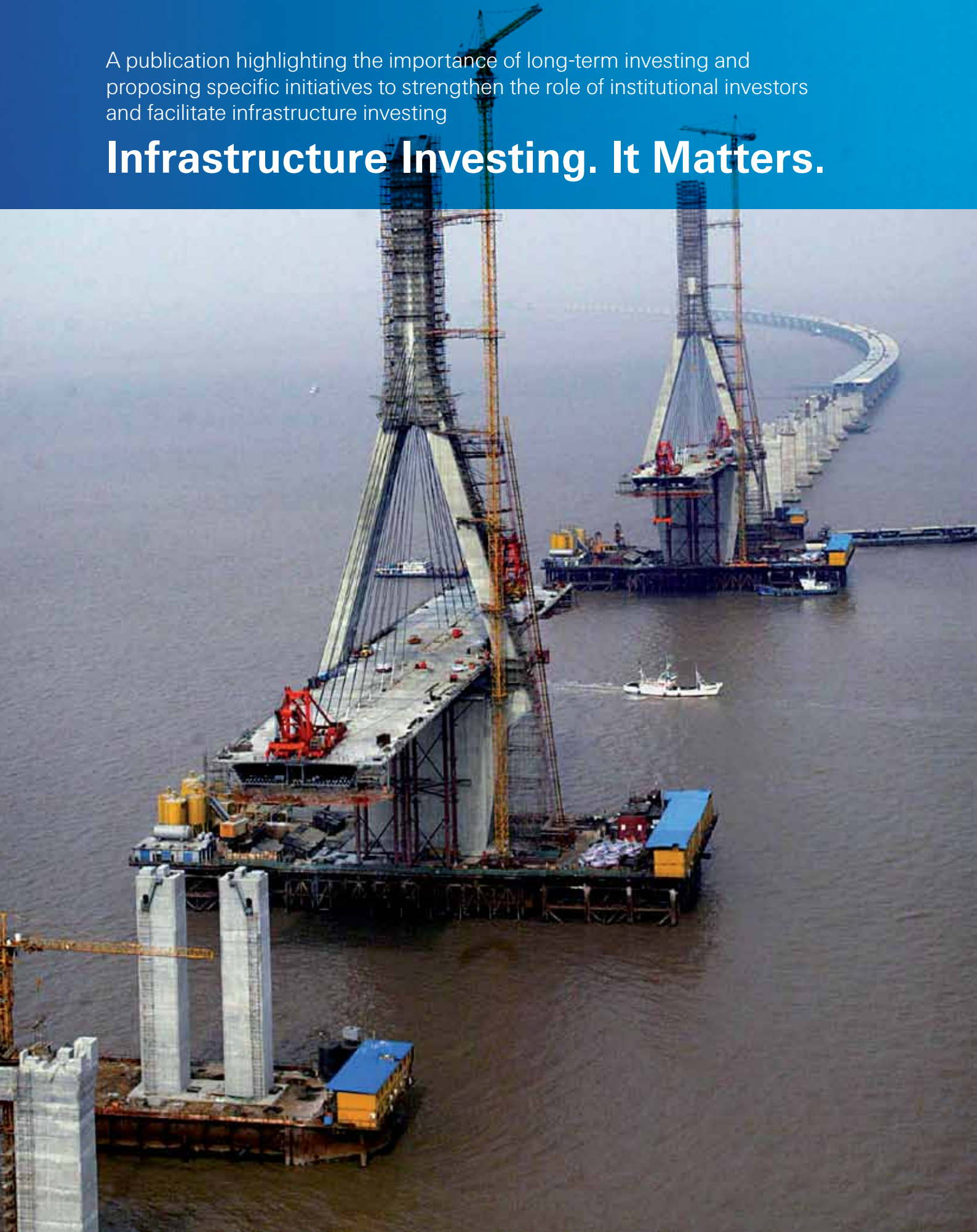
Swiss Re

IIF Institute of International Finance

A publication highlighting the importance of long-term investing and proposing specific initiatives to strengthen the role of institutional investors and facilitate infrastructure investing

Infrastructure Investing. It Matters.



The global economy benefits from infrastructure investment as a driver of growth. Institutional investors get much-needed investment opportunities. Long-term investment acts as a financial market stabiliser.

Despite these benefits, the creation of a widely recognised and well-functioning infrastructure asset class – supported by an efficiently functioning marketplace – has been slow in coming.

With the importance of long-term investment increasingly in focus, let us take full advantage of this opportunity to begin building a robust infrastructure debt market.

Infrastructure investing. It matters. The projected need for infrastructure over the next several decades is enormous. The global annual infrastructure spending requirements are estimated to increase from USD 2.6trn to around USD 4trn by 2030. The funding for this type of investment is crucial for growth. For a second consecutive year, long-term investing ranks high on the G20 agenda. During 2013, there were a number of public consultations, both by international financial organisations and at a more regional level. The next few years offer a tremendous window of opportunity to realize many of these initiatives.

The benefits of long-term investors as providers of risk capital and financial markets "stabilisers" for the real economy are well recognised. Now, it is time to turn words into action. Swiss Re and the Institute of International Finance (IIF)'s Council for Asset and Investment Management (CAIM) are pleased to present a report on why long-term investing matters, as well as potential impediments to this vital source of funding and how these could be removed.

The IIF CAIM, chaired by Swiss Re, is mandated to analyse and address issues and challenges for long-term investing and asset allocation arising from both market dynamics and regulatory reforms. Its members, with some USD 20 trillion in assets under management, are representative of the broader investment community.

While long-term investment is now in the spotlight, it should not be assumed that long-term investors simply buy assets to hold to maturity. Both retail and institutional investors need the ability to make adjustments to their portfolios as needed – including to their longer-term investments. At the same time, against the backdrop of highly indebted mature-market governments and ongoing bank deleveraging, more diversity in sources of funding for the real economy is essential. Particularly in Europe, but also in emerging markets, there is too little reliance on private capital markets. Long-term investors' role in supporting global growth should be strengthened and more private capital market solutions provided.

This joint report recommends a specific set of actions to address existing impediments to long-term investment. A proposal for private-public partnership is put forward, with the goal of supporting the establishment of infrastructure as an asset class.

This report is meant to help spur discussion and, more importantly, action; the proposals do not necessarily represent the views of every CAIM member. The biggest risk now would be failure to take advantage of today's window of opportunity. At stake is not only meeting the infrastructure investment needs of tomorrow, but raising the economy's potential growth rate and supporting job creation. Without a doubt, the journey ahead of us is still significant, but so are its potential benefits.

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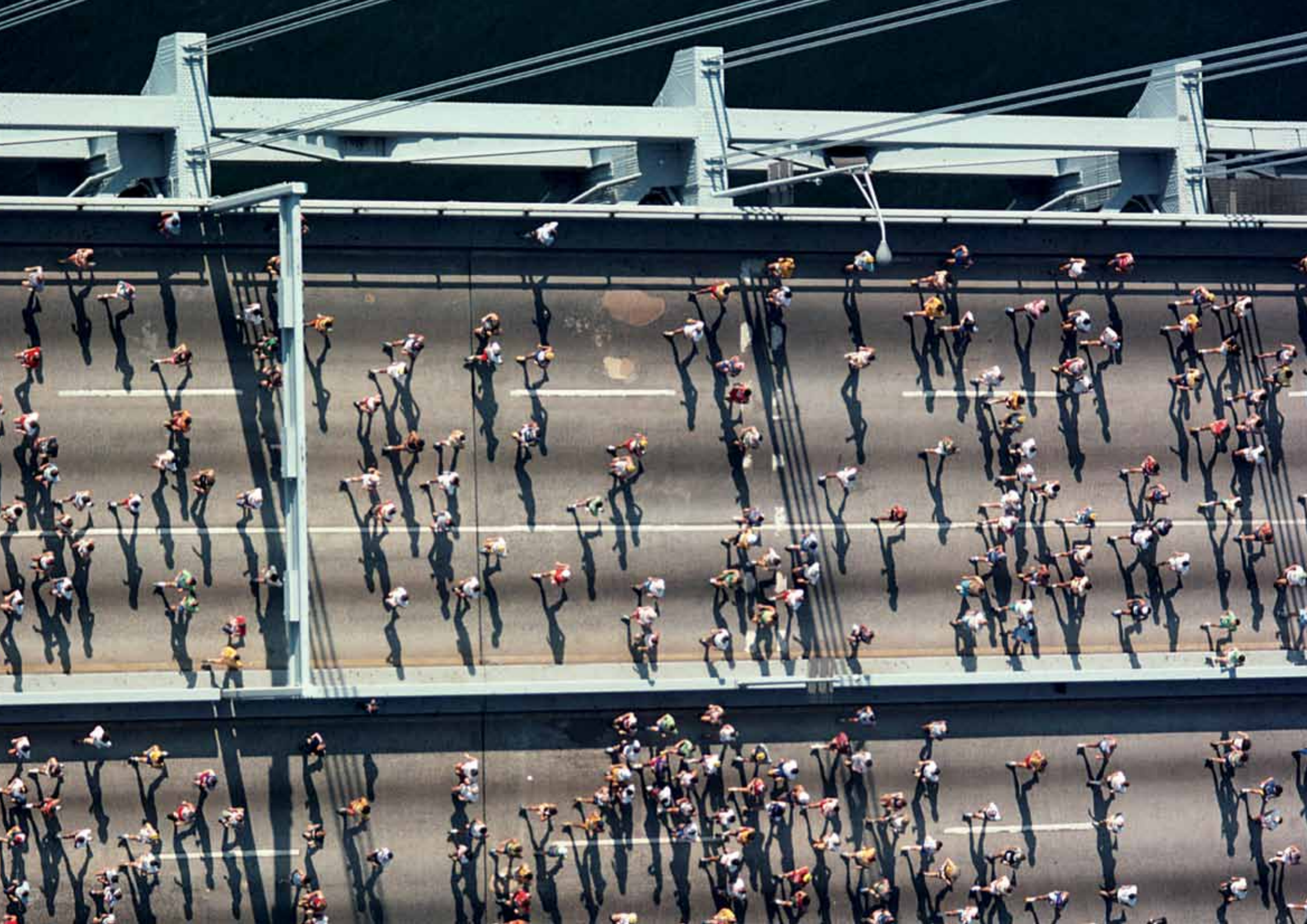


