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Pension Funds Investment in Infrastructure: Policy Actions

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Abstract/Résumé

PENSION FUNDS INVESTMENT IN INFRASTRUCTURE: POLICY ACTIONS

Abstract: Pension funds are increasingly looking at infrastructure investment with some investors actively pursuing opportunities in the sector. Different countries are at different stages in the evolution of pension fund investment in infrastructure.

A survey of a sample of the most significant actors was launched by the OECD in May 2010 within the framework of the OECD Project on Transcontinental Infrastructure 2030-2050[1]. Based on the survey a series of barriers to investment were indentified. This paper draws largely on the results of the survey.

Looking ahead, it can be expected that favourable conditions such as the growth of pension funds, privatisation trends and changing regulations, will continue to increase the interest of institutional investors in general, and of pension funds in particular, in infrastructure investment.

However, overall investment in infrastructure is still limited and a high proportion of pension funds are not currently investing. In order to attract pension fund investment 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 other affecting investors more generally.

Policymakers have an opportunity to act now. In the wake of the financial crisis, institutional investors are redefining their investment and risk allocation strategies. At the same time new financial regulation potentially affecting investment in infrastructure is being drafted. The crisis, while highlighting many of the risks associated with infrastructure, it has also provided an opportunity for the asset class to mature, in terms of building the experience of both investment teams and investors, and ushering in more realistic risk and return expectations.

Moving from the current mindset to a longer-term investment environment requires a transformational change in investor behaviour, i.e. a new "investment culture". The market, by its nature, is unlikely to deliver such a change. Major policy initiatives, in a variety of areas are needed. Some of these initiatives are considered in this paper.

Policy actions proposed in this paper are based on initial OECD research undertaken and are intended to generate debate and discussion. Comments are welcome by the author. As part of the OECD project "Institutional Investors and Long Term Investment" further research is planned on these topics[2]. Ultimate goal of the project is to provide a set of final policy recommendations to be adopted by governments and interested parties.

*JEL codes:*G15, G18, G23, G28, J26

Keywords: alternative assets, asset allocation, barriers, diversification, listed securities, infrastructure, pension, private finance, regulatory constraints, risk, return

[1] OECD (2011) Pension Fund Investment in Infrastructure: A Survey. For more details on this see box 4 of this paper

[2] See www.oecd.org/finance/lti

LES INVESTISSEMENTS DES FONDS DE PENSION DANS LES INFRASTRUCTURES : ACTIONS DES POUVOIRS PUBLICS

Resumé : Les fonds de pension s'intéressent de plus en plus aux investissements dans les infrastructures, certains investisseurs recherchant activement des opportunités dans ce secteur. Tous les pays n'en sont pas au même stade dans ce domaine.

En mai 2010, l'OCDE a lancé une enquête auprès d'un échantillon de grands acteurs du marché dans le cadre de son projet sur les besoins d'infrastructures transcontinentales à l'horizon 2030-50[3]. Une série d'obstacles à l'investissement a été identifiée dans le cadre de cette enquête, dont le présent document reprend largement les résultats.

Dans l'avenir, on peut s'attendre à ce que les conditions favorables comme la croissance du marché des fonds de pension, les grandes orientations en matière de privatisation et l'évolution de la réglementation continueront à renforcer l'intérêt porté par les investisseurs institutionnels en général, et les fonds de pension en particulier, aux investissements dans les infrastructures.

Cela étant, dans l'ensemble, ce type d'investissement est encore limité et, pour l'heure, une forte proportion de fonds de pension ne s'est pas encore engagée dans cette voie. En vue d'attirer les investissements des fonds de pension dans les infrastructures et d'assurer leur succès et leur viabilité à long terme, il faut s'attaquer à un certain nombre d'obstacles à l'investissement, certains propres aux fonds de pension, d'autres concernant les investisseurs de manière plus générale.

Pour les responsables de l'action publique, une occasion d'agir s'offre actuellement. En raison de la crise financière, les investisseurs institutionnels redéfinissent leurs stratégies d'investissement et de répartition des risques. Parallèlement, une nouvelle réglementation financière, susceptible d'avoir une incidence sur les investissements dans les infrastructures, est en cours d'élaboration. La crise, si elle a mis en relief de nombreux risques associés à ce secteur, a aussi porté à maturité cette catégorie d'actifs, dans la mesure où elle a permis aux gestionnaires de fonds et aux investisseurs d'acquérir une expérience dans ce domaine et a donné matière à des attentes plus réalistes concernant les risques et les rendements.

Passer de l'état actuel des mentalités à une démarche d'investissement à plus long terme nécessitera un changement radical du comportement des investisseurs, autrement dit une nouvelle « culture d'investissement ». Le marché, de par sa nature, ne sera sans doute pas à l'origine d'une telle mutation. D'importantes initiatives de la part des pouvoirs publics sont donc indispensables dans toutes sortes de domaines. Le présent document examine certaines d'entre elles.

Les actions des pouvoirs publics proposées ici reposent sur les premières études menées par l'OCDE et sont destinées à susciter débats et discussions. Tous les commentaires à cet égard sont bienvenus. Dans le cadre du projet de l'OCDE consacré aux investisseurs institutionnels et aux investissements à long terme, il est prévu de mener de nouvelles recherches sur ce sujet. Le projet a pour objet, en définitive, de formuler un ensemble de recommandations d'action publique en vue de leur adoption par les États et les parties intéressées.

Codes JEL : G15, G18, G23, G28, J26

Mots clés : actifs alternatifs, allocation d'actifs, obstacles, diversification, titres cotés, infrastructures, retraites, financement privé, obstacles réglementaires, risques, rendements,

[3] OCDE (2011) Pension Fund Investissement in Infrastructure: A Survey [Enquête sur les investissements des fonds de pension dans les infrastructures] (à paraître). Pour de plus amples informations à ce sujet, veuillez vous reporter à l'encadré 4 du présent document

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PENSION FUNDS INVESTMENT IN INFRASTRUCTURE: POLICY ACTIONS

By Raffaele Della Croce[*]

About this paper[4]

To bridge the infrastructure gap governments need to encourage private investment in infrastructure. Moreover, private sector participation can bring other benefits than additional capital. The examples include the end-user benefits of a more competitive environment, as well as the mobilisation of the private sector's technological expertise and managerial competences in the public interest. In a large number of OECD and other countries private participation in infrastructure has in recent decades helped boost both the coverage and efficiency of infrastructure services.

Yet at the same time a number of failed public-private partnerships in the infrastructure sectors attest to the difficult challenges facing policy makers. Infrastructure investment involves contracts which are more complex and of longer duration than in most other parts of the economy, operated under the double imperative of ensuring financial sustainability and meeting user needs and social objectives[5].

The challenges are even more acute when governments bring in institutional investors, such as pension funds, whose first responsibility is to provide adequate retirement income for their members. The OECD does not support the proposal of mandating particular investments, such as infrastructure, for pension funds. Infrastructure investments in fact, will only be made if investors are able to earn adequate risk-adjusted returns and if appropriate market structures are in place to access this capital. However, before pension funds will commit large amounts of capital to infrastructure there must be transparent, long-term and certain regulations governing the sector.

This paper focuses mainly on developed countries and alternative investments such as private equity and infrastructure funds targeting opportunities in unlisted equity markets. However problems encountered and solutions proposed are often valid for whatever geographic region or type of infrastructure instrument adopted.

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[*] This working paper was prepared by Raffaele Della Croce from the OECD's Directorate for Financial and Enterprise Affairs. Though drawing on OECD Council approved recommendations and other work supported by OECD committees, the views expressed herein are those of the author and do not necessarily reflect those of the OECD or the government of its Member countries.

[4] Although this report focuses on pension funds, it should be seen in the context of the OECD's broader work on institutional investors. The OECD has recently launched a project on "Institutional Investors and Long Term Investment". As part of this project further studies will follow, including for the insurance sector. See www.oecd.org/finance/lti

[5] The OECD Principles for Private Sector Participation in Infrastructure can assist governments that seek private sector involvement in infrastructure development, in attracting investment and mobilising private sector resources for the benefit of society and achieving sustainable development. The Principles are intended as guidance to public authorities contemplating the involvement of private enterprises as one, among several, options to improve the provision of infrastructure services.

Executive Summary

Introduction

The OECD report on Infrastructure to 2030 (volumes 1 and 2) published in 2006/2007, estimated global infrastructure requirements to 2030 to be in the order of US$ 50 trillion. The International Energy Agency also estimated that adapting to and mitigating the effects of climate change over the next 40 years to 2050 will require around USD 45 trillion or around USD 1trillion a year.

Such levels of investment cannot be financed by traditional sources of public finance alone. The impact of the financial crisis exacerbated the situation further reducing the scope for public investment in infrastructure within government budgets. The result has been a widespread recognition of a significant infrastructure gap and the need to greater recourse to private sector finance.

Institutional investors - pension funds, insurance companies and mutual funds – potentially have been called to play a more active role in bridging the infrastructure gap. With over US$65 trillion in assets held at the end of 2009 in OECD countries alone, institutional investors could be key sources of capital, financing long-term, productive activities that support sustainable growth, such as green energy and infrastructure projects[6].

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. 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 opportunity such as the contractual approach, the phase of asset development (e.g. Greenfield vs Brownfield) and stage of development of the market. Overall the definition of an individual infrastructure opportunity needs to draw on the different elements in order to give a meaningful description. From an investor 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 sources of private finance.

Infrastructure investments are attractive to institutional investors such as pension fund as they can assist with liability driven investments and provide duration hedging. Infrastructure investments are expected to produce predictable and stable cash flows over the long term, improving the diversification of the portfolio and reducing its volatility. However infrastructure investing covers a wide range of different project types and investment characteristics and not all the opportunities offer the attractive characteristics pension funds are seeking into the asset.

Pension funds are buy and hold investors and their main focus is on long term income rather than capital accumulation. The broad mass of pension funds will be more interested in lower risk investments particularly where investment or solvency regulations require a relatively conservative approach to

[6] See OECD 2011 The Role of Pension Funds in financing Green Growth

investment. Pension fund assets can therefore be expected to be directed more towards this type of infrastructure project.

Development of Pension fund Investment in Infrastructure

The main institutional investors in the OECD, pension funds, insurance companies and mutual funds, held over US$65 trillion at the end of 2009. Pension funds assets and liabilities have been rapidly growing in the last decades as the workforce has aged .Assets managed by OECD private pension plan[7] managers reached an absolute figure of US$17.0 trillion in 2009 up from US$ 10.7 trillion in 2001.

Despite the recent financial crisis, the prospect for future growth for institutional investors is unabated, especially in countries where private pensions and insurance markets are still small in relation to the size of their economies. Emerging economies generally face an even greater opportunity to develop their institutional investors sectors as, with few exceptions, their financial systems are largely bank-based. Whether such growth materialises will depend on some key policy decisions, such as the establishment of a national pension system with a funded component which is nowadays a common feature in most OECD countries.

