figure 8. Categorisation of Case Study Examples



5.1 Pensions Infrastructure Platform (United Kingdom)

Drivers of the Initiative

The Pensions Infrastructure Platform (PIP) was established as a collaborative effort between the National Association of Pension Funds (NAPF) and the Pension Protection Fund (PPF) to explore ways that pension funds could invest in UK infrastructure. The PPF is a statutory fund run by the Board of the Pension Protection Fund, a statutory corporation established under the provisions of the Pensions Act 2004. The purpose of the PPF is to provide compensation to members of eligible defined-benefit schemes in cases of employer insolvency or insufficient assets in the respective pension scheme. The NAPF is an organisation set up to influence the outcome of, and proactively shape UK pension policy comprising of a Board and an Investment Council and Retirement Policy Council.

The NAPF and PPF have worked together since signing an MOU in 2011 to put forward a proposal that allows pension schemes to access the infrastructure investment market on more favourable terms than are currently available through traditional fund managers. Since September 2012, there have been monthly

meetings amongst the members and it has been noted that significant progress for the co-ordination of the group and alignment has been achieved with the regular meetings.¹⁵

The pension funds that contributed to the development costs are from industries that have an interest in the development of physical infrastructure assets *i.e.* from infrastructure or technical industries. Each investor was not prepared to commit the initial £100,000 for the development costs of the project unless at least 7 other funds committed. The main issue that the investors voiced as a concern from their previous infrastructure investments was with the General Partner (“GP”): Limited Partners (“LP”) relationship¹⁶. LPs did not seem to be able to voice their concerns about the misalignment with GPs. It was felt that GPs were not representing LPs and there seemed to be a significant governance gap. The key transaction that provided a lot of impetus for the alignment of interest between investors in the PIP was the Henderson Infrastructure Fund failure, where the acquisition of John Laing construction resulted in considerable losses for the pension fund investors of the fund.

Structure

The PIP top company will be a not-for-profit entity owned by ten pension funds making a commitment of £100,000 to cover development costs for the fund. The fund itself will be structured as an English Limited Partnership model with the founding investors expected to make an initial investment of at least £100 million. Investments will also be taken from other pension plans. A management company¹⁷ (either third party or in-house) will identify, evaluate and bid for potential investments and manage fund assets. An investment committee will advise the management company on bids and to authorise major transactions. An advisory committee comprising of LP representatives will monitor the success of bids and investments.

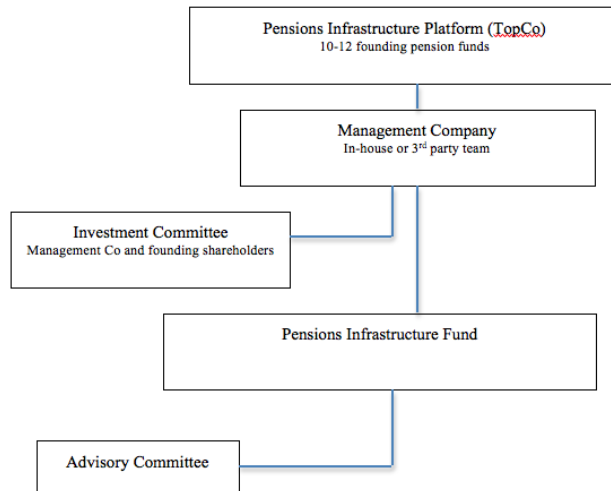
The PIP structure is summarized in the following diagram:

¹⁵ Three major UK pension funds, The [BT](#) and [BAE Systems](#) private sector funds and the London Pension Fund Authority (LPFA) which have more than £65bn (€79bn) in investible assets, have pulled out of the Pensions Infrastructure Platform (PIP), as the initiative moves forward with initial investments. This leaves as the remaining investors in the PIP the public sector Strathclyde and West Midlands pension funds, the former nationalised Railways Pension Scheme, the [British Airways](#) Pension Scheme, the Lloyds TSB fund, the PPF and one other anonymous fund. Source IPE 24 February 2014

¹⁶ On general partner vs Limited partner role see section 3.1

¹⁷ In December 2013, Dalmore Capital Ltd was selected to act as the manager of the equity mandate for the PIP.

Figure 9. PIP Organisational Structure



Source: PIP

The Pension Infrastructure Fund originally with a target size of £2 billion (then reduced to £500 million) will have a target return of RPI +2-5%. It will be a 25 year closed-end fund with the ability to close after 10 years and after 15 years and the ability to go evergreen after 20 years. The fees for the managerial services of the PIP fund are being targeted at 50 basis points, considerably lower than what is charged by traditional third-party managers (Belt and Nimmo 2013).

The fund’s strategy will be to invest in UK focused assets that are inflation-linked in both equity and debt. It would have a preference for smaller PPP renewable projects and PFI schools, over large economic infrastructure. While the fund will target both brownfield and greenfield assets, it is likely to invest in less risky assets initially and then gradually move into more risky investments.

Benefits/Challenges and Government Role

It was noted that knowledge and expertise in setting up the PIP has proved to be a key challenge. The infrastructure investment market is an underdeveloped industry and it is hard to find the necessary skills without encountering conflicts of interest. The procedure for setting up the fund by starting with the investors was new (doing things in reverse) compared with how traditional infrastructure funds have been set up. The large number of people involved with setting up the PIP has also been an issue especially when trying to achieve a balance of power between the administrators, investors and advisors (Belt and Nimmo 2013).

Having a clear pipeline of projects in which to invest is crucial for an infrastructure fund vehicle. This has been overcome with the PIP because the UK government has proposed more than £300 billion in infrastructure investments over the next 30 years, two-thirds of which are planned to be private. Because of the prominence of the PIP within the UK investment community, it is likely that off-market deals will come to the PIP.

5.2 Global Strategic Investment Alliance (GSIA)

Drivers of the Initiative

The GSIA is a global co-investment alliance platform launched in 2012 by the Ontario Municipal Employees Retirement System (OMERS). The GSIA was designed to gather sophisticated like-minded investors (mainly pension funds) to directly invest in infrastructure assets. Through the GSIA, participating alliance members will invest in core infrastructure assets with an enterprise value of more than USD 2 billion in sectors such as airports, railways, ports, power generation & distribution, and gas pipelines mainly in North America and Europe.

The GSIA aims to raise USD 20 billion with OMERS providing USD 5 billion. In April 2012 Mitsubishi Corporation (MC) entered into binding commitments to jointly invest up to USD 2.5 billion in quality infrastructure assets, together with leading Japanese pension funds and financial institutions, namely Pension Fund Association, Japan Bank for International Cooperation, and Mizuho Corporate Bank. In March 2014 OMERS entered into a co-investment agreement with Japan's Government Pension Investment Fund (GPIF), the world's largest pension fund, and the Development Bank of Japan (DBJ). The participation by GPIF and DBJ brings the total capital committed to the GSIA to USD USD11.25 billion.