1. Long-term investing – Why it matters

Key messages

- Long-term investments (LTI) are typically investments with an asset life spanning 25 to 60 years - generally falling into the category of infrastructure.
- Annual infrastructure spending amounts to around USD 2.6 trillion and is estimated to grow to roughly USD 4 trillion by 2030.
- Infrastructure investment is positive for economic growth and lowers firms' production costs. Efficient and deep financial markets have a positive impact on the stability of infrastructure investment.

1.1. Definition of long-term investments

According to the EC Green Paper on long-term financing of the European economy[1], "long-term financing can be considered as the process by which the financial system provides the funding to pay for investments that stretch over an extended time period". The G30[2] describes LTI as "spending on the tangible and intangible assets that can expand the productive capacity of an economy".

Throughout this publication, we view long-term investors as those able to hold assets over a long period of time. Moreover, long-term investors have incentives to commit long-term capital based on the long-term nature of their business model. This doesn't mean that we should assume long-term investors hold their assets under all circumstances. Portfolio changes must be possible should the institutional investor' risk appetite change. The following institutions are traditionally viewed as fulfilling the definition of long-term investors: Pension funds, insurance companies, mutual funds, sovereign wealth funds, endowments and foundations. Collectively, they hold over USD 70 trn in assets under management in the OECD countries (see chapter 4.2.)

The need of long-term investors for longer dated assets – while maintaining flexibility in its portfolio, not holding the assets at any cost – is not inconsistent. Regulatory requirements for insurance companies and pensions funds (eg) to hold higher quality credit assets in the portfolio is one reason (though not the only one) why an institutional investor needs the ability to modify the portfolio composition. The external environment can change quickly as we have seen with the global financial crisis. The ability to adapt an asset allocation is key; this also for longer-term investors that have the ability to hold assets over a longer period. As noted in this publication, the attractiveness of infrastructure investments as a longer-term asset could increase significantly with the establishment of a well-functioning infrastructure asset class, supported by an efficient marketplace with secondary market trading, is created. To strengthen the benefits for the real economy of long-term investors there is thus much to gain from increasing the role of capital markets to enlarge the pool of investable longer-term assets. To this end, and as seen in section 2.4, there is a role for both policy and market action.

1.2. LTI in the OECD

We look at the relationship between long-term investment and economic growth, as well as between LTI and the different structures of financial systems. In doing so, we use a narrower definition of LTI, focusing on infrastructure investment.

On an economic level, we think of LTI as investments in physical capital with an asset life spanning 25 to 60 years[3]. This type of investment is recorded in the gross fixed capital formation section of the national accounts as non-residential structures such as constructions in buildings and bridges amongst others – generally known as infrastructure[4].

Infrastructure investment shares

In the OECD, an average of 7% of GDP was invested in non-residential structures (1995–2009, see Chart 1):

- Thereof, public investments[5] amounted to 1.4% of GDP, whereas 3.9% of GDP was spent on commercial and factory buildings, hospitals and schools (other private infrastructure)
- Another 1.7% of GDP was spent on privately owned roads, railways, communication networks, electricity, gas and water supply works (private core infrastructure)
- In the US, the Netherlands and Germany, the private core infrastructure investment share is less than 0.7% of annual GDP, compared to an OECD average of 1.7%

Current and future infrastructure investments:

- OECD infrastructure investments were around USD 2.6 trn in 2011, and we project an expansion to around USD 4trn by 2030[6]
- Over 60% of infrastructure investments in 2011 were designated to Western Europe and the United States. However, this share will probably decrease by 2030 with other economies growing at a faster pace

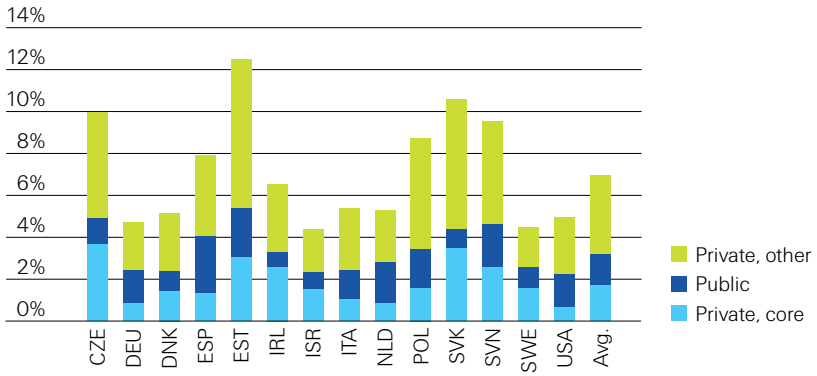
1 *Long-term financing of the European economy.* European Commission, 2013
2 *Long-term finance and economic growth.* G30, 2013
3 *Understanding national accounts,* OECD, 2006
4 Note: This definition differs from the one used to estimate the infrastructure financing gap in chapter 4
5 Including spending for defense and public administration buildings
6 This estimate differs from the figures outlined in chapter 4 based on i) the different definitions of infrastructure and ii) the focus here being on OECD countries only

When examining the composition of these investments, three main components by economic activity can be distinguished:

I. public investments: local and central government
II. private investments in core infrastructure: transport, communication and utilities
III. private investments in other infrastructure: mainly manufacturing, retail, health, education

Chart 1 illustrates the fraction of GDP that has been invested in non-residential structures, resulting in a significant accumulated infrastructure capital stock. Clearly, the maintenance of the infrastructure stock in advanced economies and the capital accumulation in developing countries both create large financing needs in the coming years and decades (see also chapter 4).

Chart 1:
OECD investment shares, % of GDP



Source: OECD; Swiss Re

1.3. Infrastructure investments and economic growth

Assessing the impact of infrastructure investments on economic growth, there are two primary channels through which LTI may play a pivotal role. First, infrastructure capital increases the production capacity of an economy. Second, it may also raise productivity. In theory, both effects will lead to higher GDP but the magnitude has been debated for a long time. That said, academic studies estimate that 10% more infrastructure capital will lead to 0.9% more output in the long run, which implies an economic return of 17% overall[7]. Furthermore, infrastructure investments also lower the production costs of manufacturing firms, in turn raising their productivity[8]. Some studies[9] indicate that core infrastructure (transport, communication and utilities) exhibits a higher impact on growth relative to a broader definition of public capital (including hospitals, educational buildings and other public buildings).

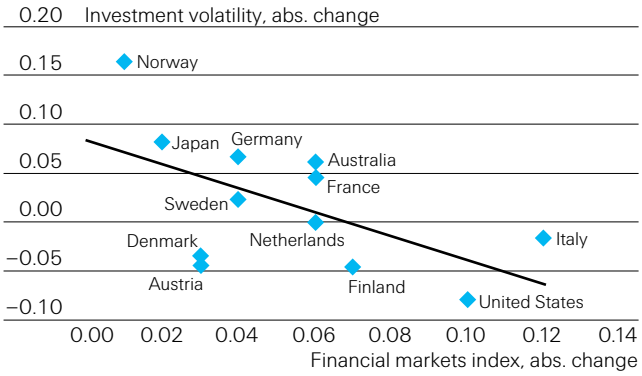
1.4. Infrastructure investments and financial systems

The structure of a financial system has a significant impact on household and firm behavior. In 2006, the IMF constructed a financial index that measures the state of a country's financial system along three dimensions: the relevance of traditional banking intermediation, the development of new financial intermediation, and the role of financial markets in 18 advanced economies[10]. In doing so, this index classifies a financial system depending on the degree to which transactions are based on direct (long-term) relationships between entities (e.g. a customer and a bank) or indirect (at "arm's length") where the entities depend solely on public information about their counterparty.[11]

[7] Bom and Ligthart, *CESifo working paper*, January 2008. Marginal product is defined as the output elasticity divided by the capital/output ratio
[8] Morrison and Schwartz, The American Economic Review, December 1996
[9] Hulten and Schwab, National Tax Journal, 1991; *Sturm and De Haan, Economic Modelling*, 1996
[10] *World Economic Outlook*, IMF, September 2006
[11] The index goes from 0 to 1 where i.e. Germany is classified as 0.4 (less "arm's length") and the US as 0.7 (more "arm's length")

Enhancing private capital market solutions would help to close the infrastructure funding gap as demonstrated by the interplay between the financial market system and provision of infrastructure investment. An "arm's length" systems, which operate under an "originate-to-distribute" model, is better geared to provide stable infrastructure financing. This can be seen in Chart 2, where infrastructure investment volatility is examined compared to whether the financial market system is more bank (relationship banking) or capital market based (at arm's length/originate-to-distribute). Comparing the change in the volatility of infrastructure investments between the 1980–1994 and 1995–2009 periods, a negative relationship between the two can be found. Thus, moving to a more private capital market based financial market system benefits infrastructure investments; it is associated with a decrease in investment volatility[12] (see Chart 2).