In recent years, favourable conditions such as the growth of pension funds, privatisation trends, changing regulations, have increased the interest of institutional investors in general, and more in particular of pension funds, in infrastructure investment.

Different countries are at different stages in the evolution of pension fund investment in infrastructure. Australian and Canadian pension funds are active investors in infrastructure. The first funds started investing in infrastructure more than ten years ago and have built up since then a significant equity allocation to the sector (for some above 10% of their total portfolio). European funds are slowly increasing their allocation to the asset and US pension funds are starting to consider infrastructure investment.

However, so far institutional investment in infrastructure has been limited. It has been estimated that less than 1% of pension funds worldwide are invested in infrastructure projects, excluding indirect investment in infrastructure via the equity of listed utility companies and infrastructure companies

The financial crisis has highlighted many of the risks associated with infrastructure, but it has also provided an opportunity for the asset class to mature, in terms of building the experience of both investment teams and investors, and ushering in more realistic risk and return expectations

Barriers to investment in infrastructure

A high proportion of pension funds are not currently investors in infrastructure. There are some important hurdles to be overcome before infrastructure becomes a priority interest.

In order to attract pension fund investment 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 other affecting investors more generally.

Infrastructure investing offers different characteristics from other asset classes which could represent barriers to entry to potential investors. High up front cost, lack of liquidity and long asset life of the projects require significant scale and dedicated resources to understand the risks involved, resources that

[7] OECD Private pension plan assets include Defined Benefit and Defined contribution plans and Corporate and Public (i.e. pension plan for public sector employees).

many investors are lacking. These characteristics imply that infrastructure investment – at least in the forms it is currently offered –may not be a suitable proposition for all investors.

Barriers to pension fund investment in infrastructure may be related to "the Investment Opportunities", "the Investor Capability" and "the Conditions for Investment". Although this list should be read in the context of each different country, the main barriers to pension fund investment in infrastructure include:

There are three main categories of barriers to pension fund investment in infrastructure

Categories	Barriers
1. The Investment Opportunities	•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	•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	•Negative perception of the infrastructure value •Lack of transparency in the Infrastructure sector •Shortage of data on infrastructure projects

The Way Forward

1. What is needed in the coming decades is sustained and steady investment in infrastructure. The challenge is to find ways and means of framing long term strategies, securing long term sources of finance and shielding them as effectively as possible from short term exigencies.

2. Institutional investors, in particular pension funds can play a more active role in the financing of long-term, productive activities that support sustainable growth, such as infrastructure projects.

Moving from the current mindset to a longer-term investment environment requires a transformational change in investor behaviour, i.e. a new "investment culture". The market, by its nature, is unlikely to deliver such a change. Major policy initiatives, in a variety of areas are needed. Some of these initiatives are considered below.

Main policy actions to promote long-term investments

Addressing the three main categories of barriers highlighted, will require different policy actions, as summarized in the tables below.

1. The Investment Opportunities

Policy Action	Objective
1.1 Development of national, long-term policy frameworks for key individual infrastructure sectors 1.2 Improve integration of the different levels of government through the creation of infrastructure agency/bank 1.3 Creation of a National Infrastructure Pipeline of projects 1.4 Ensure regulation stability	Support stable and accessible programme of infrastructure projects
1.5 Appropriate transfer of risk (e.g. through new financial instruments) 1.6 Establishing Equity Funds to finance Infrastructure projects 1.7 Development of Debt Capital Markets to finance infrastructure	Structure projects as attractive investment opportunities for pension funds

2. The Investor Capability

Policy Action	Objective
2.1 Appropriate regulatory, supervisory and tax frameworks for institutional investors to develop	Create the necessary preconditions for the development of institutional investors
2.2 Improve trustee composition and knowledge	Better Pension Fund Governance
2.3 Support consolidation of smaller funds, pooling of funds	Foster collaborative strategies and resource pooling
2.4 Regulatory frameworks and OECD guidelines to favour transparency in business models and alignment of interests	Better alignment of interests between pension funds and the infrastructure industry:
2.5 Reform of funding regulation for DB schemes 2.6 Change in pension accounting rules 2.7 Ease quantitative investment restrictions	Adjust the prudential regulatory framework towards long term investment

3. The Conditions for Investment

Policy Action	Objective
3.1 Independent data collection and common performance measures 3.2 Universities or research institutions to provide the right expertise to investors 3.3 Ensure a level playing field for investors	Enhance the Investment Environment:
3.4 Association of infrastructure investors able to bring forward institutional investors interests 3.5 Create a platform for dialogue between institutional investors, financial industry and governments	Dialogue among parties

PENSION FUNDS INVESTMENT IN INFRASTRUCTURE: POLICY ACTIONS

1. Introduction

The Infrastructure Gap

The infrastructure requirements of OECD countries and the larger non-OECD countries, such as China, India and Brazil are growing. To a large extent, this has to do with economic growth, a general underinvestment in the past and new challenges such as climate change.

The OECD report on Infrastructure to 2030 (volumes 1 and 2) published in 2006/2007, estimated global infrastructure requirements to 2030 to be in the order of US$ 50 trillion. The International Energy Agency also estimated that adapting to and mitigating the effects of climate change over the next 40 years to 2050 will require around USD 45 trillion or around USD 1trillion a year.[8]

Such levels of investment cannot be financed by traditional sources of public finance alone. The impact of the financial crisis exacerbated the situation further reducing the scope for public investment in infrastructure within government budgets. The result has been a widespread recognition of a significant infrastructure gap and the need to greater recourse to private sector finance[9].

A further consequence of the crisis was the disappearance of some significant actors active in the infrastructure market such as monoline insurers[10] in the capital markets. At the same time traditional sources of private capital such as banks, have restrained credit growth and may be further constrained in the coming years when new regulations (e.g. Basel III) take effect.

Institutional investors - pension funds, insurance companies and mutual funds – have been called to potentially play a more active role in bridging the infrastructure gap. With over US$65 trillion in assets held at the end of 2009 in OECD countries alone, institutional investors could be key sources of capital, financing long-term, productive activities that support sustainable growth, such as green energy and infrastructure projects[11].

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[8] See International Energy Agency (IEA) (2008), '*Energy Technology Perspectives: Scenarios and Strategies to 2050'*. The estimate is that around half the investment will involve replacing conventional technologies with low-carbon alternatives with the remainder being additional investment.

[9] For example: Barroso addressing the European Union December 2010 ; South Korea Green Investment Strategy or the recent President Obama's State of the Union speech on 25th of January 2011

[10] Monoline insurers are financial institutions focused solely on insuring bond issuers such as municipal governments against default. Bond issuers buy this insurance to upgrade the credit worthiness of their bonds, making the overall cost lower by giving confidence that the insured security would be paid in full. The first monolines were set up in the US in the 1970s, covering municipal and corporate bond issues. The financial crisis hit hard the monolines. Some lacked sufficient capital to cover their liabilities adequately. Several had their credit ratings reduced, effectively downgrading them to junk status

[11] See OECD 2011 The Role of Pension Funds in financing Green Growth

Importance of Infrastructure

Infrastructures projects are not an end in themselves. Rather, they are a means for ensuring the delivery of goods and services that promote prosperity and growth and contribute to quality of life, including the social well-being, health and safety of citizens, and the quality of their environment.

Addressing the challenge of climate change and 'green growth'[12] more generally will require shifting from fossil fuels and conventional technologies to newer clean technology and infrastructure (on the current trajectory, energy-related emission of CO_2 are expected to double by 2050).

Like other investment, infrastructure expansion typically adds to the productive capacity in an economy. However, OECD empirical analysis suggests that infrastructure investment can have effects on growth over and above those arising from adding to the capital stock[13].

These effects can occur through a number of different channels, such as facilitating trade and the division of labor, competition in markets, a more efficient allocation of economic activity across regions and countries, the diffusion of technology and the adoption of new organizational practices or through providing access to new resources[14].

Infrastructure Investment

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. 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 opportunity such as the contractual approach, the phase of asset development (e.g. Greenfield vs Brownfield) and stage of development of the market[15]. Overall the definition of an individual infrastructure opportunity needs to draw on the different elements in order to give 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.

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[12] Green growth can be seen as a way to pursue economic growth and development while preventing environmental degradation, biodiversity loss and unsustainable natural resource use. It aims at maximising the chances of exploiting cleaner sources of growth, thereby leading to a more environmentally sustainable growth model (see OECD *Interim Report of the Green Growth Strategy)*

[13] See OECD 2009

[14] Such effects, which reflect the influence of infrastructure on efficiency throughout the economy, appear to be stronger at lower initial levels of provision. At the same time, these effects are not shared by all OECD economies, with some evidence suggesting cases of both under and over-provision and of both efficient and inefficient use of infrastructure. Cost-benefit analysis of individual projects is key to ensuring efficient infrastructure investments. For further reference see *Going for Growth*, OECD, 2009.

[15] See World Economic Forum 2010

Box 1. Greenfield vs Brownfield Investments[16]

Greenfield or primary projects are assets generally constructed for the first time at a specific site. They may be in planning, development, financing or construction stage. In contrast, brownfield or secondary projects are already operational and/or have a predecessor of some description 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.

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 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 would suit growth-style investors.

If it is difficult to give a unique definition of infrastructure investment, infrastructure assets usually possess certain unique investment characteristics such as[17]:

- **Long Asset Duration**. The long duration of the investments is due to concessions for infrastructure assets typically of 25/30 years.

- **Inflation Protection**. Revenue from infrastructure investments is often combined with inflation adjustment mechanisms whether through regulated income clauses, guaranteed yields or any other form of contractual guarantees. Project income generated via user charges (e.g. toll roads) is usually tied to GDP or the consumer price index (CPI).

- **Monopoly/Quasi-Monopoly Market Position**. Infrastructure assets often benefit from true monopoly or a strongly competitive position.

- **High Barriers to Entry**. Assets are difficult to duplicate due to scale, cost, and resources. For example, highways and bridges are expensive to build and maintain.

- **Inelastic Demand**. Demand for infrastructure services, due to their fundamental services, are relatively inelastic and predictable.

- **Steady and Predictable Cash Flow**. Infrastructure assets generate stable and recurring long-term cash flows which may support significant leverage levels.

From an investor 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 sources of private finance. From a financing perspective any definition needs to take into account both the money flows into and the risk and reward nature of infrastructure18.

[16] Weber and Alfen 2010

[17] For more on the issue of infrastructure as an asset class see Beeferman (2010), Chambers (2007); Inderst (2010), Weber and Alfen 2010

[18] World Economic Forum 2010

Route to Investment

Institutional Investors can access infrastructure investments through traditional or alternative asset classes, more specifically:

- ***Through listed equity***: investors traditionally invested in equity infrastructure via listed companies such as utilities, energy or transport companies. In fact in the past, infrastructure projects have been run and operated mainly by publicly-listed companies including construction and engineering groups. In recent years new investment vehicles (e.g. indices, mutual funds, ETFs) were created for those not able or willing to make their own investment.