Structure

All GSIA investments are originated and managed by OMERS, while USD2.5 billion commitments made by four Japanese investors are managed by wholly owned Mitsubishi Corporation subsidiaries Double Bridge Infrastructure Inc. and DBI Management Inc. The operation and management structure of the GSIA is illustrated in the following diagram:

Figure 10. GSIA Management Structure



Source: GSIA

Benefits/Challenges

As noted in section 5.1, the benefit of collaborating not only allows for a better alignment of interests between investors but also enables a critical mass to be achieved so that the GSIA is able to access the products that previously were restricted mainly to large fund managers. The GSIA will likely charge a commitment fee upfront of 50 basis points and a carried interest fee for performance at a later date, with OMERS managing the assets once they are acquired. However, it is noted by OMERS that the fee income is not the main attraction, it is the collaboration and size of investment power that is what drives the model.

5.3 Investment Syndicate – Buying into the 407 Express Toll Route

Drivers of the Initiative

In a partial acquisition of the 407 toll road in Toronto, the Canada Pension Plan Investment Board (CPPIB) collated together a syndicate of institutional investors in a way that could be used as a model of pooling institutional capital together for investing in infrastructure assets.

The CPPIB is a leading global professional investment management organization that invests the assets of the Canada Pension Plan not currently needed to pay benefits. It was established in December 1997 as a Canadian crown corporation responsible for managing the Canada Pension Plan to which approximately 18 million Canadians contribute or receive benefits from. The CPPIB manages over USD 200 billion in assets and has been applying the direct investment model in infrastructure since 2006.

CPPIB's strategy as a long term investor would normally be to hold infrastructure assets long term. In this particular case of the 407 Express Toll Route (407 ETR) in order to gain access to larger and even more attractive opportunities, a "syndication at cost" model with like-minded investors was defined.

Structure

After closing on two separate transactions in late 2010 to acquire 40% of the 407 toll road for more than USD3.5 billion, CPPIB was ready to syndicate up to 30% of this position. A confidential investment memorandum was sent to a select group of like-minded long-term investors, detailing key items about the transaction and the terms for syndication (Dyck and Virani 2013).

Such a syndication requires a large institutional investor to take the lead and invest directly in an infrastructure asset. The lead then creates a vehicle to allow opt-in for additional investors setting a minimum investment level. Each investor then does its own due-diligence and decides whether to invest at the set price.

The syndicate model would need just a handful of investors to reduce the cost and time of decision-making. In the example of the 407 toll road, each investor needed to invest a minimum of USD100 million and had 90 days within the investment closing date to invest. The management structure would be subject to a vote each year so that the syndicate members have the ability to opt out if costs became too high or alternative options with fewer fees became available.

Benefits/Challenges

The model allows larger entities with in-house investment teams the ability to invest in larger projects with lower competition, spreading risk among stakeholders. There are no extra fees for the lead investor and each subsequent investor pays only the lead investor's pro-rata costs (and the investment) (Belt and Nimmo 2013).

This type of model also allows smaller investors without in-house infrastructure investment teams to invest directly with only a „pro-rata share of costs of the lead investor, much less than the fees from traditional fund structures“. While the small investors do need to do their own due-diligence, the lead investor would have done the majority of the work.

Ultimately, the syndication model would help to overcome some of the barriers to private institutional infrastructure investment because of a greater alignment in terms of the investment horizon, investment philosophy, cost-of-capital, risk profile and governance views.

5.4 Meridiam (Europe, North America)

Drivers of the Initiative

Meridiam funds were launched in 2006 through an investment of €190 million by global construction firm, AECOM and the Credit Agricole group (via Predica and Credit Agricole Private Equity). Meridiam has now grown to have three PPP equity-only funds, each with a maturity of 25 years investing predominantly in greenfield investments in transportation, social and environmental infrastructure in OECD countries in Europe and North America. Meridiam also intends to develop a similar long term infrastructure fund dedicated to Africa.

The three current Meridiam funds are detailed below:

- Meridiam Infrastructure SICAR (S.C.A.) - €750 million (portfolio of 11 assets)
- Meridiam Infrastructure Europe II SICAR (S.C.A.) - €935 million (11 assets closed) including €30 million of co-investments.
- Meridiam Infrastructure North America II - \$1.1 billion (6 assets closed) including €360 million of co-investments.

The investor base of Meridiam’s funds includes pension funds (60%), insurance companies (30%), and public development institutions (EIB, EBRD, CDC, DBJ) (10%).

Structure

Meridiam is involved in projects from the design stage onwards and selects leading industrial partners with the specialist skills required. This has been crucial for helping to attract investment from institutional investors like pension funds and insurance companies who traditionally have been averse to taking on greenfield construction risk. Investors also gain assurance in the Meridiam funds, despite the fund taking on construction risk by investing alongside reputable development institutions. The firm’s long experience and strong track record of dealing with reliable contractors to carry out development tasks has been central to help provide confidence to institutional investors to invest in the funds. Because the risk is idiosyncratic, there is an emphasis placed on diversification and having a portfolio of assets that are able to provide a balance between those that perform both well and those that fail.

Meridiam’s corporate governance guarantees total independence of the investment decision-making process. Its investment committee has responsibility for investment decisions and the fund’s operations. This committee consists of four Meridiam representatives and two qualified independent members.

The funds invest in projects with an amount no less than €/\$10 million and co-investment solutions enable Meridiam to provide up to €/\$1 billion of equity to a single transaction. The average net return targeted by the fund is 11-12% over 25 years.

Benefits/Challenges

The Meridiam funds provide a good example of unlisted equity fund opportunities for institutional investors that have a time horizon and fee structure more aligned with the core economic infrastructure definition that has been sold to institutional investors. The funds also provide a good example of how institutional investment can be attracted into vehicles that take on development risk, an area that institutional investors have been reluctant to be exposed to.

It was also noted that by having development institutions as investors, this also helps Meridiam gain access to deal flow and prospective investment opportunities without having to scour for deals and go through a costly auction process. As more PPP opportunities become available in jurisdictions around the world, the Meridiam example could be a model for enabling smaller institutional investors that are unable to invest directly to gain access to infrastructure development projects.

5.5 Industry Funds Management (Australia)

Drivers of the Initiative

In 1990, the Development Australia Fund was created by Australian superannuation funds to invest in growing Australian private and public companies and infrastructure. In 1995, Industry Fund Services Pty Ltd (“IFS”) assumed management of this fund with Development Australia Fund Management Limited as the trustee.

As noted, individual superannuation investors may not have the skills necessary to make direct infrastructure investment deals, and may also not have the risk appetite to invest. As IFM executive director Brian Clarke proclaimed at a recent roundtable in Washington DC: “By pooling their resources through IFM, the supers can leverage their cumulative risk appetite and invest in a variety of deals, diversifying their infrastructure portfolio and potentially gaining a better, more stable longer term return than would be possible if each super were to invest in deals by itself” (Belt and Nimmo 2013).

Structure

As of December 2013, IFM had AUD50 billion in infrastructure assets split across global and Australian funds in open-ended structures. The IFM fund focuses on core, mature assets in developed markets, primarily brownfield projects.

Industry Funds Management (IFM) is an investment manager wholly owned by 30 major Australian “not for profit” superannuation funds (i.e. member owned pension funds) who are also major clients, along with other long-term investors such as government authorities, universities and endowments. IFM has an investment board independent of the superannuation funds with an in-house team that makes the decisions for all investments.