Chart 2:
Infrastructure Investment Volatility and Financial Markets Index



Source: OECD, IMF WEO Sept 2006; Swiss Re

Those findings are consistent with the arguments laid out in the following chapters: the efficiency and the depth of financial markets have a positive impact on infrastructure investment. As such, diverse long-term funding channels and well-developed private markets benefit financial market stability and thus the real economy at large. The rationale for additional infrastructure spending requirements in the current low-growth, post-crisis environment will be outlined in the next chapter.

[12] Infrastructure investment volatility is defined as the standard deviation of the investment share in non-residential structure divided by its mean value within a defined period.

2. Impediments to long-term investing

Key messages

- Regulation is necessary for financial market stability. However, high capital charges for longer-term assets such as infrastructure and a high degree of uncertainty surrounding the implementation of reforms is not conducive to the investments. This is further aggravated by an uncertain macroeconomic outlook.
- Moreover, the banking sector is still in a deleveraging mode, especially in Europe.
- Creating the right incentives and financial instruments to attract long-term investors is crucial; this represents an opportunity for institutional investors and the real economy at large, and thus for policymakers to create jobs.

2.1. The growth outlook – impact of policy and macroeconomic uncertainty

More than five years after the Lehman Brothers bankruptcy and the worst economic crisis since the Great Depression, global macroeconomic conditions have improved on several fronts, if perhaps less than could have been expected. The US economy has recovered from its recession, evidenced by the level of real GDP since 2011 remaining above the pre-crisis peak. Still, even though decisive policy actions have contributed to lower levels of financial stress and a more stable macroeconomic environment in general, the recovery has been weak by historical standards and current growth rates remain below potential output. At this point, the current US expansion has been the weakest in the post-World War II era (as seen in Chart 3). Moreover, several other Western economies have remained well below their pre-crisis level of economic activity, and the IMF has repeatedly revised down its growth forecasts compared to the 2008 World Economic Outlook (see Chart 4). The Eurozone periphery in particular has suffered from a prolonged output contraction with the outbreak of the EU debt crisis in late 2009.

Chart 3:
Real GDP – relative to end of recession

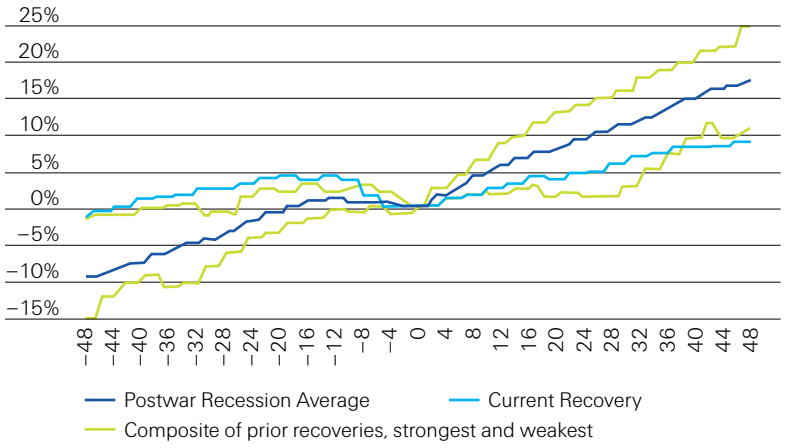
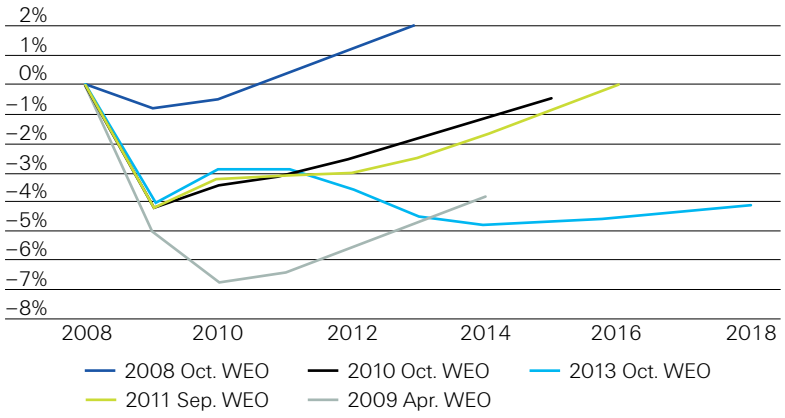


Chart 4:
World real GDP, % of pre-crisis trend IMF projections in the past



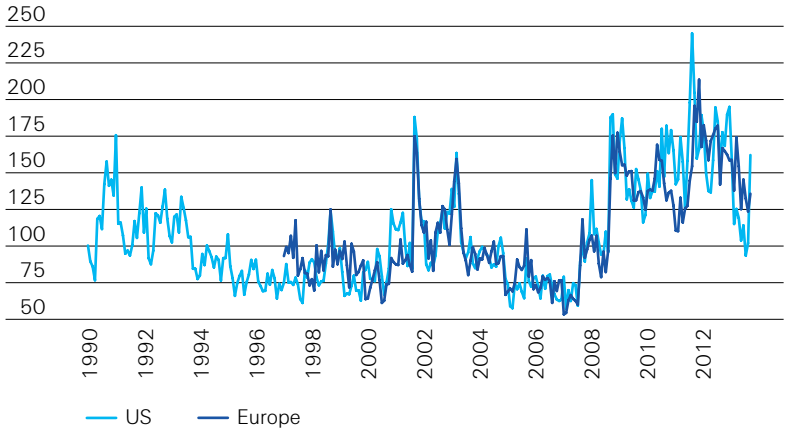
Source: Bureau of Economic Analysis, Council of Foreign Relations, IMF WEO, October 2013

Accordingly, unemployment has remained stubbornly high. The labor market has improved gradually in the US, but in the Eurozone and in Southern Europe in particular unemployment rates are at record levels. In emerging markets, referred to as "High-Growth Markets" (HGM) in this publication, post-crisis growth rates have remained decent and above developed markets overall, but economic activity has slowed most recently with Chinese annual GDP growth having fallen from 10% in 2010 to roughly 7.5% in 2013.

There are several underlying reasons for the subdued recovery, with strong regional differences. The deleveraging process of sovereigns, banks, corporates and households can certainly be highlighted, with ongoing austerity measures being particularly strong in Europe. Other headwinds include deteriorating housing market conditions and bank loan quality, as well as a high degree of political and policy uncertainty in a number of countries. Overall policy uncertainty has been above historical levels since the crisis (see Chart 5), and the low degree of confidence in the global macro and policy outlook has contributed to the rise in corporate cash holdings to record highs (see Chart 6).

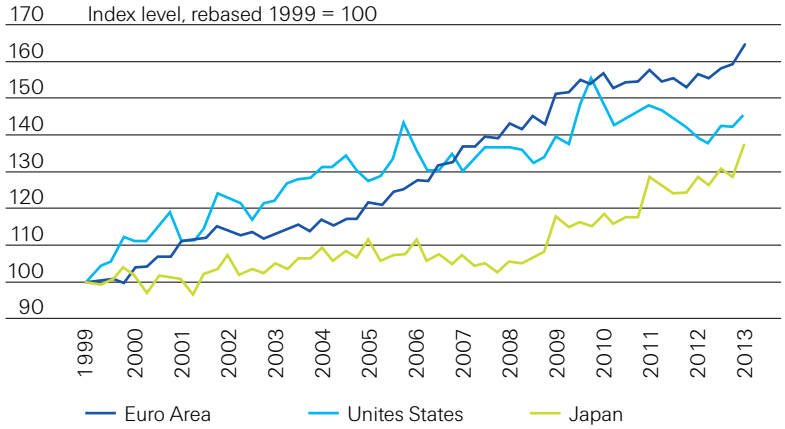
This environment is not supportive of institutional investors' appetite to make long-term commitments. Many institutional investors have sought refuge in "safe assets" since the onset of the financial crisis, and thus have the potential to increase their holdings of long-term assets (as noted in the G30 report on LTI[13]).

Chart 5:
Policy uncertainty indices



Source: www.policyuncertainty.com

Chart 6:
Corporate Cash Levels Relative to GDP



Source: IIF, September 2013

Sound and well-balanced policy action is needed, not only from central banks, but also from governments undergoing significant structural reforms. Furthermore, the role of long-term investing is becoming increasingly important for reviving economic growth. As such, maintaining a sufficient supply of financing to meet the growing investment requirements of the real economy is crucial. Investments in real, productive assets could contribute to bringing the global economy back to its longer-term trend of durable expansion. However, sustained high levels of macroeconomic and policy uncertainty represent a significant impediment to LTI and more infrastructure investments.

[13] *Long-term finance and economic growth.* G30, 2013

2.2. Potential implications of regulatory change

Regulation is necessary for financial market stability and to avoid the excesses seen in the recent past. Still, as previously mentioned, uncertainty regarding regulatory changes and possible unintended consequences is not conducive for the supply of long-term capital.