- ***Through fixed-income:*** in some countries historically, institutional investor exposure to infrastructure has been via fixed income. Infrastructure investors have a choice of "infrastructure bonds", that can be defined as fixed-income securities issued by states/municipalities (i.e. Build America Bonds in the US) or corporations (i.e. UK water companies) in order to raise capital for infrastructure projects. Bonds may be earmarked to specific infrastructure projects e.g. to build a tunnel. PPP/PFI bonds are a new type of infrastructure bonds popular in certain countries (e.g. the UK)

- ***Through alternative asset classes:*** the past few years have seen another trend of significance in the financing of infrastructure – the provision of investment vehicles such as private equity and infrastructure funds targeting mainly opportunities in equity markets. These new investment vehicles represent "alternative" asset classes to the traditional equity and fixed income and allow a broader range of smaller pension funds to also get involved. Pensions can invest in publically-listed equity funds trading on a stock exchange (eg. Brookfield fund) or in un-listed equity funds that focus on infrastructure investments (i.e. Cube Capital). However main interest of investors in recent years has been to unlisted equity funds[19]. A number of debt/mezzanine funds have also being raising money in the last years.

  Dedicated infrastructure funds were first set up in the mid-1990s in Australia and pension funds were early investors in them. Some large Canadian pension plans also pioneered in the field. In the 2000s, the availability of cheap debt fueled the increase in fund-raising for mainly unlisted infrastructure funds in other regions such as Europe and North America, opening new opportunities of investment for pension funds.

  Recent trends have seen the largest pension funds investing directly (or co-investing along infrastructure funds) in equity of individual infrastructure companies (e.g. OMERS, OTPP acquisition of High Speed Link in the UK).

Pension Funds and Infrastructure

Infrastructure investments are attractive to institutional investors such as pension fund as they can assist with liability driven investments and provide duration hedging[20]. 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 pensions

[19] Before the financial crisis a wave of new private equity funds entered the infrastructure market attracted by the growing number of assets being privatized or sold by governments. Assets under management within the unlisted fund market more than doubled between December 2006 and December 2008 from $52bn to $111.9bn.

[20] Chambers (2007)

liabilities. In addition infrastructure assets linked to inflation could hedge pension funds liability sensibility to increasing inflation[21]

Pension funds are increasingly looking at infrastructure to diversify their portfolios, due to the low correlation of infrastructure to traditional asset classes. Since listed infrastructure tends to move in line with broader market trends, it is a common held view that investing in unlisted infrastructure although illiquid, can be beneficial to ensure proper diversification. In principle the long-term investment horizon of pension funds and other institutional investors should make them natural investors in less liquid, long-term assets such as infrastructure[22].

However not all the infrastructure opportunities offer the attractive characteristics pension funds are looking for. As mentioned, infrastructure investing covers a wide range of different project types and investment characteristics. Based on risk/return profiles the infrastructure portfolio of the largest pension funds is often divided in different segments: i.e. Core where cash yield is the dominant part of the return and Value Added/Opportunistic where capital appreciation forms the dominant part of the return[23].

Though some pension funds – mostly larger, more sophisticated investors - are able to invest at the riskier end of the spectrum (i.e. greenfield projects, untested technologies etc.), this will only ever constitute a small percentage of their portfolios. In general, pension funds prefer to invest in large, mature operating assets that already generate cash flow although they will evaluate and participate in greenfield opportunities on an opportunistic basis.

Pension funds are buy and hold investors and their main focus is on long term income rather than capital accumulation. The broad mass of pension funds will be more interested in lower risk investments (i.e. availability based payments[24] etc.), which provide a steady, inflation adjusted, income stream – particularly where investment or solvency regulations require a relatively conservative approach to investment. Pension fund assets can therefore be expected to be directed more towards this type of infrastructure project.

2. Development of Pension Fund Investment in Infrastructure

Growth of Pension funds

The main institutional investors in the OECD, pension funds, insurance companies and mutual funds, held over US$65 trillion at the end of 2009. Pension funds assets and liabilities have been rapidly growing

[21] Since the benefits of active employees are typically linked to their wages and retiree benefits are increased in line with some portion of price inflation by many plan sponsors.

[22] However Bitsch F, Buchner A., and Kaserer C, (2010) in their analysis of unlisted infrastructure investments have found returns positive correlated to public equity markets and no inflation linkage pointing to equity like characteristics rather than bond ones. Lower downside risk was also considered an important feature of infrastructure investments, part of the analysis. According to the authors further evidence is needed for a more general picture of the infrastructure market.

[23] For example CalPERS' infrastructure portfolio is divided in four segments: Core, Value Added, Opportunistic and Public . CalSTRS' current infrastructure portfolio is divided in three segments: Core, Value Added and Public. Over the long term it will be further divided in Core/Mature, Value Added/Hybrids, Opportunistic/Greenfield and Public.

[24] Availability based projects, typically in the accommodation, health education sectors, are where payment is made for making a building available for use by the public sector (as opposed to usage based projects involving user paid tolls, fares or usage fees – such as roads, bridges, ports, airports).

in the last decades as the workforce has aged .Assets managed by OECD private pension plan[25] managers reached an absolute figure of US$17.0 trillion in 2009 up from US$ 10.7 trillion in 2001.

Despite the recent financial crisis, the prospect for future growth for institutional investors is unabated, especially in countries where private pensions and insurance markets are still small in relation to the size of their economies. Emerging economies generally face an even greater opportunity to develop their institutional investors sectors as, with few exceptions, their financial systems are largely bank-based. Whether such growth materialises will depend on some key policy decisions, such as the establishment of a national pension system with a funded component which is nowadays a common feature in most OECD countries.

In relation to pensions , many countries around the world are partly funding their otherwise pay-as-you-go (PAYG) financed social security systems by establishing or further developing existing public pension reserve funds (PPRFs). This trend is parallel to the growing shift towards fully-funded, privately managed pension systems, which has in turn heightened the role of pension funds in retirement income arrangements[26].

Prefunding pensions, whether it is via the establishment of public pension reserve funds or the development of fully-funded, private pension systems can help governments respond more effectively to the fiscal pressures that will result from ageing populations. While prefunding may not in itself offset the decline in domestic growth rates that may result from worsening dependency ratios, it can help to solve some aspects of the demographic shock. In particular, prefunding social security systems can facilitate tax-smoothing, that is, maintaining relatively constant contribution rates to the social security system. While such objectives could also be met by appropriate management of the public debt, assets in the reserve fund are assigned to financing the social security system. Savings in the form of public debt reductions, on the other hand, may end up being used for other future outlays of the government. Prefunding pensions can also serve important macroeconomic goals:

- *Raise national savings:* In the case of public pension reserve funds, a legal commitment to use reserve fund assets exclusively for future pension expenditures and to invest in a diversified manner forces the government to reduce current expenditure or raise taxes to maintain current fiscal objectives. Hence, public saving will rise and the overall debt position of the government may improve. If a private pension system is introduced, as long as there is not a perfect substitution between pensions and other forms of saving, total private sector saving will be raised. The impact on savings is greatest if the system is made mandatory.

- *International diversification*: by establishing reserve funds or pension funds a country is better able to access output produced in foreign countries which may not be suffering the same demographic and economic shocks, raising national welfare.

- *Financial market development*: In developing countries, where financial systems are underdeveloped, prefunding pensions may contribute to economic growth by improving access to finance for productive activities. Pension funds and other institutional investors can also help improve the operation of financial markets by making markets more liquid, efficient and transparent by for example, encouraging the modernisation of market trading and engaging in

[25] OECD Private pension plan assets include Defined Benefit and Defined contribution plans and Corporate and Public (i.e. pension plan for public sector employees).

[26] For reference on benefits of pension prefunding see OECD Draft Paper Pensions in Africa, Stewart Fiona and Juan Yermo, prepared for the OECD/IOPS Global Forum on Private Pensions 30-31 October 2008 Mombasa – Kenya.

shareholder activism. They can also act as a countervailing force to commercial banks and stimulate financial innovation. However, a high and sudden demand by pension funds for local assets could have a distorting impact, and therefore should be managed with care.

While it is difficult to quantify such macroeconomic effects and isolate them from other factors, the few studies that have attempted to do so have found relatively large effects especially for the Latin American region, the pioneer among the developing world in prefunding pension systems (see Box 2, below).

Box 2. Empirical evidence on the macroeconomic impact of pension prefunding.

One the most researched cases is the Chilean one, which reformed its pension system in 1981 by replacing its social security system with a mandatory individual account system run by privately managed pension fund administrators. Lefort and Walker (2002) found evidence of a positive impact of pension fund equity investment on the cost of capital of firms as proxied by price-to-book ratios and dividend yields. Corbo and Schmidt-Hebbel (2003) find evidence of a direct impact of pension reform on total savings and hence on economic growth. They estimate that approximately half of the increase in total savings between 1981 and 2001 (4.9 percent of GDP) was due to the pension reform. They also estimate that the pension reform explains 20 percentage points of the 1 percent growth in Total Factor Productivity (TFP) growth over the period (as a result of financial development) and 0.5 percentage points of the 4.6 growth in real GDP over the period. For other countries, the evidence on the impact on savings, financial market development and growth is mixed, but generally positive, especially as far as developing countries are concerned. López Murphy and Musalem (2004) show that the introduction of mandatory funded pension systems contributed to higher savings in a sample of developing countries that they analyse. Various studies have focused on the impact of pension funds on the development of financial markets. Catalan et al. (2000) show that pension funds and other institutional investors have contributed to the development of equity markets and in particular explain the size of the stock market vis-à-vis banks. Impavido et al. (2003) however find little evidence of a relationship between contractual savings (pension funds and life insurance companies) on a cross-section of countries and an indicator of trading activity (traded values relative to GDP). The link is stronger for developing countries and for developed countries with bank-based financial systems. Some recent studies have also looked at the direct link between the growth of pension funds and economic growth. Davis (2002) finds a significant direct effect of the share of equities held by pension funds and life insurance companies on TFP growth in 16 OECD countries. Davis and Hu (2004) using a dataset covering 38 countries also find a direct positive link between pension assets and the growth of output per worker. Both papers argue that an important aspect of the financial development channel is an enhancement of corporate governance. Even firms unaffected by shareholder activism, they conclude, have natural incentives to improve their performance so as to avoid the threat from pension fund activism in the future.

Pension Fund Investment in Infrastructure

In recent years, favourable conditions such as the growth of pension funds, privatisation trends, changing regulations, have increased the interest of institutional investors in general, and more in particular of pension funds, in infrastructure investment.

Different countries are at different stages in the evolution of pension fund investment in infrastructure. Australian and Canadian pension funds are active investors in infrastructure. The first funds started investing in infrastructure more than ten years ago and have built up since then a significant equity allocation to the sector (for some above 10% of their total portfolio).