Benefits/Challenges

As outlined in Section 5.2, there are a number of benefits of open ended funds including having an investment period that is ongoing, providing immediate exposure to income generating assets (rather than a blind pool fund¹⁸), greater ability to grow and diversify the fund over time and no rush to deploy capital. Investors also have control over reinvestment and distributions decisions (IFM 2013).

¹⁸ A Blind Pool fund is one in which capital is raised from investors without knowing the exact assets that will be invested into.

The IFM model essentially owned by the member superannuation funds is able to achieve strong alignment. IFM's fees are investor driven, not manager driven, and are therefore significantly lower than those charged by private equity funds, meaning assets with appropriate risk profiles are selected and liability matching is achieved.

5.6 Philippine Investment Alliance for Infrastructure Fund (Philippines)

Drivers of the Initiative

The Philippine Investment Alliance for Infrastructure (PINAI) fund is an unlisted fund dedicated to investing in core infrastructure assets in the Philippines. The fund concept arose from efforts by the Government of the Philippines to find ways to catalyze private sector investment in infrastructure.

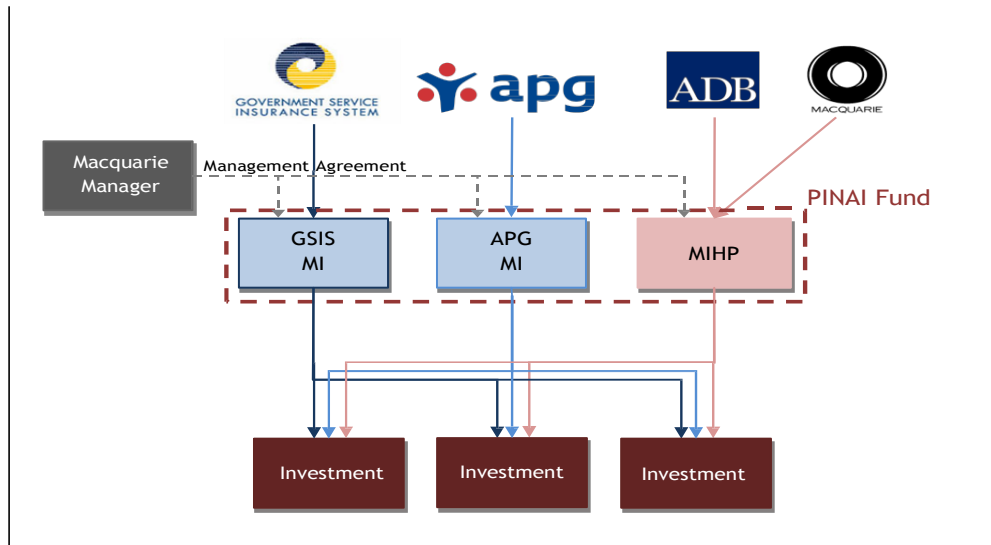
Historically, infrastructure investors have predominantly focused on the „safer“ less risky developed economies of Europe, North America and Australia. The PINAI fund provides an example of how a fund can be set up with government involvement to help attract institutional investment in the much needed investment areas of the emerging economies.

The fund was formed in a reverse order compared with most other infrastructure funds, with the cornerstone investors firstly coming together before the selection was made for an appropriate manager for the fund. Three cornerstone investors make up the fund, the Government Service Insurance System fund (making up half of the fund) the Asian Development Bank and the Dutch pension fund asset manager, APG. After a thorough manager selection process, Macquarie Infrastructure and Real Assets (MIRA) was selected to manage the fund and will also provide equity into the fund. The total size of the fund is \$625 million.

Structure

The fund is a closed-end fund with a time horizon of 10 years. It is a combination of a Singapore-domiciled pooling vehicle (MIHP), plus two direct investors (GSIS, APG), operating together as a single fund pursuant to a co-investment agreement. PINAI is managed by MIRA, which is responsible for all major investment, divestment and management decisions within the fund's overall mandate. An advisory committee (made up of the cornerstone investors) makes decisions with respect to expanding the fund's mandate and any related party transactions.

Figure 11. PINAI Structure



Both the cornerstone investors and the manager were attracted to the idea of setting up the PINAI fund for a number of reasons:

- The Philippine economy has been growing strongly in recent years, the move to investment grade credit rating and continued strong GDP growth were expected to raise the Philippines to prominence in the near term;
- The Philippines is home to one of the youngest and fastest growing populations in Asia. This will generate a boom in working age population over the near term, which in turn drives growth in demand for infrastructure
- Investment in infrastructure in the Philippines since the 1990s has been significantly below the ASEAN average, producing a large “infrastructure gap”.
- The Aquino administration aims to “invest massively in infrastructure” as one of the five key strategies outlined in its Philippine Development Plan 2011 – 2016. A core component of this is to attract private investment in infrastructure;
- Macquarie as an organisation is familiar with the Philippines, with well-established securities and advisory businesses there, as well as support services. The fund is able to benefit from Macquarie’s extensive experience in infrastructure investing, and a strong history and track record of pioneering infrastructure investment in new markets;
- The fund is also able to benefit from the credibility and expertise provided by leading institutional investors such as the GSIS, APG and ADB.

In recognition of the relatively short time horizon of ten years, it is argued that there needs to be a balance between the life of the fund and the long-term nature of the assets. Investors generally expect an opportunity to realize their investment after a defined period, with 10 years considered a suitable period to implement management and business improvements.

Benefits/Challenges and Government role

It was noted that the unique aspect of the PINAI fund is the close relationship between the manager and its investors because of the small number of parties. The investors in PINAI have a good understanding of market conditions and investment climate, which makes it easier to communicate with each other. While the investors have no formal role in management, mutual sharing of market information and insights greatly assists the sourcing, evaluation, and management of PINAI's investments.

In general, emerging market economies like the Philippines face a large gap between investment needs and investment supply. The current administration in the Philippines, headed by President Aquino has given emphasis to infrastructure investment, with a focus on the use of PPPs in the country. The administration is creating a market through its pipeline of PPP projects, allowing the PINAI fund to focus uniquely on the Philippines. The current administration has prioritized infrastructure as a key driver for the country's sustainable growth, and is implementing regulation providing clear rules for private investment, which is necessary for providing additional private investment in infrastructure (and especially foreign direct investment).

5.7 Pan African Infrastructure Development Fund (Africa)

Drivers of the Initiative

The Pan African Infrastructure Development Fund (PAIDF) was launched in 2007 at the African Union Heads of State Summit in Ghana. The establishment of the PAIDF was partly informed by the recognition that mobilising private capital and creating public-private partnerships is crucial and complementary in responding to Africa's infrastructure development backlog.

The cornerstone investors were all African based and comprise a mixture of pension funds and financial institutions including the African Development Bank¹⁹. The initial commitments of investors made the size of the fund \$625 million.

Structure

PAIDF's objective is to invest directly in infrastructure projects in all regions of Africa as well as in securities of companies that own, control, operate or manage infrastructure and infrastructure-related assets. Within the spectrum of infrastructure development, PAIDF's targets include energy and power, telecommunications, transport, and water and sanitation.