The G20[14] notes that "financial regulation (and its reform) influences both the level and distribution of long-term finance provided by the financial system", and the European Parliament[15] stresses that "a consistent regulatory framework and legal certainty are indispensable for a functioning single market for financial services".

Regulatory fragmentation has increased as a number of national policymakers have moved ahead of global concepts, with the most recent example being the Fed's proposal for stricter bank leverage and liquidity rules. While making regulatory capital charges dependent on an investment's maturity profile is a sensible approach, there is a risk that for insurers specifically the potentially high Solvency II standard formula capital charges for long-term assets will affect decisions on asset allocation. For instance, according to the standard model specifications[16], the charge for a 25yr A-rated bond (applicable to infrastructure debt) would be 18% (or 32.5% for BBB-rated) vs. 7% for a 5yr A-rated bond (see Table 1). As outlined in chapter 3.2 on private sector channels, long-term investments such as infrastructure debt can have significantly different risk patterns than corporate debt, which is not adequately reflected in the proposed capital charges. The current EIOPA discussions to review capital charges for infrastructure debt are welcomed in that respect.

Furthermore, the global systemic risk debate has now shifted its focus to non-banking institutions including insurers, with a list of global systemically important insurers (G-SII) released in July 2013 by the Financial Stability Board (FSB), and a similar list for reinsurers expected in July 2014. The related uncertainty around the regulatory requirements, such as Basic Capital Requirements (BCR) and Higher Loss Absorbency requirements (HLA), may reduce insurers' and reinsurers' willingness to undertake longer-term, more illiquid commitments. In a statement in its September 2013 declaration, the G20 has given the FSB (in consultation with IOSCO) the task to identify non-bank, non-insurance (NBNI) G-SIFIs, with a focus on asset management firms. The FSB will start working on related policy measures in 2014.

With the global discussion on long-term investment intensifying, the G20 has asked the FSB to "monitor the possible effects of regulatory reforms on the supply of long-term financing". Thereby, the FSB has identified several regulatory reforms that could affect LTI, including Basel III, OTC derivatives reform and the regulatory and accounting frameworks for different types of institutional investors. In February 2013, the FSB reported initial findings, concluding that there was "little evidence that the regulatory reforms have had a notable impact on long-term financing at this point". However, it was also noted that this was not surprising given the early stage of reform process. In August, the FSB published its updated findings[17]: While the early implementation stage of many regulatory reforms and related uncertainty regarding their impact were highlighted, tighter bank regulation was also identified as a likely source of pressure on the financing of long-term assets, as well as a shortening of average loan tenors. Moreover, tensions were identified between demands for regulatory simplicity and better tailoring of regulation to risks (e.g. reflecting default probabilities in infrastructure loan capital charges, see also chapter 3.2.).

The FSB monitoring exercise is crucial to identify potential regulatory headwinds to long-term investing. In general, uncertainty over possible implications remains high given the early stage of regulatory reforms, but tighter bank regulation was found to a potential impediment to institutional investors' ability to commit long-term capital.

Table 1:
Solvency II capital charges for bonds and loans

	Rating					
Maturity	AAA	AA	A	BBB	BB	B
8	6.1	7.2	9.1	17.0	30.0	50.1
9	6.6	7.8	9.8	18.5	32.5	54.3
10	7.2	8.4	10.5	20.0	35.1	58.5
12	8.2	9.4	11.5	22.0	38.7	59.5
15	9.7	10.9	13.0	25.0	44.1	61.0
20	12.2	13.4	15.5	30.0	46.6	63.5
25	14.7	15.9	18.0	32.5	49.1	66.0

Source: EIOPA, December 2012

[14] *Long-term investment financing for growth and development – umbrella paper.* G20, February 2013
[15] *Draft Report on long-term financing of the European economy.* European Parliament, November 2013
[16] *Revised technical specifications for the solvency II valuation and solvency capital requirements calculations.* EIOPA, December 2012
[17] *Update on financial regulatory factors affecting the supply of long-term investment finance.* FSB, August 2013

2.3. The banking model and long-term investing

The traditional banking business of transforming savings into long-term capital to finance the private sector has changed significantly over the past decade with wholesale markets and derivatives becoming much more dominant. This happened at the expense of previous deposit-taking and lending activities. The banking sector in Europe remains in deleveraging mode. Coupled with regulatory changes (e.g. Basel III), this further restricts lending. In fact, according to the BIS[18], "weaker EU banks" have reduced their project finance lending by 40% and "other EU banks" by 20% (more details in chapter 5). Furthermore, regulatory changes have prompted banks to lower the maturity of their project finance commitments, and are expected to continue pushing them toward shorter-term project finance. According to Eurofi[19], the portfolio allocation of pension funds, insurers and mutual funds to infrastructure debt should amount to 12.5% in order to replace the financing previously provided by banks. However, the current allocation in infrastructure debt represents less than 1% of global pension fund assets.

In HGMs, borrowers have traditionally relied primarily on bank funding. However, institutional investors and the development of capital markets are set to provide a growing share of financing for these economies. Continued development of the local currency bond markets is seen as essential for reducing dependence on short-term debt and strengthening these small, growing economies (see also chapter 6).

Questions about the impact of changes in the banking business model have been raised by the G20/OECD[20]: "Bank vulnerability to default is a direct impediment to lending and hence long-term investing". With governments facing their own challenges of high debt levels and implementation of austerity measures, one consequence has been the emergence of a long-term financing gap – which is particularly acute in the infrastructure sector (see chapter 4).

Banks fund a significant amount of the economy's medium- to long-term lending with retail deposits and short-term wholesale borrowing. Roughly 60% of medium and long-term assets are based on short-term liability funding[21] (however, it is worth highlighting that Basel III requirements will help reduce this ratio). This maturity transformation exposes the banking sector to considerable liquidity risks. Meanwhile, insurers hold long-term liabilities and can thus readily match them with long-term investments, avoiding the liquidity risks inherent in banks' maturity transformation. Given their liability structure and longer duration holdings (ranging from 7–15 years), institutional investors such as pension funds and insurance firms are well suited to commit long-term capital.

[18] *BIS Quarterly Review.* BIS, March 2012
[19] *Improving the financing of long term projects to favour growth.* Eurofi, September 2013
[20] *The role of banks, equity markets and institutional investors in long-term finance for growth and development.* OECD/G20, February 2013
[21] *The real financial crisis: Why financial intermediation is failing.* Oliver Wyman, 2012

2.4. Wish list: Policy and market actions to support LTI and infrastructure investing

Based on the mentioned barriers to closing the infrastructure financing gap as well as impediments to long-term investing more broadly, a concrete set of specific market and policy actions have been identified. This "wish list" supports the development of infrastructure investments as loans as well as in the framework of a more standardised asset class. Ultimately what is needed are infrastructure investments that share characteristics of a widely accepted asset class, highlighting the potential of infrastructure bonds. Strengthening the role of capital markets to enlarge the pool of investable longer-term assets would increase the available pool of investments.

Policy and market action wish list

a) Create a transparent, harmonised and accessible infrastructure asset class on a global level to attract long-term investors, catalysed through standards set by public agencies (see chapter 3.3. for a specific proposal). For this, changes on both the policy and market front are needed.

b) Promote information sharing and disclosure (e.g. a World Bank database). Specifically, a portal for information on infrastructure projects across the world.

c) Reduce policy uncertainty through consistent global regulatory roadmaps across sectors, to be agreed on at an international level.

d) Mitigate the pro-cyclicality of regulatory changes underway, e.g. by defining a phased-in approach or by establishing transitional provisions. Also, conducting cumulative impact studies would help considering "through the cycle capital charges".

e) Harmonise legislation for infrastructure investments and revive securitisation markets, notably in Europe. Recognition of equivalent legal and operational requirements across jurisdictions would increase market liquidity. Preference for UK law.

f) Review risk weighting of Solvency II standard formula and other regulatory capital charges. Infrastructure loans are subject to the same capital charges as corporate bonds according to the latest technical specifications in Solvency II. This does not reflect market reality given lower default rates for infrastructure debt and higher recovery rates (after the construction phase) compared to corporate loans/bonds[22] (see also chapter 3.2).

g) Strengthen investors' rights in cases of sovereign debt restructuring and facilitate an orderly restructuring of debt with strict adherence to a framework for voluntary, "fair" and "good-faith" negotiations such as that set out in the Principles for Stable Capital Flows and Fair Debt Restructuring[23].

h) International Financial Institutions (IFIs) and Multilateral Development Banks (MDBs) to develop best practices for bond documentation and due diligence and enforce them through their financing arms, which could be further increased through public private partnership (see chapter 3.3)

[22] *Infrastructure default and recovery rates,* 1983–2012H1. Moody's, December 2012
[23] see http://www.iif.com/emp/principles

3. Initiatives underway

Key messages

- The important role of long-term investment in providing support for the global economy is increasingly in focus. Greater coordination among the many official sector initiatives underway would be beneficial.
- Establishment of a transparent and harmonised infrastructure asset class would help attract long-term investors. Given their specific expertise, the international financial institutions (IFIs) and multilateral development banks (MDBs) could develop a generally accepted best-practice framework for infrastructure investment. This framework could then be reinforced through IFI lending activities, augmented by public-private partnerships.
- A joint private/public market initiative on a global level would leverage the role of IFIs and MDBs and introduce new elements such as pooling of infrastructure projects and insurance facilities to increase the IFI/MDB lending capacity. Agreeing on consistent national legal and operational requirements would facilitate the funding.