However, so far institutional investment in infrastructure has been limited. It has been estimated that less than 1% of pension funds worldwide are invested in infrastructure projects, excluding indirect investment in infrastructure via the equity of listed utility companies and infrastructure companies (See box 3 below)

Box 3. How much is invested in infrastructure?

There are limited data on pension fund investment in infrastructure. National statistical agencies do not currently collect separate data on these investments, and the different modes available to investors to gain exposure to infrastructure means that information is buried under different headings.

Infrastructure investment is rarely part of a separate allocation usually often being considered part of the private equity or real estate allocation. Pension fund investment in listed infrastructure vehicles is reported by national statistics agencies as national or foreign equities and lending to infrastructure vehicles is reported as fixed interest, while direct investment or participation in private equity vehicles is reported within the category 'other'.

Since however it is becoming accepted practice to consider infrastructure as an alternative asset class, it is interesting to look at the asset allocation across different countries and in particular at the trend in alternative assets.

The Global Alternatives Survey 2010 undertaken by Tower Watson shows Real Estate as the largest block of alternative assets for pension funds (around 52%) followed by Private Equity (21%) Hedge Funds (13%) and Infrastructure (12%). Infrastructure increased its proportion of alternative assets in 2010 from 9% to 12% of total alternative assets. In terms of geographical distribution of infrastructure assets, Europe has the highest proportion with 43%, followed by North America with 36%. (*Based on Alternative assets managed on behalf of pension funds globally by the top 100 managers ,approx Us$ 817 billion)*

Before the financial crisis a wave of new private equity funds entered the infrastructure market attracted by the growing number of assets being privatized or sold by governments. Assets under management within the unlisted fund market more than doubled between December 2006 and December 2008 from $52bn to $111.9bn. The peak of pension funds participation in infrastructure came in the year 2007 when fundraising was at record level and sector valuations were high.

Despite this recent growth however, so far institutional investment in infrastructure has been limited. It has been estimated that less than 1% of pension funds worldwide are invested in infrastructure projects, excluding indirect investment in infrastructure via the equity of listed utility companies and infrastructure companies[27].

Appetite for Infrastructure

Canadian pension funds over the years, have been able to acquire the knowledge, expertise and resources to invest directly in infrastructure. Not only they are able to co-invest but also to take leading roles in consortia, competing with other funds and financial sponsors when bidding for projects. This also means these investors have in-house resources to produce their own research and risk assessment of infrastructure projects without being dependent on external consultants.

US pension funds have been investing little in infrastructure in the past acquiring an exposure mainly to the energy sector, through a few funds active in the country. Recent developments in the infrastructure market have increased investors attention to this asset class, however different investors are taking different approaches towards investment in infrastructure.

Despite the maturity of the infrastructure market, especially in countries such as the UK, France and Spain, European investors have started building up their allocation to infrastructure, treating it as a separate allocation, only in the last five years. Allocations to the asset are still limited (e.g. 1 to 3% of total portfolio) even if targets have been slowly increasing in recent years.

Several factors account for the growth of pension fund infrastructure investment, such as

[27] A survey of 119 investors worldwide by Russell Investments (2010) sees the share of infrastructure at 0.3 percent in 2009, but expects it to rise to 1.4 percent of overall assets in three years' time. See Also the Survey conducted by IOPS 2011 Pension fund Use of Alternative Investments and Derivatives.

- the availability of investment opportunities for private finance capital and therefore for pension funds. Private finance involvement has taken different routes in different countries.

- the maturity and size of the pension fund market i.e. the institutional capital available for investment. Although the aggregate OECD pension market is large, the size of domestic markets varies considerably, reflecting the mix of public and private pensions, whether participation is mandatory or voluntary, and investment policies.

- pension fund regulations, that in part explains why in some countries institutional investor traditional exposure to infrastructure has been via debt (i.e. bonds).

- infrastructure investment involves a steep learning curve being a quite complex asset. Investing in the asset requires a long lead time to complete due diligence, educate plan sponsors and set up the appropriate structure for investment and risk management.

In addition to the factors considered above, several barriers to investment are limiting pension fund involvement in infrastructure investment. In order to better understand the nature of these barriers a survey was launched by the OECD in June 2010 (see box 4 below).

Box 4. Pension fund Investment in Infrastructure – A Survey

The OECD Project on *Infrastructure to 2030*, published in 2006/7, already recognized the growing importance of investment needs to 2030 for infrastructure in telecommunication, electricity, water and transport, while highlighting at the same time, the notion of an emerging « infrastructure gap ».To bridge this "infrastructure gap" institutional investors were identified as one of the most promising candidates and it was decided to further review opportunities and barriers to investment in infrastructure from the standpoint of pension funds.

A survey of a sample of the most significant actors was then launched by the OECD within the framework of the current OECD Project on Transcontinental Infrastructure 2030-2050. The main countries which have been covered by the study are Australia, Canada, South Korea, USA and a series of actors throughout Europe.

The objective of this survey based study was to understand the main problems encountered by pension funds when investing in infrastructure. In order to do so, a brief analysis of the evolution of the infrastructure and pension fund market in each country was undertaken. On the basis of the barriers to investment coming out of the study some policy initiatives are proposed

The focus of the study was mainly on (unlisted) equity investment given the different dynamics and drivers underlying pension fund investment in debt infrastructure and different subjects involved in the investment decision.

The analysis was structured on a country by country basis to underline different stages of evolution of investment in infrastructure and specific problems encountered and solutions proposed in each market. Although the development of each pension and infrastructure market has taken a unique path, they may provide useful examples and lessons in understanding the potential of infrastructure investment markets now developing in other countries.

Findings are mainly based on interviews with industry professionals since the existing data sources are limited, particularly with regard to infrastructure investment policy and risk management. The information acquired in interviews complements that obtained from a literature review, selected pension fund annual reports, and an analysis of the available data sources.

The selection of interviewees was biased towards large-sized defined benefit, public pension funds, since these funds represent a large share of overall infrastructure investment and in some cases have developed investment policies specific to infrastructure. Interviews were held with managers of institutional investors and assets that collectively totalled over $4 trillion at the end of 2010. Besides pension funds themselves, a number of investors from the insurance sector, and prominent financial consultants, infrastructure funds, multilaterals, academics, advisors to treasury departments, were also consulted.

Recent events

Before the financial crisis fierce competition of financial and operational investors and the availability of cheap debt led to a rapid appreciation of infrastructure asset values. As a result, credit quality of infrastructure deals deteriorated[28]. With the financial crisis, some of these projects have begun to struggle.

Some investors seeking stable returns by investing in infrastructure funds ended up being exposed to the volatility of overpriced and overleveraged assets, ultimately with a different risk profile than the one wanted from their infrastructure investments.

A further consequence of the crisis was the disappearance of some significant actors active in the infrastructure market such as project finance banks and monoline insurers in the capital markets. The demise of monolines was important in particular for institutional investors who have to comply with investment guidelines and who relied on their services for project appraisals and monitoring.

The financial crisis has highlighted many of the risks associated with infrastructure, but it has also provided an opportunity for the asset class to mature, in terms of building the experience of both investment teams and investors, and ushering in more realistic risk and return expectations.

3. Barriers and the Way Forward

Barriers to investment in infrastructure

A high proportion of pension funds are not currently investors in infrastructure. There are some important hurdles to be overcome before infrastructure becomes a priority interest.

In order to attract pension fund investment 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 other affecting investors more generally.

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

Although this list should be read in the context of each different country, the main barriers to pension fund investment in infrastructure include:

The Investment Opportunities

- Lack of political commitment over the long term
- Regulatory instability
- Fragmentation of the market among different level of governments

[28] Debt-to-EBITDA multiples in airport deals were ranging from 12x to 30x. For example in 2007, BAA's acquired Budapest airport at a ratio of 23x debt to EBITDA or in 2008 London City Airport acquired by a consortium of American International Group Inc at a ratio of 24x. Source Partners Group Private Market Navigator, H2 2010

- No clarity on investment opportunities
- High bidding costs involved in the procurement process of infrastructure projects
- Infrastructure investment opportunities in the market are perceived as too risky

The Investor Capability

- Lack of expertise in the infrastructure sector
- Problem of scale of pension funds
- Mis-alignment of interests between infrastructure funds and pension funds
- Short Termism of investors
- Regulatory Barriers

The Conditions for Investment

- Negative perception of the infrastructure value
- Lack of transparency in the Infrastructure sector
- Shortage of data on performance of infrastructure projects, lack of benchmark

The Way Forward

What is needed in the coming decades is sustained and steady investment in infrastructure. The challenge is to find ways and means of framing long term strategies, securing long term sources of finance and shielding them as effectively as possible from short term exigencies.

Institutional investors, in particular pension funds can play a more active role in the financing of long-term, productive activities that support sustainable growth, such as infrastructure projects.

Moving from the current mindset to a longer-term investment environment requires a transformational change in investor behaviour, i.e. a new "investment culture". The market, by its nature, is unlikely to deliver such a change. All stakeholders involved in the infrastructure sector, should recognise their mutual benefit on a sustainable proposition for infrastructure and work together towards a common vision. Major policy initiatives, in a variety of areas are needed. Some of these initiatives are considered below.

Main policy actions to promote long-term investments

1. ***The Investment Opportunities - government support for long-term investments: designing policy frameworks that are supportive of long-term investing.***

The limited number and sporadic nature of investment opportunities in the infrastructure sector are perceived as the main barrier preventing investors from including infrastructure in their long-term investment strategy. Institutional investors need a clearer understanding of the government's infrastructure plans beyond the political cycle. To the extent that they do not already exist, governments should support the development of national long-term strategic policy frameworks for individual key infrastructure

sectors. Governments also need to create an ongoing supply of investment opportunities for example through public-private partnerships.

Governments should seek to better understand the investment needs and requirements of institutional investors and assess the scope for promoting the "right" investment opportunities. For instance, a common problem appears to be a mismatch between the desired risk/return profiles and investment horizon of pension funds when investing in infrastructure and the opportunities offered in the market. Through appropriate financial incentives (for instance, tax incentives and feed-in tariffs) and risk transfer mechanisms (such as guarantees and first equity loss on investments), projects should be structured as attractive investment opportunities for investors.

2. The Investor Capability - Reforming the regulatory framework for long term investment

In some OECD countries and most emerging economies, institutional investors are still relatively underdeveloped. Governments need to establish the appropriate regulatory, supervisory and tax frameworks for such investors to develop.

Long-term institutional investors such as pension funds are recurrently being labelled as "short-termist". There is a variety of reasons for this growing short-termism in investment management. For pension funds, the cause is primarily an agency problem[29] .Because of their lack of in-house expertise, most pension funds - the main exceptions being some of the larger ones - rely on external asset managers and consultants for much of their investment activity. However, the incentives and mandates given to these third-parties are often short-term and poorly governed institutions do not make good monitors of third parties. Pension funds may therefore be failing to direct and oversee external managers effectively and look after the long-term interests of their beneficiaries.