The fund term is 15 years with each investment held for approximately 7-8 years. The target return of the fund was a minimum of 15% IRR. Again while the exact fee amounts were not disclosed, the management and performance fee of the PAIDF fund would be similar to that of a private equity fund looking to achieve a similarly high return. It was noted that the PAIDF fund manager was looking to add real value to the assets being invested. This, along with the fact that the costs of travelling around the African continent were perceived to be higher, has contributed to the fees of the PAIDF fund being more aligned with private equity funds.

¹⁹ Other investors include Government Employees Pension Fund, Barclays/ABSA Bank, Development Bank of Southern Africa, Old Mutual, Standard Bank, Liberty Life, Metropolitan Asset Managers, Social Security and National Insurance Trust.

Benefits/Challenges and Government Role

An all-African investor base has helped with sourcing deals in which the fund can invest, particularly with investors such as the African Development Bank and the Development Bank of Southern Africa. In many ways the early stages of the fund with an all-African investor base, provided a proof of concept and subsequently the fund has had a number of deals come to them instead of the fund having to chase after deals. The PAIDF does not use the auction process, which is thought to be costly and time consuming.

Although there has been some assistance from governments in helping to set up the PAIDF fund, there is a certain amount of sentiment that governments could have facilitated the fund's establishment better. This could have been achieved by providing mechanisms to catalyse foreign investment, assist with more favourable regulatory conditions for investments and collaborate on all aspects of investment more transparently.

5.8 Marguerite Fund (2020 European Fund for Energy, Climate Change and Infrastructure)

Drivers of the Initiative

The Marguerite Fund launched in 2009 was established with the backing of six major European financial institutions to make long term capital-intensive infrastructure investments in Europe, as a key measure of the European Economic Recovery Plan in the aftermath of the financial crisis²⁰.

Each of the six Core Sponsors has committed €100 million to the Fund. Core members include Caisse des dépôts et consignations (CDC), France; Cassa Depositi e Prestiti (CDP), Italy; the European Investment Bank (EIB); Instituto de Crédito Oficial, Spain; KfW, Germany; PKO Bank Polski SA, Poland²¹. In addition, three further investors (including the European Commission) have committed an incremental €110 million to the Fund, bringing current commitments to €710 million.

A similar initiative was launched in 2010. The InfraMed Infrastructure Fund was set up by CDC and CDP together with EIB, Morocco's CDG and Egypt's EFG-Hermes Holding SAE. The Fund is dedicated to long-term investments in sustainable urban transportation and energy infrastructure in the countries along the southern and eastern shores of the Mediterranean Sea.

Structure

Marguerite is an independent fund investing in greenfield infrastructure: new projects and facilities, with typical development risks largely mitigated (minimum of 65% of the Fund) and brownfield infrastructure: replacement, modernisation and capacity enhancement of existing assets (maximum of 35% of the Fund). The Fund has a 20 years life.

The Fund is targeting approximately equal capital deployment across (i) transport, (ii) energy and (iii) mature renewable sectors, selecting opportunities across Europe. The fund offers attractive terms, including a cost-based and capped management fee.

²⁰ See <http://www.margueritefund.eu/>

²¹ With the exception of PKO Bank, Core Members are all part of the Club of Long Term Investors founded in 2009 with the aim to bring together worldwide institutions and foster the right conditions for long term investments . Today the Club is composed of 19 major financial institutions and institutional investors from all the world. <http://www.ltic.org/>

The Marguerite Fund is advised by management owned Marguerite Adviser. The Marguerite Fund's corporate governance involves a Supervisory and Management Board with senior representatives of the sponsors and investors, and in the latter case of qualified independent members. Its independent investment committee consists of two members of the Marguerite Adviser management team and three independent members.

The Marguerite Fund invests in projects with an amount no less than €10 million and no more than €150 million. The average return targeted by the fund is 10-14% net for investors over the Fund life.

Benefits/Challenges

Further to the anchor funds represented by major public institutions, the Marguerite fund aims to attract additional capital from pension funds and insurance companies. An example where this was achieved successfully is the EUR1.3 billion Butendiek offshore wind farm deal where two Danish pension funds invest alongside Marguerite. This was the largest greenfield renewable deal closed in 2013 in Europe. Other innovative investments were realized in 2013 with the first waste to energy PPP in Poznan, Poland and the first non-recourse project finance loan in Romania. This fund could be a model in the future for other similar public and private funds: both at regional and national level for different infrastructure sectors. The Fund has successfully overcome some of the challenges of the approach taken, which combines commercial drivers and market principles and support for public policy objectives.

6. Case Study Synthesis

Infrastructure investment is a complex investment area and requires adequate resources and expertise to be in place. Each individual institutional investor might not have the skills necessary to make direct infrastructure investment deals, and might also not have the risk appetite to invest. Another reason for limited allocations by institutional investors has been an inability to achieve the significant scale required for making direct investments.

A major issue that investors voiced as a concern from their previous infrastructure investments was with the asset manager - asset owner relationship (the GP: LP relationship). It was felt that asset managers (*i.e.* infrastructure funds), were not representing the long-term interests of asset owners (*i.e.* pension funds) and there seemed to be a significant governance gap. For example in terms of investment horizon and fees offered, asset owners did not seem to be able to voice their concerns about the misalignment with asset managers.

This governance gap has led to new initiatives with funds being set up in a reverse order, starting with the investors compared with how traditional infrastructure funds have been set up. This is to ensure a better alignment of interests. Some of these initiatives were market and investor-driven as in the case of the Pensions Infrastructure Platform (PIP), which was established as a collaborative effort between the UK National Association of Pension Funds (NAPF) and the Pension Protection Fund (PPF) to explore ways that pension funds could invest in UK infrastructure. Other initiatives were government-driven with cornerstone investors coming together first before the selection was made of an appropriate manager for the fund, as was the case for the Philippine Investment Alliance for Infrastructure (PINAI)

Emerging market economies face a large gap between investment needs and investment supply. Establishment of the Pan African Infrastructure Development Fund (PAIDF) fund and the Philippine Investment Alliance for Infrastructure (PINAI) fund provide examples of how the pooling of institutional capital can be achieved to invest in the emerging economies.

All of the case studies presented in this section provide useful insights and lessons for how the new opportunities for institutional investors to invest in infrastructure assets might be shaped.

6.1 Unlisted Equity Funds

As indicated above, institutional investors have raised concerns over the terms and conditions of infrastructure funds being offered in the early stages of the market. The conflicts of interest have arisen due to the perceived short-term opportunistic approach of fund managers compared with the long-term patient outlook of institutional investors such as pension funds, insurers and sovereign wealth funds.

From the fund manager's perspective, there seems to be a challenge in satisfying various conflicting objectives such as time horizon, liquidity, rate of return, while also generating income through fees. Previous funds have typically been just 10-14 years with a limited investment period of 4 or 5 years. The shorter-term focus is more suited to turn-around or development deals and the mandatory exit is not consistent with the long-term hold philosophy of core infrastructure. Contributions, valuations and liquidity are all controlled at the manager's discretion and distributions are only made towards the end of the fund life (Preqin 2013).