3.1. What has been done so far?

With the importance of long-term investment for the real economy high on the agenda for the G20, the international debate has gained steam. A number of institutions (incl. OECD, IOSCO, the European Commission, FSB, IFC, EIOPA , the World Bank and the IMF) have consulted with stakeholders. Global efforts to promote long-term investment are welcome, and show an increasing awareness of the importance of the topic, as well as willingness for policy action.

Table 2:
The Global Initiatives Map (selected initiatives, for more details see Appendix)

US/Australia	Europe	Global/HGMs
■ National Infrastructure Reinvestment Bank: Legislation backed by President Obama, lack of House Republican support ■ Australia's IFM (Industry Fund Management) Infrastructure Fund	**EU:** ■ European Long-term Investment Funds (ELTIF) ■ European Association of Long-term Investors (ELTI) ■ Competitiveness of Enterprises and SMEs (COSME) ■ Horizon 2020: The EU framework programme for research and innovation ■ Prime Collateralised Securities (PCS) private market initiative **EU/EIB:** ■ 2020 Project Bond Initiative ■ EIB's EUR 10bn capital increase, facilitating EUR 60bn of additional lending	**Global:** ■ G20/OECD high-level principles of LTI ■ World Bank Global Infrastructure Facility (GIF) ■ World Bank/Singapore Infrastructure Finance Centre of Excellence (IFCOE) ■ Multilateral Development Banks (MDB) Working Group ■ FSB Monitoring of regulatory impact on long-term investing **HGMs:** ■ BRICS-led Development Bank ■ Latin American pension fund investments in infrastructure ■ Power Africa: U.S.-led initiative to support power access in sub-Saharan Africa ■ Asian Bond Market Initiative (ABMI)

Source: Swiss Re

In Europe specifically, a range of initiatives has been launched, including the "2020 Project Bond Initiative", a joint project between the European Commission (EC) and the EIB. By providing EIB credit enhancement for project finance in Europe, its objective is "to stimulate capital market financing for large-scale infrastructure projects"[24]. This initiative represents a first step in the right direction of a more harmonised project bond market across Europe. Beyond this, the EC has proposed the establishment of a "European Long-term Investment Fund" structure, which would aim to help pool private capital available for long-term investing.

On the global level, the G20/OECD high-level principles of LTI and the G30 report on LTI have significantly increased awareness of this topic. As one example, the Multilateral Development Banks (MDB) Working Group focuses on infrastructure issues in developing countries and describes a concrete set of initiatives aimed at unlocking the infrastructure project pipeline and improving infrastructure spending efficiency. Another important effort is the World Bank's current development of a global infrastructure facility aimed at channeling funds into HGM projects.

Within HGM, there are several regional development banks active in LTI. The evolving infrastructure financing instruments and structures for pension funds in Latin America and the BRICS-led Development Bank are among the more prominent HGM initiatives. The latter is a work-in-progress initiative from Brazil, China, India, Russia and South Africa to build a development bank (initial capitalisation: USD 50 billion) to reduce reliance on Western financial institutions and support project financing needs in emerging economies. The Asian Bond Market Initiative, the EBRD's Local Currency and Local Capital Markets Initative and others aim to promote the issuance of local currency-denominated bonds and bond issuance for infrastructure financing.

Initiatives launched to date have focused primarily on long-term finance, particularly in HGM infrastructure, with MDB often involved. In more advanced economies, the debate on how to promote LTI is at an earlier stage, with most efforts concentrated on monitoring, research and setting up principles to promote LTI. However, specific action has yet to materialise in most cases, with the EU/EIB Project Bond initiative being an exception rather than the norm in that respect. More coordination would add greatly to the impact of these initatives, as would greater involvement of the private sector. A widely accepted "best practice" framework for infrastructure investment on an international level should also be developed. Given their experience and expertise, the role of International Financial Institutions (IFIs) and MDBs could be catalysed and enhanced in this area to establish and implement a framework and its guidelines.

[24] *The Europe 2020 Project Bond Initiative – innovative infrastructure financing.* EIB, http://eib.europa.eu/products/project-bonds/index.htm

3.2. Current and future long-term financing instruments and channels

Public sector channels

In addition to governments and government-related agencies, multilateral and regional development banks have been a major source of long-term investing through the provision of venture capital, housing construction, and SME financing, among other channels. Public channels are also important for infrastructure financing. In the US, public transportation infrastructure has tended to be financed by states and municipalities; taxable project bonds evolved in the early 1990s as a source for long-term infrastructure projects[25]. Globally, the World Bank and the International Finance Corporation (IFC) have played a leading role, with the latter investing directly in projects to promote economic development. More recently, the World Bank has been working to set up a global infrastructure facility intended to channel funds from both member nations and from the private sector into infrastructure projects.

In Europe, the EIB has been relatively active on the LTI front, and its Operational Plan prioritises the financing of SMEs, innovation, trans-european networks and energy. In 2012, the EIB lent EUR 52bn in support of the EU's objectives. For infrastructure project finance specifically, the first transaction under the mentioned EU/EIB Project Bond initiative was closed (provision of a EUR 200mn liquidity line as credit enhancement for the Castor underground gas storage project in Spain). The proposal for a European Long-term Investment Fund (ELTIF) is intended to offer a fund structure that differs from the existing UCITS (Undertakings for Collective Investment in Transferable Securities) framework, as funds cannot be redeemed on demand (rather, only after a pre-defined investment period). Moreover, at least 70% of the fund's capital needs to be invested in eligible long-term assets. Those include unlisted companies, "real" assets that need long-term capital for development, European Venture Capital funds, and European Social Entrepreneurship funds.

A common form of infrastructure financing is a public-private partnership (PPP) involving a contract between a public sector authority and one or more private-sector parties. The aim of the partnership is to finance a public project when insufficient public funding is available. Global PPP volumes have reached roughly USD 60bn in 2012[26].

Private sector channels and instruments

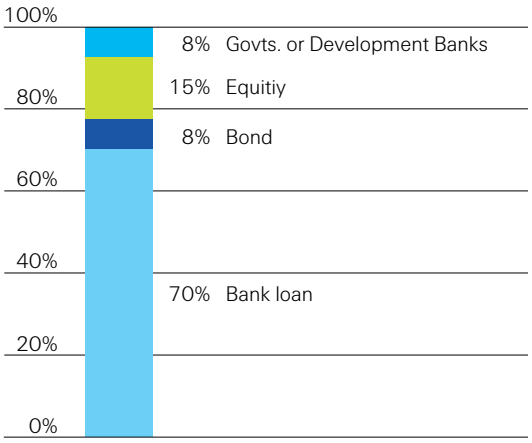
There is a whole range of structures and investment vehicles allowing institutional investors to commit long-term capital. Those can be private equity/venture capital, real estate or other alternative investment funds, fund of funds, direct investments or bespoke co-financing structures etc. This chapter focuses on infrastructure debt investment, as infrastructure is expected to suffer from a particularly large financing gap in the years ahead (see chapter 4).

[25] *The mood for loans*. Societe Generale, April 2013
[26] Dealogic, 2013

Private infrastructure fundraising can occur mainly through three mechanisms: i) a public bond issuance, ii) private placement and iii) bank loans. Commercial banks (or a syndicate of banks) have been very active in infrastructure finance. Meanwhile, project bonds have become better established in North America – such as taxable or 144A project bonds[27], and a significant share of total issuance is attributable to bonds issued in HGMs. However, as seen in Chart 7, bank loans remain the predominant instrument for infrastructure financing.

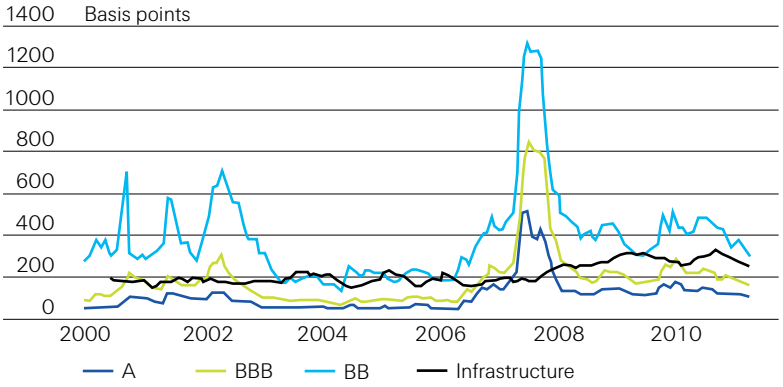
Infrastructure loans and bonds meet several needs of institutional investors, such as regular cash flows and attractive risk-adjusted yields. In fact, they offer a significant premium over Treasury rates and coupons have remained stable despite the decline in US Treasury yields in recent years. During the financial crisis in 2007/2008, infrastructure debt spreads remained resilient in terms of spreads, and did not suffer a jump in default rates (see Chart 8). Furthermore, the high credit-quality of infrastructure debt has been well documented – e.g. Moody's report on infrastructure default and recovery rates[28]. Importantly, the credit-quality was found to improve significantly when moving from a project's construction to operational phase. Overall, the default pattern of infrastructure debt differs significantly from that of corporate bonds – a fact that should also be reflected in the regulatory treatment of these investments.