The most common vehicles for infrastructure equity investing are infrastructure funds, which are often structured as private equity vehicles. The appropriateness of the private equity model to the infrastructure sector has been questioned by many. Long-term investors such as pension funds want to be sure their partners are like-minded investors, focused on the long-term rather than merely being interested in short-term transaction fees or construction profits. This problem of alignment of interest led to the recent trend of the largest pension funds investing directly in infrastructure by-passing infrastructure funds.

Policymakers need to promote greater professionalism and expertise in the governance of institutional investors. Although often considered as one of the "alternative options", infrastructure investment is complex and each project has specific characteristics which require proper understanding and management. Collaboration and resource pooling can also be encouraged in order to create institutions of sufficient scale that can implement a broader investment strategy and more effective risk management systems that take into account long-term risks. Better alignment of interests should be ensured between pension funds and the infrastructure industry.

In addition to develop the investor capability to invest long term, it is also essential to shape the regulatory framework to take into account long-term investment in an appropriate manner. Regulations sometimes exacerbate the focus on short-term performance, especially when assets and liabilities are valued referencing market prices.

[29] For a detailed analysis of short-termism focusing on the experience of the United Kingdom see Paul Myners' "Review of Institutional Investment", 2000, or the Marathon Club's "Guidance Note on Long-term Investing", 2007 (http://www.marathonclub.co.uk/Docs/MarathonClubFINALDOC.pdf).

In relation to pension funds regulators need to address the bias for pro-cyclicality and short-term risk management goals in solvency and funding regulations, and relax quantitative investment restrictions to allow institutional investors to invest in less liquid assets such as infrastructure.

Given the positive externalities that infrastructure investment brings to the economic system, regulatory authorities should develop a dedicated regulatory approach for long-term investments which takes into account the specificities of their risks and their countercyclical economic role.

3. The conditions for investment - a transparent environment for infrastructure investment

The general investment policy environment for long-term investments often lacks transparency and stability. Infrastructure is also a relatively new investment which entails a new set of challenges for institutional investors. Shortage of objective information and quality data make difficult to assess the risk of infrastructure deals. This makes difficult to assess the risk in infrastructure transactions and understand the correlation with other sectors, especially for new investors less familiar with the characteristics of the investment. International institutions such as the OECD, with universities and research centres can play an educational role, producing better research, collecting data and disseminating good practices and case studies.

In addition, the impact of the financial crisis - which had significant impact on the value of all financial investments including infrastructure assets - challenged the relatively new relationship between the infrastructure fund industry and institutional investors. As a consequence many institutional investors have a negative perception of the infrastructure value and are not considering investment in the sector in the short medium term, unless market conditions change. Pension funds need to acquire more visibility and proactively participate in the infrastructure market. All the stakeholders: governments, regulators, the infrastructure industry, long term investors should create an environment that promotes interaction between the parties.

4. Policy Actions

4.1 The Investment Opportunities

Objective: ***Support stable and accessible programme of infrastructure projects***

1.1 Policy Action: Development of national, long-term policy frameworks for key individual infrastructure sectors

1.2 Policy Action: Improve integration of the different levels of government in the design, planning and delivery of infrastructures through the creation of infrastructure agency/bank

1.3 Policy Action: Creation of a National Infrastructure Pipeline

1.4 Policy Action: Ensure regulation stability

4.1.1 Policy Action: Development of national, long-term policy frameworks for infrastructure sectors

The limited number and sporadic nature of investment opportunities in the infrastructure sector are perceived as the main barrier preventing investors from including infrastructure in their long-term investment strategy.

Institutional investors need a clearer understanding of the government's infrastructure plans beyond the political cycle. To the extent that they do not already exist, governments should support the development of national long-term strategic policy frameworks for individual key infrastructure sectors.

A long term plan for infrastructures (a ten to twenty-year strategic plan) that set out government commitments in the sector is essential to provide greater transparency and increased certainty for the private sector. Also, the presence of a long-term strategic plan , can be of considerable benefit in terms of orientating decision makers' views to the future and imbuing a sense of vision and long-term purpose.

If political support is undefined and procurement policy lacks clarity then investors will not establish a presence in the market. The experience of countries, such as Australia and Canada, has shown how national infrastructure plans are an important signal to investors of political commitment to infrastructure over the long term. The UK National Infrastructure Plan was also recently released in September 2010.

On the other hand there are examples of infrastructure markets that have not delivered on their promises frustrating the expectations of many investors. In the US for instance in New York State, Governor Paterson created the New York State Commission on State Asset Maximization in October 2008 to explore asset maximization opportunities throughout the State. The Commission issued a report in 2009 outlining 26 specific PPP opportunities in the State. However in May 2010 the initiative lost the political support of the Governor and the Commission was dissolved

4.1.2 Policy Action: Improve integration of the different levels of government in the design, planning and delivery of infrastructures through the creation of infrastructure agency/bank

While the investors have a national if not global approach to infrastructure, governments struggle to have a national vision too often only looking at regional or state infrastructure needs. Policy makers need to take a perspective on infrastructure which cuts through the different levels of government – municipal, regional and national.

A common problem is a lack of co-ordination among different levels of government. Federal political system leads to further complexity, with different laws, regulations and standards between States.

In Europe, given the scale of the investment required in transport, the necessity to prioritise projects, in close collaboration with national governments, and to ensure effective European coordination was recognised. In this context, the Trans-European Transport Network Executive Agency (TEN-T EA) was created in 2006 to implement and manage the TEN-T programme on behalf of the European Commission

Recent establishment of Infrastructure UK in June 2010 and Infrastructure Australia in April 2008 also addresses the same issues. Infrastructure Australia in fact was established by the Australian Government to bring all levels of government and the private sector together to streamline the assessment, prioritisation and procurement of infrastructure across the nation.

4.1.3 Policy Action: A National Infrastructure Pipeline of projects

Governments also need to create an ongoing supply of investment opportunities for example through public-private partnerships (PPPs).

The development of a National Infrastructure Pipeline clearly setting government priority identification is important to show investors the presence of a steady flow of opportunities. Ongoing pipelines of opportunities are more likely to attract bidders than ad hoc procurement

More investors in the market would drive competition ultimately offering value for money to the taxpayers. For investors, having a pipeline of bidding opportunities means they can have a higher probability of success, which in turn allows them to consider the cost of bidding across this portfolio of bids rather than on a project-by-project basis.

According to Infrastructure Australia the pipeline should leverage the infrastructure plans and programmes of the various government departments and agencies, state and territory jurisdictions providing a comprehensive outlook of private sector opportunities across procurement models. The pipeline should also provide details on:

- Project size;
- Government contribution;
- Integration with the public process;
- Timeframe for prior to issuance of request for proposal; and,
- Potential private sector engagement.

Box 5. Examples of Good Practice

Canada

Through *Building Canada*, the Government of Canada's aim is to provide funding but also to promote knowledge, research, best practices, long-term planning, and capacity building.

In addition, the *Building Canada* plan will also create a new framework for different orders of government to come together to assess infrastructure needs and priorities on a regular basis and to plan investments to meet these needs.

The Building Canada plan also encourages the development and use of P3 best practices by requiring that P3s be given consideration in larger infrastructure projects funded through the Gateways and Border Crossings Fund and by the Building Canada Fund.

Australia

In recent years Australia's infrastructure sector has been experiencing significant reforms facilitating the harmonisation of policies relating to the development of, and investment in, nationally significant infrastructure projects.

With the establishment of Infrastructure Australia in 2008, the Australian Government has announced a new, national approach to planning, funding and implementing the nation's future infrastructure needs.

Infrastructure Australia was established by the Australian Government in April 2008 to bring all levels of government and the private sector together to streamline the assessment, prioritisation and procurement of infrastructure across the nation.

Infrastructure Australia completed an audit of Australia's transport, water, energy and communications infrastructure in 2008 to determine where the greatest infrastructure challenges lay. From this, it created an initial 'Infrastructure Priority List' to guide reform initiatives and investment in nationally important infrastructure.

One of the early priorities for the new organisation was the development of national Public-Private Partnership guidelines for infrastructure projects, in conjunction with the States and Territories. Infrastructure Australia published National Public-Private Partnership Guidelines in November 2008.

4.1.4 Policy Action: Ensure Regulation Stability

The regulatory environment for infrastructure initiatives should also be stable, helping to cement the credibility of the government and the trust of institutional investors in the government's commitment to pre-set rules.

Governments have to set up also better predictable regulations, especially for the sectors which depend heavily on regulation (e.g. such as energy and utilities). In light of recent setbacks in Spain (where tariffs for solar were changed[30]) Poland and Slovakia (where road projects were cancelled) there is a need to re-build confidence with investors. Government changes in regulation in fact are perceived by investors as breaches of confidence likely to reduce future investment to their countries. At the same time these changes could increase the perceived regulatory risk for other sectors such as regulated industries and banks, ultimately increasing sovereign risk

Objective: ***Structure projects as attractive investment opportunities for pension funds providing appropriate investment incentives and risk transfer opportunities***

1.5 Policy Action: Appropriate transfer of risk (e.g. through new financial instruments)

1.6 Policy Action Establishing Equity Funds to finance Infrastructure projects (e.g. Marguerite Fund)

1.7 Policy Action Development of Debt Capital Markets to finance infrastructure

4.1.5 Policy Action: Appropriate transfer of risk (e.g. through new financial instruments)

Governments should seek to better understand the investment needs and requirements of institutional investors and assess the scope for promoting the "right" investment opportunities. For instance, a common problem appears to be a mismatch between the desired risk/return profiles and investment horizon of pension funds when investing in infrastructure and the opportunities offered in the market.

Pension funds are buy and hold investors and their main focus is on long term income rather than capital accumulation. Infrastructure investments are expected to produce predictable and stable cash flows over the long term, improving the diversification of the portfolio and reducing its volatility. Infrastructure is often included in the inflation sensitive investments which tend to correlate closely with changes in inflation acting as a hedge against increases in the cost of future pension benefits.

Through appropriate financial incentives (for instance, tax incentives and feed-in tariffs) and risk transfer mechanisms (such as guarantees and first equity loss on investments), projects should be structured as attractive investment opportunities for investors.

In order to make a substantial impact on the infrastructure deficit, it is critical that increased pension fund investment is seen in green field assets. Greenfield investment however due to construction risk and a lack of operating history is seen by most investors as a higher risk than investing in existing assets. A key consideration for governments is where the changing risk allocation will attract greater pension funds investment in the greenfield investment.

[30] In December 2010, the Spanish government announced plans to retroactively cut pre-agreed "trade-in tariffs" for the country's solar-photovoltaic energy producers by 30 per cent, or €3bn ($3.9bn), over the next three years. Source Financial Times: Investors may walk after Spain's solar cut By Steve Johnson Published: January 9 2011

Risk transfer is at the heart of structuring a PPP project. The principle is that risks should be transferred to those best able to control them at the lower cost. Based on the risk transfer to the private sector included in a contract, PPPs can be classified in two main categories: usage and availability based[31].