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 (rather than a blind pool fund). 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 exits and redemption if appropriate. Investors also have control over reinvestment and distributions decisions (IFM 2013). 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 pension fund participants.

The Meridiam funds, closed-end vehicles with a 25 year horizon, provide a good example of unlisted equity fund opportunities for institutional investors that have a time horizon and fee structure more aligned with the core economic infrastructure definition that has been sold to institutional investors. The funds also provide a good example of how institutional investment can be attracted into vehicles that take on development risk, an area of exposure that institutional investors have been reluctant to take on.

The Industry Funds Management (IFM) open-end vehicle model also seems to be able to achieve strong alignment of interests. IFM's fees are investor driven, not manager driven, and are therefore significantly lower than those charged by private equity funds, meaning assets with appropriate risk profiles are selected and liability matching is achieved.

Infrastructure Fund Fees

Management fees will remain a contentious issue for infrastructure funds moving forward. There is now greater appreciation of the diversity of risk/return profiles of infrastructure assets and this should be reflected in the fees charged to investors. It is understandable that a fund investing into greenfield assets in the emerging markets carrying greater risk and requiring appropriate management resources will charge a higher fee compared to a fund investing into brownfield assets in developed countries. There are various developments in fee structure that have taken place as a result of the market adjusting for differing opinions. A summary of the types of management fee is given in the following table:

Table 5. Types of management fee

Type	Description
Fixed fee	Fixed percent of invested/committed capital. Fixed fees are relatively simple and straightforward to understand but may not accurately reflect the real cost of management over the life of the fund.
Net Asset Value (NAV)-based fee	Fixed percent of Net Asset Value. NAV fees may provide discrepancies when deducing value estimates.
Workload-related fee	'x' percent of committed capital during the investment period, 'y' percent of invested capital thereafter. Work-related fees attempt to align the management fee on cost recovery reflecting the stage of the fund and level of management resource required.
Yield-related fee	Management fee adjusted according to set formula based on performance metric(s). Yield-related fees are adjusted according to certain performance metrics and can provide strong alignment between GP and LPs but can be difficult to agree.
Payment in Kind (PIK) structure	Manager receives proportion of management fee as in-kind investment in fund/portfolio assets. May eliminate the need for a separate incentive fee component and provides alignment.

Source: Authors

It is widely perceived that management fees should just cover the cost of running the fund on a day-to-day basis as opposed to providing a source of profit for the manager. Given the large size of funds, a level of 2 percent management fee, common for private equity funds is considered too high, particularly for brownfield core economic infrastructure assets in OECD countries (Watson Wyatt 2009).

In terms of performance fees, these are usually based on a hurdle rate and carried interest. Similarly, the hurdle rate will depend on the strategy employed and should be different for brownfield PPP/PFI assets in developed countries compared with development projects in emerging economies. It is noted that managers should only earn a performance fee if it is adding value (or generating alpha) (Watson Wyatt 2009). One of the ongoing difficulties in determining an appropriate fee structure for infrastructure funds is the holding period for investments. Unlike private equity, where the typical holding period is 2 or 3 years, infrastructure investments may be held for 10 years or more, with many investors' preferences moving towards even longer holding periods. Measurement of the value added by a manager where there are long periods without a market event (i.e. divestment) is particularly challenging.

The debate around infrastructure fund fees is likely to continue. The above guidelines however provide an overview of how investors perceive the situation and where the market might be moving. In summary, because of the great variation in types of assets and definition of infrastructure investments, different investors will have different objectives with different risk appetites for infrastructure. Investors will approach infrastructure in different ways and therefore will have different preferences of fund terms and conditions. The fees charged by fund managers should be agreed in advance so that benchmarking can be undertaken and the actual fees paid should be communicated to current and prospective investors on a regular basis.

It would appear that over the last few years, the industry has consolidated to some extent and adjusted to address investor concerns. This has been evident by fund managers offering tiered options for fees based on the amount of capital contributed and when, separate managed accounts for investors in funds as well as co-investment options for large investors in funds. Investor understanding of the asset class has also developed making them more sophisticated in manager assessment and selection.

6.2 Co-investment platforms

Co-investment platforms have started to emerge in response to the dissatisfaction that many institutional investors shared with the infrastructure fund models being offered by financial intermediaries. In order to bypass the large fees associated with investing through unlisted equity funds, a number of large pension funds and sovereign wealth funds have looked at pooling their financial and internal resources to invest jointly in infrastructure projects. There have also been initiatives of partnering with other funds with more expertise (i.e. Canadian and Australian pension funds) on a deal-by-deal basis.

Large investors have opted to collaborate amongst themselves to benefit from a number of advantages: better alignment of interest with other pension funds, like-minded investment horizon, lower fees, better control of the characteristics of the investment, larger commitments, local knowledge, and a spreading of risk.

Furthermore, Bachher and Monk (2013) state: “the „network effects“ from working with like-minded peers will, it is hoped, minimize the funds“ reliance on the for-profit financial services and asset management sector for deals and intelligence”. The same authors see six benefits of collaborating in co-investment platforms: higher returns, cost savings, deal flow, diversification, governance rights, and reduced headline risk. However, it should be noted that pooled vehicles also face a number of challenges. Pension plans often have different strategies based on differences in strategic orientations, diversification targets, and exposure limits. Other potential challenges could result from issues such as governance, fees and compensation of investment professionals. In order to overcome these challenges, government support may be required to either help achieve co-ordination between the parties or provide access to attractive investment opportunities.

While all of the co-investment platforms looked at in this paper were at an early stage of their development, and their success is yet to be determined, there are a number of useful insights that can be drawn.

The PIP in the UK received much media attention at the outset, as a novel way of attracting more pension funds to invest into infrastructure. While the benefits of the PIP structure seem clear, the implementation of the model has proved challenging. This has primarily revolved around the selection of an appropriate manager/administrator to drive the initiative forward without acting in a conflicted way and ensuring the interests of the pension fund members are transparently represented. It has been over two years since the initial idea for the PIP was formulated and the stumbling blocks encountered were highlighted when three of the initial founding member funds pulled out of the initiative. With a new manager appointed there is hope that the good developments achieved thus far will be translated into the efficient deployment of pension fund capital in UK infrastructure assets.

The syndication model lead by CPPIB through its investment in the 407 toll road provides another example of an alternative, lower-cost model for pension funds looking to access infrastructure. The model provides benefits in that large investors are able to access investments with lower competition and lower costs. For the lead investor, scale is achieved with investment partners that have similarly aligned interests. However, despite the great attraction of the syndication model, it has been observed that the number of large, lead investors like CPPIB are limited and the deal flow for these opportunities may be scarce, making the repeatability of deals and their anticipatable nature difficult.

The Global Strategic Investment Alliance, initiated by OMERS, offers a co-investment infrastructure vehicle to other large institutional investors with lower fees and a longer hold attracting other like-minded investors. The vehicle focuses on very large projects targeting funds that can make very large capital

commitments. A drawback of the GSIA is the restriction to large investors with not much scope for smaller investor involvement.

With the theoretical benefits of such programs evident, other similar co-investment platform initiatives for infrastructure have started to emerge including the Fiduciary Infrastructure Initiative, based in Washington DC and the West Coast Infrastructure Exchange, set up by the Californian, Washington, Oregon and British Columbian state governments.