Chart 7:
Indicative global infrastructure finance structure



Source: Swiss Re, Eurofi Sept 2013

Chart 8:
Margins over LIBOR
Long-term (7+ year) global corporate bonds and new issue infrastructure project debt



Source: Milliman, JPM, Barclays, June 2013

At the same time, current infrastructure finance deals are complex, often involving a syndicate of banks and tending to have credit ratings of BBB or lower. The secondary market for these loans has been almost non-existent, and there is no generally-accepted benchmark. Standardising financial instruments and developing a sizeable project bond market is crucial. The advantages of marketable and standardised bonds to finance projects – as opposed to bank loans – should outweigh any potential loss in flexibility.

Overall, these developments underscore the need for a global infrastructure asset class with characteristics that attract more long-term investors.

[27] Rule 144A (of the US Securities and Exchange Commission Act 1933, amended in 1990) allows private placements (including infrastructure project debt) to be resold in the secondary market

[28] Infrastructure default and recovery rates, 1983–2012H1. Moody's, December 2012

3.3. How could current initiatives be strengthened?

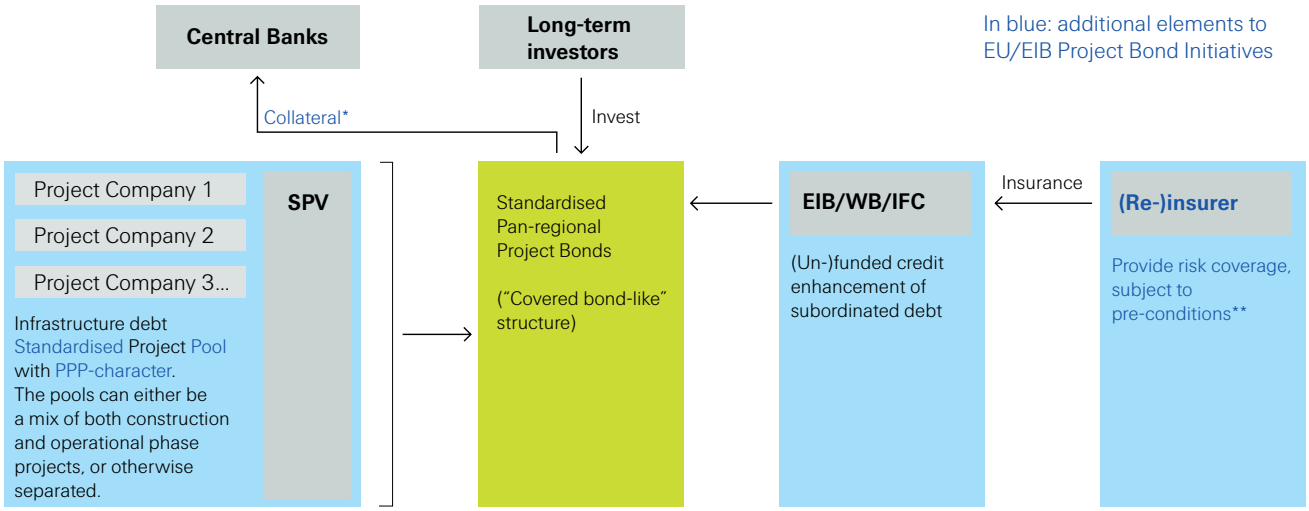
Several global initiatives try to create better conditions for long-term investors. However, there remains a general lack of harmonisation and suitable investment instruments. As such, there is a need for a transparent, harmonised and accessible infrastructure asset class to attract long-term investors. As local infrastructure funding needs compete with the more established markets, such an asset class should be created on a global level. The current EU/EIB proposal is a good starting point in that respect, but it could be enhanced by i) more standardisation, ii) pooling of projects and iii) additional capacity from (re-)insurance risk coverage. Providing (re-) insurance capacity to the EIB is attractive given the EIB's preferred creditor status. In current industry developments, there is already significant provision of risk-taking capacity by the insurance market to project finance banks. Providers include reinsurers and insurers, which offer comprehensive non-payment insurance. This concept has already been observed e.g. in Latin American pension fund investments in infrastructure. In order to deal with the heterogeneity of infrastructure projects, pools with projects from similar industries and project phases (i.e. greenfield vs. brownfield) could be created, attracting the respective target investor groups. The structure should be flexible enough to allow the number of projects to change over time. This allows structuring of project pools with a sufficiently large number of line items and development of the required standardisation from an operational perspective.

Finally, in order to move towards a new asset class of a global project bond market, infrastructure and project loans should be standardised, featuring the following characteristics:

- An assigned credit rating
- Establishment of a common governing law and aligned contract terms with clear rules for amendments, consents and waivers
- Regular (eg monthly), standardised reporting, documentation and disclosure to bond investors. Term-sheet to include specification on the target bond investor market, marketing strategy, target rating, target price, listing location, fee structure etc.
- Project servicer and trustees on a pan-regional (e.g. EU) level would be desirable, as would be the definition and adoptions of performance benchmarks

Such suggested elements could help to bring more institutional investors on board. There is thus a case for private market participants to work together with the public sector in creating a "Global Project Bond Market" and infrastructure asset class (Chart 9). The (re-) insurance sector could play a pivotal role in this respect, both as a long-term investor and through its traditional role of transforming risks. Taking this joint private-public market initiative to a global level would leverage the role of Multilateral Development Banks such as the World Bank's Multilateral Investment Guarantee Agency (MIGA) and/or IFC in addition to the EIB on a regional basis for Europe. This approach conforms to the European Parliament's view[29] that "national or multilateral development banks can stimulate private investments and catalyse long-term financing for undertakings of broader public interest". Similarly, the G20/OECD notes[30]: "In markets with limited participation by institutional investors, governments, national development banks, and multilateral development agencies should consider the need for establishing and promoting pooled vehicles for long-term investing, and supporting other instruments for long-term investing such as project bonds".

Chart 9:
Structure of Swiss Re Private-Public Market Proposal



* Possibly lower CB repo haircuts and lower regulatory capital charges due to the new features
** Pre-conditions could include: no open cession structure, alignement with risk appetite and interests

Source: Swiss Re

[29] Draft Report on long-term financing of the European economy. European Parliament. November 2013
[30] G20/OECD high-level principles of long-term investment financing by institutional investors. July 2013

A similar structure has already been proposed by the UN Department for Economic and Social Affairs (May 2012) for developing economies. Thereby, the idea of creating project pools is justified by the expectation of overcoming typical issues with infrastructure project finance, which include the required commitment of a relatively large amount of capital at one time and the substantial structural differences of one project from another.

Compared to the current market reality and instruments, the proposal brings a range of new elements, highlighted in table 3.

Table 3:
The new elements of the Swiss Re Private-Public Market Proposal of a Pan-Regional Project Bond Market

Today's market reality	Tomorrow's desirable characteristics
■ No standardisation, mostly non-marketable securities ■ Punitive capital charges ■ Weak investors' rights ■ Low credit rating ■ No preferential tax treatment ■ No benchmark ■ More floaters than fixed rate structures	■ Harmonised and marketable global infrastructure asset class catalysing and adapting existing initiatives of multinational organisations ■ Potentially more fixed structures and no prepayment risk ■ Best practice guidelines from international financial institutions/Multilateral Development Banks; global passport for investments in an asset class ■ Potentially lower regulatory capital charges and preferential tax treatment ■ In the case of Europe, the existing EU/EIB Project Bond Initiative includes EIB guarantees, providing a credit rating uplift. Private-public market initiative: guarantee is provided on pool of projects, not on a deal-by-deal basis ■ Provides adequate collateral eligibility treatment for national central banks ■ (Re-)insurance industry provides a facility for EIB/multilateral organisation risk coverage: leverage existing funds and transform risk

Source: Swiss Re

The initiative could bring substantial advantages for institutional (i.e. long-term) investors: The pooling of projects and standardisation of documentation, coupon payments, legal terms etc. are valuable characteristics of an asset class: It makes it more easily accessible, requires less internal resources, provides diversification through pooling, increases transparency, and ultimately leads to higher credit quality. Avoiding specific national legal and operational requirements could result in a pan-regional infrastructure investment "passport" (i.e. similar to the UCITS framework), greatly simplifying the investment process for institutional investors. The concept of pooling in particular has proven to be successful in many other asset classes, such as covered bonds where the market in Europe has grown significantly over the past decade. Moreover, issues related to the EU/EIB's "case by case" approach (i.e. suspension of Castor project due to geological difficulties) could be reduced with a more diversified pool of underlying projects. Finally, the EIB credit enhancement, coupled with additional backing from the (re-)insurance industry, makes the asset class appealing from the perspective of regulatory and central bank collateral eligibility.

4. The infrastructure financing gap

Key messages

- Traditional, bank-centric intermediation transforming savings into long-term investments has been shifting to a system where institutional investors play an increasingly important role in providing long-term capital.
- Estimates for future infrastructure financing needs are in the range of USD 50–70trn through 2030, with the relative share of HGM rising from current levels.
- Institutional investors currently invest an average of roughly 3% of their total assets in infrastructure financing but a range of factors - the post-crisis decline in risk appetite, the low-yield environment, and the effects of the regulatory reform process - need to be adressed to motivate them to help close the infrastructure financing gap in the coming decades.

4.1. Estimates of infrastructure supply vs. demand

Given the impediments to long-term investing (and infrastructure finance in particular), as well as ongoing policy initiatives around LTI, a closer look at potential future infrastructure spending requirements is warranted. The risk is that a significant funding gap could emerge.