Broadly speaking, the lower-risk revenues are those that are availability-based with long-term contracts; on the other end of the risk spectrum are situations that provide a new service, with patronage building up over a few years and where revenue is entirely based on user fees. The higher risk may mean there are fewer potential investors and those who are interested will seek a higher return for taking on that risk.

In recent years the availability of capital and strong competition among bidders allowed projects to be structured with an increased transfer of risks - particularly market risks, such as demand and refinancing risks - to the private sector. As a result, investors became reluctant to bid for projects which include a significant degree of market risk.

To attract institutional investment in infrastructure, governments have to provide risk return profiles matching the expectations of investors when considering this asset class. The availability payment model used in Australia's Peninsula Road Link or proposed in Poland's Eur 1.6 billion A2 road concession was considered the key feature attracting institutional investor interest in the projects.

However, in the current constrained fiscal environment, availability payments systems may not be a feasible option for many countries. Governments can mitigate some of the risks of usage based projects through financial instruments such as the US TIFIA or the European LGTT (see box 6 below). These instruments enable the transfer of demand risk inherent in transportation projects during the early years of operation (the initial "ramp-up" years after construction) thereby significantly improving the financial viability of the project and making the capital structure more robust

Examples of TIFIA assistance include the I-595 corridor roadway improvement in Florida (TIFIA loan of US$603 million), the Port of Miami Tunnel (TIFIA loan of US$341 million). A recent example of a TEN-T PPP project which used the LGTT instrument is A5 (Malsch-Offenburg) motorway in Germany.

Box 6. Examples of Good Practice

USA: The Transportation Infrastructure Finance and Innovation Act (TIFIA)

The program's fundamental goal is to leverage Federal funds by attracting substantial private and other non-Federal co-investment in critical improvements to the nation's surface transportation system.

TIFIA credit assistance is often available on more advantageous terms than in the financial market making it possible to obtain financing for needed projects when it might not otherwise be possible. TIFIA credit support has become an increasingly important component of US PPP financing strategies, partly in response to credit market conditions.

The TIFIA credit program offers three distinct types of financial assistance designed to address the varying requirements of projects throughout their life cycles:

- Secured (direct) loan - Offers flexible repayment terms and provides combined construction and permanent financing of capital costs. Maximum term of 35 years from substantial completion. Repayments can start up to

[31] Examples of PPP where usage risk is transferred to the private sector are facilities with concession model with user paid tolls, fares or usage fees such as roads, bridges, ports, airports. Availability based projects, typically in the accommodation, health education sectors, i.e. PFI, where payment is made for making a building available for use by the public sector.

five years after substantial completion to allow time for facility construction and ramp-up.

- Loan guarantee - Provides full-faith-and-credit guarantees by the Federal Government and guarantees a borrower's repayments to non-Federal lender. Loan repayments to lender must commence no later than five years after substantial completion of project.

- Standby line of credit - Represents a secondary source of funding in the form of a contingent Federal loan to supplement project revenues, if needed, during the first 10 years of project operations, available up to 10 years after substantial completion of project.

TIFIA credit assistance is limited to a maximum of 33 percent of the total eligible project costs. Senior debt must be rated investment grade. The project also must be supported in whole or in part from user charges or other non-Federal dedicated funding sources and be included in the state's transportation plan.

US$122 million has been authorized for each fiscal year from 2005 through 2009. This level of funding can support more than US$2 billion of average annual credit assistance.

Europe: Loan Guarantee for TEN-Transport (LGTT)

The LGTT was set up and developed jointly by the EIB and the European Commission with the aim to attract a larger private sector participation in the financing of revenue-risk TEN-T projects. The instrument enables the transfer of demand risk inherent in a concession-based PPP project during the early years of operation thereby significantly improving the financial viability of the project and making the capital structure more robust. By providing the guarantee the EIB is taking over this risk by potentially becoming a mezzanine lender to the project. The flexibility of the LGTT structure permits a tailoring of the product to fit the needs of the project. The product fits optimally with state-guaranteed senior debt and is an excellent element in mini-perm structures.

The EIB and the EC have committed capital of EUR 500 million each to enable LGTT of around EUR 5 billion to be issued until 2013. The EC contribution is made from the current TEN-T Budget while the EIB part is under the Structured Finance Facility (SFF) capital allocation.

The instrument was launched in 2008 and during its first full year of operation in 2009 it was used in three PPP road projects that reached financial close with a total guarantee amount of EUR 70 million.

4.1.6 Policy Action: Establishing equity funds to finance infrastructure projects

Equity funds formed by the public sector or as partnerships of public and private institutions could become important sources of risk sharing finance as well as organizational capacity and expertise in support of the financing of infrastructure projects.

The European Investment Bank, in partnership with a variety of public and private sector institutions, has in recent years invested in the establishment of a series of equity funds for infrastructure including Trans European Networks/PPPs across the EU.

The Marguerite Fund, established by the EIB and a number of partners[32], is designed to support equity investments in new (greenfield) infrastructure projects in the areas of transport (TEN-T), energy (TEN-E) and renewables[33]. Further to the anchor funds represented by major public institutions, the Marguerite fund is trying to raise additional capital from pension funds and insurance. This fund could be a model in the

[32] Core Sponsors are: Caisse des Dépôts et consignations; Cassa Depositi e Prestiti; European Investment Bank; Instituto de Crédito Oficial; KfW, PKO Bank Polsk.

[33] The target volume of the Fund is EUR 1.5 billion, of which over EUR 700m has already been committed during the initial closing in March 2010. In parallel to the equity commitment, the Core Sponsors and other institutions have also established a EUR 5 billion debt financing initiative.

future for other similar public and private funds: both at regional and national level for different infrastructure sectors. Challenges however are represented by the approach taken to combining market principles while still supporting public policy objectives.

4.1.7 Policy Action: Development of Debt Capital Markets to finance infrastructure

Governments have opportunities to unlock pension funds as a source of debt funding for infrastructure. Capital markets could be an important source of debt funding for mature infrastructure given the long-term, stable, essential and inflation linked nature of the cash flows. Pension funds are the natural buyers of long-dated inflation-linked assets to finance long-term capital expenditure to match their liabilities.

From the experiences in Latin America and United Kingdom important lessons could be drawn for other countries. This is of particular interest for emerging countries where quantitative restrictions limit pension funds investment in specific assets. Also in Europe, several initiatives targeting institutional investors, have been launched in the last months, to promote infrastructure investment via capital markets[34].

In the UK, the use of bonds to finance PPPs has been the dominant financing solution for large projects (>£200 million in capital value) since the launch of the UK's Private Finance Initiative in the 1990s. Bond financing has been less prevalent in other countries for a variety of reasons: lack of a deep capital market, resulting in illiquidity in bond markets; lack of a large private pension system, resulting in insufficient demand for bonds; a strong local banking market willing to maintain market share through aggressive pricing and terms; and insufficient knowledge of the bond market on the part of both the public sector and private sponsors leading to the perception that the bond execution is "difficult"[35].

Many bond investors will not purchase a bond issue below investment grade and given that much of the infrastructure bond market, in particular for the PPP and concessions sectors is of low investment grade[36], in the past monoline guarantees were used to provide credit enhancement to infrastructure projects.

There is general agreement amongst market participants that the greater availability of subordinated debt tranches could enhance the credit of projects or portfolios. The size of this tranche would depend on the risk profile of the project/portfolio as the purpose is to uplift the credit profile of the higher ranking senior debt financing, which establishes a range within which certain institutional investors would be interested in investing in the sector.

Specific actions to promote capital market solutions include:

- Government/multilaterals to provide subordinated debt to change the risk profile of infrastructure projects and raise the underlying rating (e.g. EU project bonds)
- by increasing institutional investor appetite for infrastructure bonds through tax incentives (e.g. Build America Bonds)

[34] For example the European Investment Bank and the European Union have recently launched the 2020 Project Bond Initiative

[35] Source EPEC (2010)

[36] By contrast, the regulated asset base that underpins the UK water utility bond issuance helps to secure a better underlying credit rating, between BBB– and A.

4.2 The Investor Capability

Objective: Create the necessary preconditions for the development of institutional investors

2.1 Policy Action: Governments need to establish the appropriate regulatory, supervisory and tax frameworks for institutional investors to develop

2.1 Policy Action: Governments need to establish the appropriate regulatory, supervisory and tax frameworks for institutional investors to develop

The growing clout of institutional investors has brought a transformational change in financial systems. Traditionally, these investors – and, in particular, pension funds, life insurers and mutual funds that operate in retirement savings systems - have been seen as sources of long-term capital with investment portfolios built around the two main asset classes (bonds and equities) and an investment horizon tied to the often long-term nature of their liabilities. The exemplary case are pension funds, which start collecting contributions when individuals enter the workforce and only start paying benefits with the assets accumulated thirty to forty years later.

Institutional investors also reduce reliance on the banking system, acting as shock absorbers at times of financial distress. The growth of these institutions has also contributed to the development of capital markets, providing financing to companies and governments and helping to develop mechanisms for corporate control and risk management. At the same time, individual investors have been able to pool their savings in products where investment risks can be diversified and insurance products that protect them from a variety of life related and property risks.[37]

In some OECD countries and most emerging economies, institutional investors are still relatively underdeveloped. Governments need to establish the appropriate regulatory, supervisory and tax frameworks for such investors to develop. Diversification of wealth holding away from bank deposits will help foster competition and financial innovation. When designing new retirement savings systems or promoting insurance markets, policymakers should also ensure that the initial conditions are set to allow long-term investment to develop.

One of the priorities for emerging countries is to create a financial system that can provide the finance needed for its development, and especially for infrastructure development. Among the biggest challenges in the infrastructure sector is the absence of long term financing which could fund large scale projects. International experience in countries such as Mexico and Chile suggests that institutional investors and in particular pension funds assets have been instrumental to the growth of the corporate bond market, and, in turn, to the provision of development finance.

Many countries around the world are partly prefunding their otherwise pay-as-you-go (PAYG) financed social security systems by establishing or further developing existing public pension reserve funds (PPRFs). This trend is parallel to the growing shift towards fully-funded, privately managed pension systems, which has in turn heightened the role of pension funds in retirement income arrangements. The OECD supports the development of funded pensions as an important source of retirement income within an overall, balanced pension system.

[37] For a more detailed discussion of the benefits of long-term investing see "*The Future of Long-term Investing*", World Economic Forum, 2011.

Objective: Better Pension Fund Governance

2.2 Policy Action: Improve trustee composition and knowledge

2.2 Policy action: Improve trustee composition and knowledge [38]

Informed, knowledgeable investors are the basis for good governance and a proper alignment of incentives. Raising the bar of governance among institutions such as pension funds is essential to create the right incentives among asset managers to better look after the long-term interest of beneficiaries.

Investing in less liquid, longer term asset such as infrastructure calls for specific skills and appropriate staff in place at all levels – from fund managers to trustees. Although investors often use specialist consultants, they still require a good understanding of the products in which they invest and an effective system to monitor the strategies and activities of their asset managers.