6.3 Government-Led Initiatives

As indicated above, because of the politically sensitive nature of infrastructure assets, there are a number of initiatives instigated by governments that can facilitate institutional investment in this area. The government-led initiatives illustrated in this paper including the PINAI, Marguerite and PAIDF funds have entailed governments or development institutions directly contributing seed funds.

The Marguerite Fund, established by the EIB and a number of partners, is designed to support equity investments in new (greenfield) infrastructure projects in the areas of transport (TEN-T), energy (TEN-E) and renewables in European member states. The Marguerite Fund is an example of how a pooled investment vehicle can be set up for large institutional investors to invest in complex, idiosyncratic assets. The support of the European Investment Bank and European Commission has been crucial for reassuring institutional investor capital deployment into the fund. The fund has also had its challenges with the process taking in excess of 14 months to be set up. This was due mainly to negotiations over the terms and conditions of the manager of the fund. Investors have indicated that clear governance and transparency over fees and other terms was crucial to their involvement with the fund.

Both the PINAI and PAIDF funds provide examples of how public seed capital can be used to attract institutional infrastructure investment into the emerging economies. While the fees for both of these funds may be akin to private equity fees, the greater risk associated with investing into emerging economies has warranted the extra cost associated with these vehicles. Government assistance again provides assurance to investors for investing in these slightly more risky assets and also helps provide access to deal flow in an „off-market“ way. The PAIDF however believes that the government could have provided their fund better regulatory support for catalysing foreign investment into infrastructure assets in Africa.

Public sector infrastructure and development banks have been instrumental in providing financing support for infrastructure investments in the form of equity or loan capital. Development banks are national or regional financial institutions designed to provide medium and long-term capital for investment accompanied by technical assistance usually in developing countries. Development banks have provided seed capital for unlisted infrastructure funds to help facilitate investment into emerging markets. Some examples of these banks include the African Development Bank, Asian Development Bank and Inter-American Bank. While not active at the moment, the National Infrastructure Bank in the United States was first introduced as an idea in 2007 in response to the US’s deteriorating infrastructure. At the state level in the US, infrastructure banks are in operation, providing a range of services including direct subsidies, direct loan guarantees, long-term tax-credit general purpose bonds, and long term tax-credit infrastructure specific bonds.

Other initiatives to increase the supply of investable infrastructure projects by providing credit enhancement or tax subsidy programs include the European Commission’s 2020 project bond initiative, Build America Bonds, and the Transportation Infrastructure Finance and Innovation Act (TIFIA) program.

The Green Investment Bank (GIB) was created by the UK Government to act as a catalyst to accelerate private sector investment in green infrastructure. The Bank has funding of over £3.8 billion from

the government to provide capital, additional to private sector finance and acts as a co-investor. Eighty percent of the investments are targeted towards the priority sectors of offshore wind, waste recycling, waste-to-energy, and non-domestic energy efficiency. The bank is set up with a conventional corporate governance model, consisting of an executive committee headed by a Chief Executive reporting to a Board of Directors comprising eight members with various sub-committees that are responsible to the sole government shareholder.

Government regulation can also help facilitate the flow of private and institutional capital into infrastructure assets. One example is the European Commission's recent proposal on European Long-Term Investment Funds (ELTIF). This proposal is currently being discussed in the European Council and the European Parliament. Once adopted, the aim is that the new ELTIF framework will have a positive impact in collecting capital for investment in long-term assets in the European Union. To that end, ELTIF aims to create a harmonised set of product rules for funds that specialise in investing in long-term assets. The ELTIF fundraising passport should facilitate raising capital across the European Union and channel it towards a diversified portfolio of long-term assets. ELTIF aims to overcome regulatory obstacles that currently prevail in the Union, as the market for long-term assets is currently highly fragmented with Member States subjecting funds to varying and different rules. This is a barrier for fund managers, who have to deal with a range of legal issues depending on the Member State in which they wish to raise capital. The ELTIF regulation introduces a common definition of certain long-term assets, which are eligible for investments by ELTIFs (European Commission, June 2013).

It is important to stress the role of government goes much further than providing assistance in setting up infrastructure funds. To guarantee the success of these initiatives governments need to provide mechanisms to catalyse foreign investment, assist with more favourable regulatory conditions for investments and collaborate on all aspects of investment more transparently.

6.4 Benefits/Challenges of the Initiatives

A summary of the key benefits and challenges of the case study examples presented in this paper are outlined below:

6.4.1 Benefits

- Diversification/ Long-term returns and benefits

By pooling their resources, institutional investors can leverage their cumulative risk appetite and invest in a variety of deals, diversifying their infrastructure portfolio and potentially gaining a better, more stable longer-term return than would be possible if investors were to invest in deals by themselves.

- Benefits in terms of alignment of interest of equity funds

For smaller institutional investors that are unable to invest directly, equity funds represent the opportunity to get access to infrastructure projects. According to investors two models that seem to offer good alignment of interest are the Meridiam funds, closed-end vehicles with a 25 year horizon, and the The Industry Funds Management (IFM) model, an open-end vehicle owned by 30 major Australian “not for profit” superannuation funds.

- Critical Mass

The benefit of collaborating not only allows for a better alignment of interests between investors but also enables a critical mass to be achieved so that institutional investors are able to access the products that

were restricted mainly to large fund managers. Examples include the syndicate of institutional investors for the 407 toll road in Toronto and the Global Strategic Investment Alliance (GSIA) a world-wide co-investment alliance platform launched in 2012.

- Catalytic role of the Fund

New funds can have a catalytic role in infrastructure markets. Because of the prominence of the PIP within the UK investment community, it is likely that the fund will have access to off-market deals. In many ways the early stages of the PAIDF fund with an all-African investor base, served as a proof-of-concept and subsequently the fund has had a number of deals come to them instead of the fund having to chase after deals. This will avoid the use of the auction process, which can be costly and time consuming.

- Development Institutions involvement

It was noted that by having development institutions as investors, provides reassurance to other institutional investors and also helps to gain access to prospective investment opportunities without having to scour for deals and go through a costly auction process. For example, PAIDF's cornerstone investors include financial institutions such as the Development Bank of Southern Africa and the African Development Bank; the EIB has invested in Meridiam and ADB has invested in PINAI.

6.4.2 Challenges

- Complexities of setting up the vehicle

The infrastructure investment market is underdeveloped and it is difficult to find the necessary skills without encountering conflicts of interest. It was noted that knowledge and expertise in setting up the PIP has proved to be a key challenge.

- Collaboration among stakeholders

Efficiency of the investment process is paramount to ensure the success of the collaboration effort. The large number of people involved with setting up the PIP has been an issue, especially when trying to achieve a balance of power between the administrators, investors and advisors. In contrast, the unique aspect of the PINAI and Marguerite funds are the close relationship between the manager and their investors because of the small number of parties. The investors in PINAI and Marguerite have a good understanding of market conditions and the investment climate, which makes it easier to communicate with each other. While the investors have no formal role in management, the close relationship helps information to be kept up to date mutually.