Current and future demand

Estimates for future infrastructure financing needs are in the range of USD 50–70trn between now and 2030.

Estimates of infrastructure financing needs

The USD 50-70trn estimate from now through 2030 is based on the following studies:

- Ernst & Young[31] projections are in the order of USD 57trn
- The OECD estimates financing needs at USD 50trn[32]
- The McKinsey Global Institute calculated a need of USD 57–67trn – depending on the methodology (see Chart 11 for the USD 57trn estimate)[33]

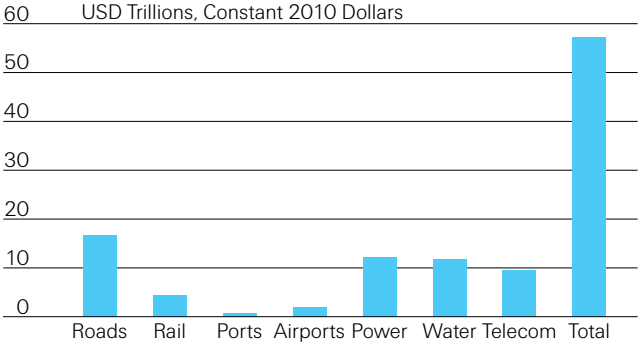
Some USD 2.6trn is being spent on infrastructure globally (~3.6% of global GDP):

- Based on the assumption that cumulative funding needs through 2030 will be roughly USD 60trn, current annual spending will need to increase to USD 4.3trn by 2030 (see Chart 11)
- The regional split is based on current Project Finance Volumes[34] and potential long-term real GDP growth rates for Europe and North America (as estimated by the OECD)
- As a result of higher expected growth rates in HGMs, their relative share in global infrastructure spending is projected to increase from current levels

[31] *Infrastructure 2013 – Global Priorities, Global Insights.* Ernst & Young, 2013
[32] *The role of banks, equity markets and institutional investors in long-term financing for growth and development.* G20, February 2013
[33] *Infrastructure productivity: How to save $1 trillion a year.* McKinsey Global Institute & McKinsey Infrastructure Practice. January 2013, Executive Summary. http://www.mckinsey.com/insights/engineering_construction/infrastructure_productivity
[34] *Project Finance Review – First Nine Months 2013.* Dealogic, 2013

Several caveats apply to this estimate of future infrastructure financing needs: First, the definition of infrastructure used here differs from the one outlined in chapter 1 and encompasses costs for road, rail, ports, airports, water, and telecom development, but does not incorporate other costs, such as schools or hospitals.[35] Second, this figure does not take into account the "broader development goals" of emerging economies beyond where they currently stand, nor does it include additional efforts to protect infrastructure investments from the effects of climate change or efforts to build in a more sustainable manner.[36] The International Energy Agency put the estimates for these types of measures at approximately USD 1.1trn each year until 2050; an amount which would equal a total of USD 76.8 trn in the next eighteen years.[37]

Chart 10:
Global infrastructure demand USD 57trn in investment by 2030



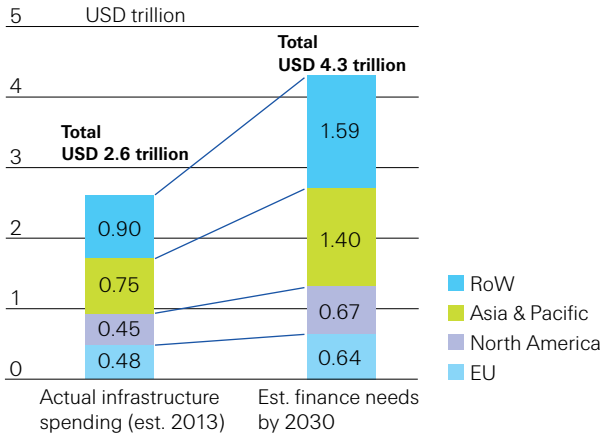
Source: McKinsey Global Institute, 2013

In developed countries, many of these needs lie in the refurbishing or total renovation of assets labeled "mature" infrastructure. Meanwhile, the American Society of Civil Engineers estimates that USD 2.2 trn is needed for the US to be rated "A" in its infrastructure (they have also rated the current US system "D" based on global standards). In HGM, on the other hand, there is a need for new infrastructure, or greenfield project financing, to provide more people with basic sanitation, health, and shelter[38], as well as basic transportation infrastructure.

Funding is not the only issue. Efficient use of funds to maximise outcomes from infrastructure development is also crucial, and could save the world USD 1trn per year, as noted by McKinsey. In addition, the growing need for financing, anticipated to be 60% greater during the next two decades than over the previous two, necessitates a greater understanding of the market, which many economists recommend facilitating by making infrastructure its own asset class.[39]

[35] *Infrastructure productivity: How to save $1 trillion a year.* McKinsey Global Institute & McKinsey Infrastructure Practice. January 2013, Executive Summary. http://www.mckinsey.com/insights/engineering_construction/infrastructure_productivity
[36] *Infrastructure productivity: How to save $1 trillion a year.* McKinsey Global Institute & McKinsey Infrastructure Practice. January 2013, Executive Summary. http://www.mckinsey.com/insights/engineering_construction/infrastructure_productivity
[37] *Energy Technology Perspectives—In support of the G8 Plan of Action.* International Energy Agency. 2008, http://www.iea.org/techno/etp/ETP_2008_Exec_Sum_English.pdf
[38] *What is the future for infrastructure financing?* Pricewaterhouse Coopers. http://www.pwc.com/gx/en/capital-projects-infrastructure/financing.jhtml
[39] Lu, K. and Lin, J. *To Finance the World's Infrastructure, We Need a New Asset Class.* Huffington Post. October 10, 2013. http://www.huffingtonpost.com/kevin-lu/world-bank-global-infrastructure-facility_b_4078840.html

Chart 11:
Project finance spending vs. needs annual, in USD trillion



Source: Swiss Re, Dealogic, IMF. Global infrastructure spending expected to grow at 3% p.a. to reach a total of USD 60trn through 2030. Spending in NA and Europe expected at OECD-projected potential real GDP growth (as of 2013) of 2.1% and 2.0%, respectively

Current and future supply; the financing gap

Since the financial crisis and in the new regulatory environment, the role of banks has shifted with the focus being on balance sheet repair. A recent G20 report notes that French and Spanish banks provided 40% of trade credit to Latin America and Asia in 2010. French bank lending has shrunk by as much as 20% since June 2011, amounting to a deficiency of up to USD 650 billion.[40] Given that much of the infrastructure needs reside in HGM, often perceived to be riskier, these trends augment the HGM financing gap.[41]

The potential benefits of institutional investor involvement in infrastructure financing are significant, providing a counter-cyclical, stabilising impact and helping to offset short-termism and promote economic growth. However, the current landscape still appears inadequate for projected funding needs going forward. Today's target levels for infrastructure investment from institutional investors (6% on average, vs. 3% today) would only increase investment capital by USD 2.5 trillion through 2030, which – while a significant amount of funding – does not compare to the USD 57 trillion or more projected in estimated needs.[42]

Bond markets, globally and in HGM specifically, have also emerged as a "largely untapped pool of capital" that has the potential to increase the capacity for debt in the infrastructure market (see chapter 6).

[40] *Global Development Horizons: Capital for the Future: Saving and Investment in an Interdependent World.* The World Bank. 2013, http://siteresources.worldbank.org/EXTDECPROSPECTS/Resources/476882-1368197310537/CapitalForTheFuture.pdf
[41] *Infrastructure productivity: How to save $1 trillion a year.* McKinsey Global Institute & McKinsey Infrastructure Practice. January 2013, Executive Summary. http://www.mckinsey.com/insights/engineering_construction/infrastructure_productivity
[42] Ibid

4.2. The potential role of insurers and pension funds – what is their capacity?

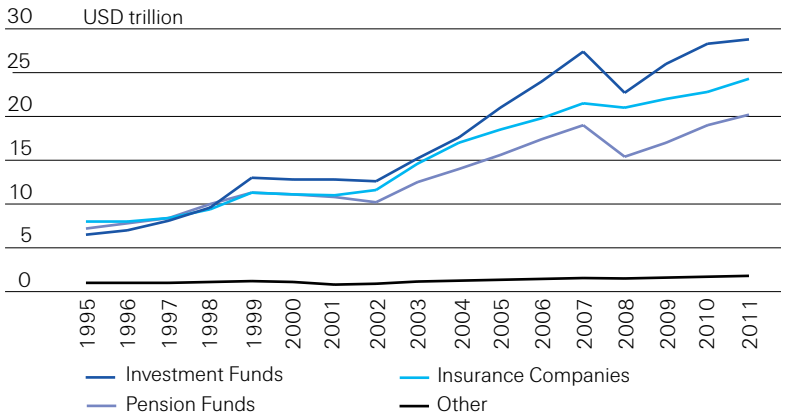
Long-term institutional investors, including insurers, pension funds, sovereign wealth funds and asset managers are well suited to help bridge the emerging infrastructure financing gap given their need for long-term assets. Their investment horizon is typically long-term driven by the long-term nature of their liability structure (e.g. life insurers or pension funds). The average defined benefit pension fund liability profile has a duration of 12–15 years while a typical life insurer has a duration of 7–10 years.[43] With their large asset base, long-term institutional investors have the potential to bridge the emerging infrastructure financing gap.