This is even more the case if investors want to follow the direct investment route (or invest in new-build projects). Relevant international guidance in this regard include the OECD Guidelines for Pension Fund Governance.

The governance of private pension plans and funds involves the managerial control of the organizations and how they are regulated, including the accountability of management and how they are supervised. Several studies demonstrated that the quality of pension fund governance has an impact on pension fund performance. Over the longer term, well-governed funds are expected to generate higher returns (adjusted for risk and expenses) than poorly governed funds[39].

The starting point for understanding differences in the quality of pension fund governance across countries lies in the governing body or board. Depending on the legal form of the fund and the regulation in place the governing body may be internal or external to the pension fund, it may have a single or dualboard structure and may delegate certain functions to professionals.

The fact that trustees are not professionals has led to concerns that trustees may lack the understanding to judge advice they receive from experts. This problem of board competency results directly from the often-deficient methods through which trustees are elected/selected for pension boards[40].

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[38] For further reference see: Stewart, F. and J. Yermo (2008), "Pension Fund Governance: Challenges and Potential Solutions", OECD Working Papers on Insurance and Private Pensions

[39] For example, in a recent study, Ambachtsheer et al. (2006) show how good governance and good performance are linked. Using pension funds based in Australia, New Zealand, Canada, the United States and Europe, their analysis is based on pension fund executives‘ own opinions of how well their governance is working as a proxy for good governance, with pension fund returns over a passive asset benchmark taken as a performance proxy. They conclude that ―the _poor-good‘ governance gap, as assessed by pension fund CEOs (or equivalents) themselves, has been _worth‘ as much as 1-2% of additional return perannum . Yermo, Stewart OECD (2008) think this is probably an underestimation.

[40] Clark (2007) notes a growing tension between representation and expertise in several fields, using UK pension fund governance and the USA mutual fund industries as examples. The evidence suggests that very few trustees have the competence and consistency of judgment to challenge the experts who are responsible for executing complex financial decisions. There is a clear association between trustee boards‘ understanding across key topics and their confidence levels in managing their schemes.

The board competency issue is often also the source of problems in the 'investment beliefs/risk management' area, raising questions over the contribution of member representatives to decision making on some complex matter relating to the pension fund orientation. For example, member representatives may not have the necessary knowledge and understanding of investment matters and may not feel comfortable challenging investment advisors or the plan sponsor's senior executives sitting on the board.

The board competency problem is clear for infrastructure investment given that most trustees have not gained any experience with the asset class. Investing in something new could expose pension fund boards, more than following traditional asset allocations. This situation makes trustees more reliant on the advice of consultants which often do not have a specific background or expertise in infrastructure sector.

Improving governance remains a challenging task for pension funds and their regulators around the world. While recent regulatory and industry initiatives have improved the situation, there are still many cases of underperformance driven by bad governance practices. Some of the more serious cases of governance failures could be solved through a more balanced representation of stakeholders in the governing body, higher levels of expertise - which may be achieved via training as well greater use of independent, professional trustees.

Objective: ***Foster collaborative strategies and resource pooling***

2.3 Policy Action: Support consolidation of smaller funds, pooling of funds

2.3 Policy Action: Support consolidation of smaller funds, promote pooling of funds

Small institutional investors are generally at the mercy of consultants and asset managers and have limited capability to control detailed aspects of their asset managers' activities. They are also more likely to use a fund of funds or listed fund route to invest in alternatives, rather than invest directly in unlisted, long-term assets where more effective control over the underlying investment can be exercised. As reflected in the OECD Core Principles of Corporate Governance (Principle II.G), regulators can encourage collaboration among institutional investors, outright mergers and other forms of resource pooling in order to create institutions of sufficient scale that can implement a broader investment strategy and more effective risk management systems that take into account long-term risks.

Looking at infrastructure investment in particular, it appears that the most active investors in infrastructure are also the largest funds. In fact larger pension funds have the resources to establish fully developed governance structures, supporting the development of internal expertise, hence to build the capability to invest directly in infrastructure assets. Also direct investments in infrastructure require a relatively large equity contribution often outside the capacity of small fund. The scale of such funds allows them to invest in this sector and still maintain the liquidity necessary to meet the necessary prudential requirements.

Consolidation of the pension fund industry (e.g. the Netherlands, Australia) resulting in growth of the average size of funds will support the contribution to the development of larger projects. However in many countries the average size is still relatively small, preventing investment in infrastructure. For example in the United Kingdom there are approximately 2500 pension funds of which approx 1000 are managing funds of less the UKGBP 5 million; only 190 are managing funds of more than UK GBP 1 billion

A number of pension plans have expressed interest in pooling their financial and internal resources to invest jointly in infrastructure projects and assets. There are also initiatives of partnering with other funds

with more expertise (i.e. Canadian and Australian pension funds) on a deal by deal basis. Besides acquiring the expertise to invest in infrastructure rationale for pooling funds together is dictated by:

- better alignment of interest with other pension funds with like minded investment horizon
- lower fees
- "bigger say at the table" (i.e. better control of the characteristics of the investment)
- get scale for larger projects
- larger commitments
- local knowledge
- spreading of risk

However it should be noted that pooled vehicles could face a series of challenges which need to be overcome. Pension plans have often different strategies based on differences in strategic orientations, diversification targets, and exposure limits. Other potential challenges could result from issues such as governance, fees, compensation of investment professionals, etc.

Box 7. Examples of good practices

Recent initiatives include:

Global Strategic Investment Alliance ("GSIA") -OMERS

The Global Strategic Investment Alliance ("GSIA") being promoted by the Canadian pension fund OMERS, aims to raise in the next five years a $20 billion private equity style fund that may charge a commitment fee upfront of approx. 50bp and a carried interest fee for performance at a later date, having OMERS managing the assets once they are acquired.

OMERS would contribute one-fourth or $5 billion of the overall total. It is hoping to get $5 billion of participation from US pensions, another $5 billion from Europe and a final $5 billion from big pension funds in the rest of the world.

As explained by Michael Nobrega OMERS Chief Executive, advantages of the initiatives are: "It gives us critical mass… .. so this give us an opportunity to have clout. To (the third party) they get access to those products. We also get a fee income but we don't look at that as a major item. The main advantage to us is to get the size so we can access those products"[41]

Pension Consulting Alliance

In August 2009, Pension Consulting Alliance, acting on behalf of certain US public pension plan and institutional clients, issued a Request for Information to identify qualified investment management organizations to provide infrastructure investment services. The size of the investment pool is estimated to range from $1 billion to $2 billion and the number of public pension plan investors is undetermined at this time.

Partnerships USA

One further idea being promoted is the creation of a body to help public pension plans invest directly in infrastructure deals. This model called Partnerships USA allows pension plans to get around the problem inherent in investing in infrastructure funds that have a lifespan shorter than the asset they are buying and fees that do not match their return profiles.

[41] Global Pensions April 2010

New Jersey

As of April 2009 New Jersey was considering forming a direct investment pool dedicated to infrastructure along with other pension plans including several institutions of the New York City Retirement Systems. As a means to reduce risk the pool will likely be managed by an external infrastructure manager.

Objective: Better alignment of interests between pension funds and the infrastructure industry

2.4 Policy Action: Regulatory frameworks and OECD guidelines to favour transparency in business models and alignment of interest between general partners managing infrastructure funds, investors and the public sector

2.4 Policy Action: Regulatory frameworks and OECD guidelines to favour transparency in business models and alignment of interest between general partners managing infrastructure funds, investors and the public sector

The most common vehicles for infrastructure investing are infrastructure funds, which are often structured as private equity vehicles[42]. The appropriateness of the private equity model to the infrastructure sector has been questioned by many[43]. Long-term investors such as pension funds want to be sure their partners are like-minded investors, focused on the long-term rather than merely being interested in short-term transaction fees or construction profits. This problem of alignment of interest led to the recent trend of the largest pension funds investing directly in infrastructure by-passing infrastructure funds.

Where possible, pension funds should build in house expertise to strengthen internal capabilities. However the majority of the investors are not able to attract the right skills. Hence, managers and advisers will continue to provide support for investment by small funds or funds with insufficient scale or skills to support direct investment. The debate on the right model of private equity fund is still open.

The main areas that need to be addressed are:

- Fees: according to many, the level of fees currently paid by investors is too high, both direct fund fees and indirect hidden fees paid by the portfolio company to the manager.

- Structure of infrastructure fund: recent events have highlighted the need for diversification in an infrastructure allocation. *Infrastructure funds are often very concentrated* – whether in the number of projects, geography, drivers of returns or a combination of all three. A structure that provides diversification across manager, geography, return driver and vintage year is vitally important.

[42] The majority of unlisted infrastructure funds have traditional closed-end private equity type fund structures with General Partners (GPs) as fund managers and Limited Partners (LPs) committing capital to the fund. The partnership has a 10-12 year life span and fee levels are quite similar to private equity level i.e. 2% management and a success fee of 20% , a carried interest over a hurdle rate of 8%

[43] Without the same availability of debt seen in the past, according to some this model could be sustainable in the future. In fact, regulated infrastructure assets do not typically lend themselves to operational turnaround or financial restructuring within the three-to-five-year investment period typically adopted by private equity funds

- Investment horizons: Pension funds often find the lifespan of the infrastructure vehicle offered too short for their needs. There is a maturity mismatch between the typical length of private equity-type of funds (typically 10 years) with the liabilities of pension plans (often much longer). Trustees do not like the idea of selling assets that they might have bought for a long-term, steady, inflation-linked income stream. Providers prefer to realize investments and set up successor funds.

The financial crisis-led changes to the infrastructure market will likely foster a much closer alignment between the infrastructure industry and investors in terms of appropriate risk allocation and will support a closer relationship in the future to their mutual benefit. These changes will likely support reforms which more naturally suit the conservative nature of pension funds.

Regulatory frameworks and guidelines promoted by OECD could provide the right incentives for fund managers and investors to favour transparency in business models and alignment of interest between general partners managing infrastructure funds, investors and the public sector. These incentives should focus on asset preservation and development including profit sharing schemes to promote alignment.

Objective: Adjust the prudential regulatory framework towards long term investment

2.5 Policy Action: Reform of funding regulation for Defined Benefit scheme to make them more counter-cyclical in nature, maintain DB systems for the long-term and provide greater member security

2.6 Policy Action: Change in pension accounting rules

2.7 Policy Action: Ease quantitative investment restrictions

2.5 Policy Action: Reform of funding regulation for Defined Benefit scheme to make them more counter-cyclical in nature, maintain DB systems for the long-term and provide greater member security44

The 2008 financial crisis had a major impact on global pension assets, with the OECD estimating declines of $5.4tn (over 20%) at the end of 2008. About 60% of OECD pension assets are in defined benefit and other plans which offer return or benefit guarantees. While markets partly recovered during 2009, funding levels of defined benefit plans remain very low in some OECD countries[45]

Procyclicality can also affect investment strategies. When equity prices boom, pension funds may not always rebalance their portfolio, leading to growing equity allocations in portfolios. During the downturn, on the other hand, pension funds may sell some of their equities, crystallizing any losses and driving markets down further.