- Public/Private Sector collaboration

Major challenges in the management of private/public funds are represented by the approach taken to embrace market principles while still supporting public policy objectives. Government bodies have very different social objectives from the return objectives of fiduciary investors. An appropriate, transparent governance structure and decision-making process needs to be put into place.

7. Conclusions

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. Historically, infrastructure investors have predominantly focused on what they perceived as „safer“ less risky developed economies of Europe, North America and Australia. Diversification benefits and higher return expectations are increasingly driving investors to emerging market infrastructure.

At the same time, governments have started to recognize that they need to reconsider their approach to financing to secure new sources of capital to support infrastructure development. With more governments privatising infrastructure assets, a globalisation of the infrastructure fund market has occurred. Developed and developing countries are in effect competing to attract institutional investors to infrastructure.

Despite the theoretical ideal match between a large source of capital and an asset class in need of investment, the overall level of investment in infrastructure by institutional investors has been modest and insufficient to overcome the financing gap.

A number of initiatives have been developed to pool the financial and internal resources of large institutional investors to invest jointly in infrastructure projects and assets. Some of these initiatives were market and investor-driven, while others were government-driven. This paper has examined some of the new initiatives that have been developed as a result of the limitations observed in the existing institutional infrastructure investment market.

Main drivers of these initiatives to pool institutional investors“ capital have been the recognition that each individual institutional investor might not have the resources and expertise necessary to make direct infrastructure investments, and might also not have the scale and risk appetite to invest. Many investors also voiced concerns with the asset manager - asset owner relationship and the desire to partner with other like-minded investors. It was felt that asset managers (*i.e.* infrastructure funds), were not representing the long-term interests of asset owners (*i.e.* pension funds) and there seemed to be a significant governance gap. Finally in emerging market economies additional solutions are needed to face the large gap between investment needs and investment supply.

Structure of New Models

Existing models need to be enhanced and new models for infrastructure developed to overcome some of the barriers to private institutional infrastructure investment and ensure a greater alignment in terms of the investment horizon, investment philosophy, cost of capital, risk profile and governance views. Effectiveness of new models will need to be tested in the years to come.

This paper has focused on selected models in the unlisted equity fund market. Based on analysis of the structure of the new models taken into consideration, it was observed that because of the wide variety of infrastructure assets that are on offer and the variable risk/return characteristics of the investments, there is a direct effect on the fees charged and time horizon employed by fund managers. Ultimately there is not one solution but a wide range of solutions that should be allowed to emerge as demand grows and markets evolve.

For investors in core economic brownfield assets situated in established infrastructure investing jurisdictions such as Western Europe, Australia or North America, a management fee of 2% would be considered too high and an investment holding period of 4-5 years would be too short. Unlisted funds with a focus on these assets and jurisdictions are considered as close to the core economic infrastructure

investment definition, relating to stable, low risk, long-term, inflation protected assets and should, therefore, also have the appropriate fund terms and conditions (longer time horizon and lower fees). Funds investing in greenfield projects in emerging economies where risks are greater and the requirements for expertise are greater would be expected to charge higher fees up to the level perhaps of private equity funds.

Just as a spectrum of risk and return characteristics exists for the different infrastructure investments, a similar spectrum exists for the level of fees and terms and conditions of unlisted funds. Investors in search of stable, predictable, low-risk returns from their infrastructure investments must ensure that the underlying assets in which they are invested reflect the specific definition that they have associated with the asset class.

Benefits/Challenges of new initiatives

Models based on collaboration and pooling of public and private investors could offer a series of important benefits. By pooling their resources, institutional investors can leverage their cumulative risk appetite and invest in a variety of deals, diversifying their infrastructure portfolio and potentially gaining a better, more stable longer-term return than would be possible if each investor were to invest in deals by itself. Also by having development institutions as investors and taking a catalytic role in the infrastructure market, pooled vehicles benefit from gaining access to deal flow and prospective investment opportunities without having to go through what can be a costly auction process. The benefit of collaborating not only allows for a better alignment of interests between long-term investors but also enables a critical mass to be achieved so that institutional investors are able to access the products that were previously restricted mainly to large fund managers.

At the same time, the implementation of these initiatives presents major challenges. Collaboration among stakeholders could lead to an inefficient investment process: owing to the potentially large number of people involved, it may be difficult to achieve a balance of power between the administrators, investors and advisors. There are also complexities related to setting up the vehicle, as the infrastructure investment market is underdeveloped and it is difficult to find the necessary skills without encountering conflicts of interest. Major challenges in the collaboration and management of private/public funds are represented by the approach taken to embrace market principles while still supporting public policy objectives.

Government Role

Because of the highly political nature of infrastructure investing, governments play a pivotal role in helping facilitate the flow of institutional capital into infrastructure assets. The willingness of institutional investors and the private sector more generally to finance major investment projects in any given country is heavily influenced by the perceptions of the country's investment climate and the broad suite of policy settings and institutions that underpin its economy and political processes. Through structural reforms governments need to create a more favourable investment climate, which helps to build private sector confidence to invest and ensure that global savings are channelled into productive investments.

Recent initiatives have seen governments or development institutions providing assistance in setting up infrastructure funds and contributing directly through seed funds. Equity funds formed as partnerships of public and private institutions could become important sources of risk sharing finance as well as providers of organizational capacity and expertise in support of the financing of infrastructure projects. Initiatives such as the establishment of African PAIDF fund, 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 in the much needed investment areas of the emerging economies and greenfield infrastructure.

Initiatives reviewed in this paper, some yet to be proved successful, could represent models in the future for other similar public and private funds both at regional and national level for different infrastructure sectors. However, it is important to stress that public intervention in long-term investment projects should be decided in principle on the basis of identified market failures, avoid crowding out private investments, and should be appropriately priced and subject to fiscal considerations. This will require further analysis²².

In order to catalyse institutional investment in infrastructure and guarantee the success of these initiatives, governments need to provide mechanisms to ensure a level playing field for foreign investment, ensure regulatory conditions are not biased against long-term investments, and collaborate on all aspects of investment more transparently.

The decision to establish infrastructure funds needs to be based on the recognition that mobilising private capital and creating a clear pipeline of public-private partnerships is crucial and complementary in responding to the national infrastructure development backlog. Infrastructure needs to be prioritised as a key driver of the country's long-term sustainable growth, with the accompanying regulation providing clear rules for private investment and for institutional investors.

In addressing the barriers to investment and examining the prospective solutions, this paper concludes that a collaborative effort by all parties, including investors, product providers and governments, is required in order to increase the levels of investment in infrastructure by institutional investors. Moving from the current mindset to a longer-term investment environment requires a transformational change in both government and investor behavior. Promotion of a public-private dialogue ensuring a coordinated approach between investors, the financial industry and the public sector will be a key element to develop this new "investment culture".