Three essential goals of pension plan funding are the long-term viability, stability and security of member benefits. Reform of funding regulations for defined benefit (DB) pension schemes to make them more counter-cyclical in nature can help achieve these goals as well as make DB schemes more attractive to plan sponsors that are increasingly moving away from DB towards defined contribution (DC) plans. If designed properly, funding regulations could help maintain DB systems for the long-term and provide greater member security. Broadly speaking, DB funding regulations should:

[44] See for further reference; Yermo, J. and C. Severinson (2010), "The Impact of the Financial Crisis on Defined Benefit Plans and the Need for Counter-Cyclical Funding Regulations", *OECD Working Papers on Finance, Insurance and Private Pensions*,

[45] OECD Pension Markets in Focus – July 2010 Issue 7

- encourage deficit reduction contributions and appropriate build up of surplus when plan sponsor finances are strong;
- help maintain predictable costs and dampen volatility; and,
- give plan sponsors more control to manage risks and costs

2.6 Policy Action: Change in pension accounting rules

Recent changes in both pension regulatory frameworks and accounting rules in the OECD area (e.g. the Pension Protection Act of 2006, the accounting standards for DB obligations under US GAAP and IAS19) have put increasing pressure to reduce funding gaps in DB plans. Earnings volatility associated with fair value accounting may encourage more pro-cyclical market activity.

The disclosure to plan stakeholders of assets and liabilities based on current market prices may be appropriate in order to increase transparency and to show the potential shortfall (or excess, as the case may be) of funding in case of plan termination or bankruptcy of the plan sponsor. However, reflecting day-to-day market fluctuations in determining the annual contribution requirements of a pension plan to too great of an extent is counter-productive in maintaining the three important goals of pension plan funding: long-term viability, stability and security.

Accounting standards based on market valuation principles generate volatility in sponsor's balance sheet and income statements. In particular, the removal of the smoothing options currently permitted by international accounting standards would cause the sponsor to inject extra contributions into the plan during a slump in the bad state of the world economy and would not necessarily encourage the sponsor to build-up additional funding buffer in the good time. In addition, it could have an adverse impact on DB pension provisions, the application of efficient risk management strategies and could potentially lead to pro-cyclical behaviour by pension plans[46].

2.7 Policy action: Ease quantitative investment restrictions

In general, Anglo-Saxon countries adopt the prudent person rule (PPR) in pension fund investment which requires only that funds be invested "prudently" rather than limited according to category. Furthermore, there are few restrictions on investment in specific assets. In many other countries, however, different quantitative restrictions have traditionally been applied, normally stipulating upper limits on investment in specific asset classes, including equity.

The development of an appropriate regulatory and supervisory regime is also essential but may be a complex task for some developing countries. The investment rules in place in some Latin American countries, for example, have been designed in such a way which has not been conducive to growth in the local stock market as pension funds are forced to invest largely in government bonds. While quantitative investment restrictions may be necessary in the early years of a new system, it is important that such rules are gradually relaxed over time in order to benefit from the diversification of investments and their positive impact on the domestic economy. Countries intending to establish funded pension systems should consider reviewing the OECD's and International Organisation of Pension Supervisors (IOPS)[47] respective principles on the regulation and supervision of private pensions.

[46] "How the Financial Crisis Affects Pensions and Insurance and Why the Impacts Matter" Gregorio Impavido and Ian Tower, IMF Working Paper July 2009

[47] See www.iopsweb.org

4.3 The Conditions For Investment

Objective: Enhance the Investment Environment:

3.1 Policy Action: More transparency on the infrastructure asset class through independent data collection and common performance measures (e.g. OECD to seek better understanding of institutional investors flows into infrastructure)

3.2 Policy Action: Governments to play an educational role with universities or other institutions to provide the right expertise to investors (e.g. OECD to disseminate good practices and case studies)

3.3 Policy Action: Ensure a level playing field for investors

3.1 Policy Action: More transparency on the infrastructure asset class through independent data collection and common performance measures

Pension funds perceive a shortage of objective information and quality data. This makes difficult to assess the risk in infrastructure transactions and understand the correlation with other sectors, especially for new investors less familiar with the characteristics of the investment.

Historical data is scarce and often proprietary, hence not publicly available. Infrastructure projects are often different from another and dependant on the regulatory framework or concession agreement. This is also why there is not an agreed benchmark for the sector against which to evaluate the performance of infrastructure investments.

Only limited empirical analysis has been done to assess the risk-adjusted performance and portfolio diversification benefits of listed infrastructure in a portfolio, with only a few studies on unlisted infrastructure performance in the Australian context[48].

One way in which governments can help make progress in this area is by strengthening formal mandatory requirements to provide information and data on certain key activities. Generally speaking, private and public actors will only collect and publish fundamental data on their activities if they are obliged to do so. Hence, authorities must devise a clear set of rules and requirements governing the collection and disclosure of information.

As interest in infrastructure grows and the asset class matures, a third party organization should create a database for the returns and standardize how performance is measured and reported. Specific Actions recommended (see OECD Inderst – Pension Fund Investment in Infrastructure 2009):

- support stronger efforts in independent data collection and objective information provision in the field of infrastructure investment (e.g. the OECD to collect data)
- upgrade of national and supra-national statistical data collection with a view to better capture infrastructure (and other alternative asset classes)

[48] See Bitsch F., Buchner A., Kaserer C. (2010) or in the Australian context Newell G. and Peng, H.W. (2007). Preqin is tracking the performance of individual infrastructure funds., but that database remains at this point sparsely populated, mostly by funds that remain at a very early stage of implementation. No source comparable to Venture Economics, Cambridge Associates, or NCREIF providing comparisons infrastructure funds has yet developed.

- establishment of international guidelines for performance and risk measurement of infrastructure (and other alternative) investments

- encourage the study of more advanced risk analysis beyond the traditional measures, including the specific risks of infrastructure.

3.2 Policy Action: Governments, OECD to play an educational role with universities or other institutions to provide the right expertise to investors

Infrastructure investment is complex and requires proper understanding and management. Although often considered as one of the alternative investment options, it has specific characteristics. After the financial crisis, there is increased recognition among investors of the need to have the appropriate staff in place to manage infrastructure investments. In fact a number of pension funds have been hiring (or intend to hire) investment professionals with infrastructure expertise giving greater value to track record and longer expertise in the sector.

Following the demise of the monolines the loss of expertise on which pension funds were relying futher exarcebated the problem. In fact many institutional investors have relied on the monoline insurers to conduct due diligence and to structure project financing as well as to monitor and administer their investments in the infrastructure sector.

There is a need to grow the local base of financial professionals with an infrastructure expertise. For pension funds it is often the case that their location is not in the main financial centres. If the investors are not located in the main financial centres it may be difficult to find the right financial professional. In the long term it is therefore essential to foster the development of new university curricula for engineering students which cover for instance non-traditional issues such as infrastructure and climate adaptation, sustainable infrastructures, financing and demand management strategies.

International institutions such as the OECD can play an educational role with universities and research centres, disseminating good practices and case studies.

3.3 Policy Action: Ensure a level playing field for investors

At the international level, governments can do much to improve competitive conditions by ensuring a more level playing field for investors bidding for infrastructure contracts. Going beyond national borders to attract international investment for major infrastructure works can generate considerable benefits in the form of more vigorous competition for contracts, fresh sources of capital, skills and experience, and innovative work practices.

For the policy makers involved, however, the challenges are considerable. This has much to do with the nature of the projects themselves. Infrastructures tend to be highly complex in their planning, design and delivery; they have long economic lives, and more often than not find themselves at the interface between public and private interest; and bringing in international investors may add a further layer of complicated business relations.

In such cases, clear principles and guidelines on the full and proper participation of international investors in infrastructure projects can facilitate the policy makers' role significantly. Among the key principles set out in the"OECD Principles for Private Sector Participation in Infrastructure"[49] are:

[49] OECD (2007), Policy Action of the Council on Principles for Private Sector Participation in Infrastructure, C(2007)23/FINAL, OECD, Paris.

There should be full disclosure of all project-relevant information between public authorities and the private investors, including the state of pre-existing infrastructure, performance standards and penalties in the case of non-compliance. The principle of due diligence must be upheld.

The awarding of infrastructure contracts or concessions should be designed to guarantee procedural fairness, non-discrimination and transparency.

In addition, there are other OECD instruments and guidelines which have an important role in shaping the international rules of infrastructure investment[50]

Objective: Dialogue among parties

3.4 Policy Action: Association of infrastructure investors able to bring forward institutional investors interests

3.5 Policy Action: Create a platform for dialogue between investors, financial industry and governments (e.g. the OECD to engage policymakers and investors to facilitate infrastructure investment)

3.4 Policy Action: Association of infrastructure investors able to bring forward institutional investors interests

Pension funds need to acquire more visibility and pro-actively participate in the infrastructure market. There is a lack of visibility of investors at political level and no common approach among pension funds towards infrastructure investment. Pensions can do more to understand and shape the infrastructure debate.

The infrastructure industry should be more politically engaged to promote private capital involvement and to drive forward the PPP agenda. An association of infrastructure investors would be able to bring forward institutional investors interests in areas like regulation.

Recently some investors have been involved in initiatives going in this direction. A number of pension plans have expressed interest in pooling their financial and internal resources to invest jointly in infrastructure projects and assets. Also Europe's four leading public financial institutions recently presented proposals to the European Commission in relation to the reform package of the Basel Committee on capital and liquidity requirements (Basel III) and the new IFRS standard for reporting on financial instruments[51].

3.5 Policy Action: Create a platform for dialogue between investors, financial industry and governments (e.g. the OECD)

Infrastructure projects entail complex processes with many parties involved, governments, investors, infrastructure industry. A clear understanding among all stakeholders is essential to guarantee the success of the projects.

[50] These OECD instruments and guidelines include the OECD Policy Framework for Investment (2006), the OECD Codes of Liberalisation of Capital Movements and Current Invisible Operations, the OECD Declaration on International Investment and Multinational Enterprises and the OECD Guidelines for Multinational Enterprises

[51] "Conclusions of the European long-term financial institutions' working group on banking supervision", the European Investment Bank, Caisse des Depots, Cassa Depositi e Prestiti and KfW Bankengruppe, September 2010

Informing and communicating with stakeholders, and particularly those contributing to the financing and funding of infrastructure projects, is crucial if they are to buy into the policy objectives. In particular, recent years have seen on-line communication and dialogue with stakeholders and the general public grow in importance and effectiveness.

A platform for discussion represented by a neutral body such as the OECD is needed to win the trust of the many participants in the public and private sectors. Such a platform would improve the accessibility of the infrastructure sector, by promoting greater transparency, accessibility, professionalism and standards of best practice.

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