Some further recommendations include:

1. *The promotion of international infrastructure data collection:* governments and regulators could, where appropriate and needed, strengthen formal requirements to provide consistent information on investments by pension funds in infrastructure, following internationally agreed definitions. This would allow for future monitoring on an international basis. This is necessary for pension funds 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.
2. *The provision of a national infrastructure road map:* this is essential to give investors confidence in governments' commitments to the sector and to show them that will be forthcoming a pipeline of investable projects, backed by credible project preparation analysis and part of a broader long term infrastructure strategy. This will reassure investors that it is worth building up their investment capability. When evaluating policies to promote long-term investment by institutional investors, policymakers should ensure its consistency with the best interest of members, investors, beneficiaries, customers and other relevant stakeholders

²² Further analysis and clear identification of the source(s) of the market failures will need to be determined. Often in emerging market economies poor infrastructure is the major source of market failures. The possibility of government failure also should not be ignored – for example, experience with national infrastructure banks has not always been positive in cases where the investment mandate was not clear or political interference in project selection occurred.

3. *The development of appropriate financing vehicles:* after careful analysis of the most efficient ways to use public funds to leverage private sector finance, governments can issue or support instruments with appropriate risk-return profiles and can provide risk mitigation and credit enhancement tools. Better disclosure and more transparency on governance and fee structure of the different financing vehicles will allow a liquid, investable market in infrastructure investments to develop.
4. *The investigation of regulatory barriers:* governments may encourage further investigation to ascertain whether regulatory and other instruments (such as some accounting and solvency rules) are unintentionally and unnecessarily preventing pension fund investment in infrastructure. Though regulation is important for protecting pension fund members, unintended consequences preventing such long-term investments may need to be addressed. In doing so, their efforts should be based on the current relevant work of international organisations undertaken for example at G20 level. Furthermore, as regards consumer protection, it has to be ensured that long-term 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.
5. *The fostering of collaborative mechanisms between investors:* 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.

APPENDIX

Case Studies - Equity Funds

Name	AUM (mn)	Duration (years)	Asset Types	Geography	Location	Launch Date	Sample Investors	Sample Investments
Meridiam Infrastructure SICAR	€750 (March 2013)	25	PPP Greenfield	OECD	Paris	2006		
Meridiam Infrastructure Europe II SICAR	€935 (March 2013)	25	PPP Greenfield	Europe	Luxembourg	2009		
Meridiam Infrastructure North America II	\$1,100 (March 2013)	25	PPP Greenfield	North America	New York	2010		
Queensland Investment Corporation Global Infrastructure (QIC GI)	\$8,300 (June 2013)				Brisbane, Sydney	2006	State of Queensland	Brisbane Airport, Powerco (NZ), Thames Water (UK)
Industry Funds Management (IFM)	A\$13000	Open-ended	Core mature assets in developed markets	Australia	10%	1995	30 Australian pension funds	Eastern Distributor M1, Melbourne Airport, Manchester Airports group

Case Studies - Co-Investment Platforms

Name	Type	Manager	Country	AUM (Mn)	Duration (years)	Target Return	Asset Types	Launch Date	Sample Investors	Sample Investments
Pensions Infrastructure Platform		Dalmor Capital	UK	£500(£260 committed)	25	RPI 2-5%	Brownfield/ Greenfield Assets in UK	2011	British Airways Pension scheme, Lloyds TSB pension scheme, the Pension Protection Fund, the Railways Pension Scheme, Strathclyde Pension Fund, the West Midlands Pension Fund	Yet to invest
Global Strategic Alliance	Alliance	Borealis Infrastructure	Canada	\$7500	Open-ended till 2014		Core infrastructure, North America, Europe	2012	OMERS, Pension Fund Association, Mitsubishi Corporation, Japan Bank for International Cooperation, Mizuho Bank	US Energy plant
Pension Investment Trust		Company authorized by Investors	Peru	\$500			Infrastructure Project Debt	2009	Four Pension Fund associations of Peru	

Case Studies - Government-Led Initiatives: Equity Funds with public seed capital

Name	AUM (Mn)	Duration (years)	Public Seed Capital – Type and Amount	Manager	Geography	Location	Launch Date	Sample Investors	Sample Investments
Philippine Investment Alliance for Infrastructure Fund (PINAI)	\$625	10 years	Government Service Insurance System (GSIS) 50% Equity; Asian Development Bank	Macquarie Infrastructure and Real Assets (MIRA)	Philippines	London	July 2012	Algemene Pensioen Groep, Asian Development Bank, Macquarie Group	Philippines wind farm project - \$85 million
InfraMed	€1000	14-15 years	European Investment Bank	InfraMed	Southern and Eastern Mediterranean	Paris	2011	Cassa Depositi e Prestiti (Italy), Caisse des Depots et de Consignations (France), The European Investment Bank, Caisse de Depots et de Gestion (Morocco), and EFG Hermes (Egypt) ²³	Egyptian Refining Company - \$100 million, Jordan Wind Power Plant - €25million
Pan-African Infrastructure Development Fund (PAIDF)	\$1200	15 years	Development Bank of South Africa (DBSA), African Development Bank (AfDB)	Harith General Partners	African Continent	Johannesburg	2007	Government Employees Pension Fund, Barclays/ABSA Bank, Development Bank of Southern Africa, Old Mutual, African Development Bank, Liberty Life, Metropolitan Asset Managers, Social Security and National Insurance Trust	TAV Airports, Tunisia; Essar Telecom, Kenya;

²³ Cassa Depositi e Prestiti (Italy), Caisse des Depots et de Consignations (France), The European Investment Bank are members of Club Long Term Investors, which was founded in 2009 with the aim to bring together worldwide institutions to encourage cooperation and to foster the right conditions for long-term investments in promoting growth. Today the Club is composed of 19 major financial institutions and institutional investors from all over the world mainly from G20 countries

Name	AUM (Mn)	Duration (years)	Public Seed Capital – Type and Amount	Manager	Geography	Location	Launch Date	Sample Investors	Sample Investments
Marguerite Fund	€710		European Investment Bank	Marguerite	Europe	Luxembourg, Paris	2009	Cassa Depositi e Prestiti, Caisse des Depots et de Consignations, The European Investment Bank, KfW, Instituto de Credito Oficial, and PKO Bank Polski SA	A1 Motorway (Spain), Toul-Rosières 2 (France); Zagreb Airport; wind farm, Poland
Brookfield Peru Infrastructure Fund	\$440		Cofide (State-owned bank) \$100m	Brookfield	Peru		2009		
Ashmore Colombia Infrastructure Fund	\$500		Government of Colombia	Ashmore	Colombia	London	2009	IaDB, Banco de Comercio Exterior de Colombia, CAF, Colombian pension funds	
Macquarie-SBI Infrastructure Fund (MSIF)	\$910		State Bank of India	Macquarie Infrastructure and Real Assets	India		2008	State Bank of India (India), Macquarie Group Ltd (Australia), IFC, and 7 others	Delhi International Airport, Ashoka toll roads
SBI Macquarie Infrastructure Trust (SMIT)	INR 11,871		State Bank of India	Macquarie Infrastructure Management Private Limited	India		2008	State Bank of India (India), Macquarie Group Ltd (Australia), and 9 others	Trichy Tollways Private Limited, GMR Jadcherla Expressways Limited
Macquarie Mexican Infrastructure Fund (MMIF)	\$550		Mexico's National Infrastructure Fund, FONADIN	Macquarie-controlled management company	Mexico		2010	Mexican pension funds	

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