Together with other investors such as Sovereign Wealth Funds, long-term institutional investors are thus well-suited to commit long-term capital. However, there are many hurdles to capitalising fully on the institutional potential to invest with a longer-term horizon. As outlined in chapter 2, those hurdles include uncertainties on a number of fronts and the need to build an asset class supported by an efficient marketplace which facilitates the buying as well as the selling of longer-term assets, increasing their attractiveness. As such, long-term institutional investors have the potential to help bridge the emerging infrastructure financing gap. However, the right pre-conditions have to be set, these include policy as well as market actions (see chapter 2.4).

The long-term investor asset base

- The global long-term investor asset base is estimated at USD 70 trn[44]
- At year-end 2012, insurers in Europe alone had EUR 8.5 trn in assets under management[45]
- Towers Watson's September 2013 report states that assets under management for the world's largest pension funds totaled USD 14.0 trn in 2012, and that their funds increased by 9.8% during the same year from 1.9% in 2011[46]
- Within the OECD, the combined asset base of insurance companies and pension funds amounts to roughly USD 45trn (USD 20trn pension funds and USD 24.3trn insurers, see Chart 12)

Chart 12:
Total assets held by institutional investors in the OECD



Source: G20, OECD

[43] *The Future of Long-Term Investing.* World Economic Forum, 2011
[44] *The role of banks, equity markets and institutional investors in long-term finance for growth and development.* OECD/G20, February 2013
[45] *Funding the future: Insurers' role as institutional investors.* Oliver Wyman & Insurance Europe, June 2013, http://www.insuranceeurope.eu/uploads/Modules/Publications/funding-the-future.pdf
[46] *The world's 300 largest pension funds – year end 2012.* Towers Watson. http://www.towerswatson.com/en-AU/Insights/IC-Types/Survey-Research-Results/2013/09/The-worlds-300-largest-pension-funds-year-end-2012

5. Regional Outlook – Europe

Key messages

- With structural issues in the Eurozone still not resolved and ongoing austerity measures representing a significant headwind, the region's growth outlook remains subdued. Furthermore, as Eurozone banks are in adjustment mode for longer, the lack of diversity in intermediation represents a major headwind for financing the real economy.
- In order to increase the diversity of the European financial market architecture, insurance companies and pension funds could play a more prominent intermediation role in providing long-term capital to the real economy.
- With regard to capital markets, further diversity in funding sources would be helpful. Across Europe, harmonisation of the legislation associated with infrastructure investment would be particularly supportive.

5.1. Subdued economic growth ahead

The Eurozone economy has been hit particularly hard over the past few years, as the 2007–08 global financial crisis was followed by a sovereign debt crisis in the region. This has resulted in a continued economic contraction with some countries suffering deep recessions. In fact, Italy's output level has remained well below its 2008-peak and is currently at the lowest level since early 2000. The level of unemployment is at unprecedented levels across the region, and austerity measures coupled with continued bank deleveraging have represented significant headwinds. And while the Eurozone as a whole finally managed to exit recession in Q2 2013, the growth outlook for the region remains subdued. For 2014, the IMF is projecting just +1.0% of real GDP growth vs. +2.6% in the US and +3.6% on a global level.

Structural reforms and long-term investment are urgently needed in Europe to help revive the economy. The mentioned impediments to long-term investing on a global scale apply to the Eurozone as well, making a strong case for policies that foster the commitment of long-term financing.

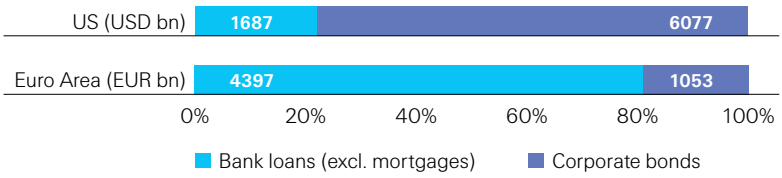
5.2. Reliance on bank finance

Bank lending represents the major source of the financing of non-financial corporates in the EU currently around 60–90% of their financing, depending on their size. Meanwhile, US companies obtain 80% of their financing from the market (see Chart 13). The BIS[47] finds that banks "only extend around 30% of total credit" in the US but "close to 90% in heavily bank-based systems such as Germany or Greece".

Furthermore, bank loans remain the major financing source of infrastructure projects in the EU and globally, representing roughly 70% of such financing (see also chapter 3.2). Meanwhile, Eurozone banks continue to repair their balance sheets (and are less advanced in this respect than their US counterparts, see Chart 14), in the wake of the financial crisis and and in an environment of regulatory changes. As outlined in chapter 2.3. EU banks have already significantly reduced their project finance lending. Moreover, Basel III, the upcoming ECB Asset Quality Review and stress tests will likely increase the deleveraging pressure that weighs on lending activity. Still, the ECB assessment represents an important step toward a the much-needed banking union.

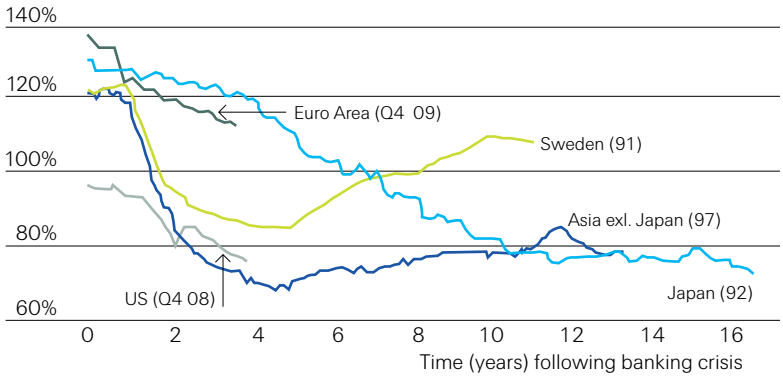
The upcoming report of EIOPA on long-term investing is expected to shed more light on the current impediments to LTI in Europe.

Chart 13:
Sources of Non-financial Corporate Financing



Source: SocGen, April 2013

Chart 14:
US is Ahead of Euro Area in the Deleveraging Cycle, banking systems' loan-to-deposit ratio post crisis



Source: Morgan Stanley, 2013

In Europe, lack of diversity in intermediation represents a major impediment to the financing of the real economy. In that respect, recent ECB's public comments[48] suggesting support for reactivation of the European ABS market or securitisation more generally are most welcome. In particular, the ECB has spoken in favour of "initiatives to improve transparency and standardisation, with the aim of enabling investors to better assess risk, and support the real economy [as] crucial to attract market participants and reactivate the European ABS market". To increase the diversity of the European financial market architecture, other institutions such as insurance companies and pension funds need to step in and take on a greater intermediation role in providing long-term capital to the real economy.

[47] *BIS Quarterly Review.* Bank of International Settlement, March 2013
[48] ECB monthly report, September 2013

6. Regional Outlook – High Growth Markets

Key messages

- While HGM borrowers have traditionally relied primarily on bank funding, institutional investors and the development of capital markets are set to provide a growing proportion of financing for these economies.
- The past few years witnessed a general shift away from HGM equities toward bonds; continued development of local currency bond markets is seen as essential for reducing dependence on short-term debt and strengthening these small, growing economies.
- Barriers to long-term infrastructure financing in these economies include the lack of appropriate tools and debt instruments, regulatory barriers, lack of access to reliable information on available investment options and low-risk preferences that lead investors to brownfield projects rather than riskier greenfield projects.

Public-sector funds have traditionally been a key source of long-term financing in many High Growth Markets. Following the liberalisation of capital markets in the late 1980s and early 1990s, this framework has gradually shifted toward a greater emphasis on private sector financing.[49] With rapid growth in HGM economies in the past two decades (prior to the recent slowdown), financial systems have grown substantially and became an important source of financing for long-term investing. Despite these changes, however, mature countries continue to dominate the supply of long-term finance as national saving rates remain relatively low in many HGM countries. In most instances, international private capital flows, especially international commercial bank finance, remain a vital source of long-term financing for HGM.

6.1. Identification of attractive asset classes for LT Investing

Financial systems in many HGM countries are largely bank-based, while capital markets and institutional investors, with few exceptions, remain at a nascent stage of development. The current environment has highlighted concerns surrounding unintended consequences of global regulatory reforms on HGM banks. These concerns reflect, in part, the lack of adequate resources and expertise to adequately respond to the post-crisis global regulatory initiatives[50]. More diversified domestic financial systems would help to ease the problem of missing non-bank markets.

Indeed, growth in domestic savings pools is on the rise. Recent studies suggest that savings held by non-bank financial institutions, such as pension funds, insurance companies, and mutual funds are growing faster than underlying income in many HGM countries.[51] Over time, a greater role for local HGM investors should help provide more stable funding in support of economic growth – not just in their own economies, but abroad as well. For example, the share of HGM economies in global Foreign Direct Investment (FDI) flows has more than tripled, reaching 20% of total world outward FDI.[52] Given the large aggregate infrastructure financing gap in HGM economies, deeper domestic financial markets would reinforce the ability of HGM to absorb a larger volume of international capital flows, while alleviating the impact of volatility in cross-border flows on the domestic economy.

A number of other factors highlight the significant potential for further development in local currency bond markets. The outstanding volume of domestic debt in HGM countries has reached around USD 10trn - more than four times the level seen in 2002 (85% of total emerging market debt outstanding) – but HGM continue to lag behind mature peers in terms of market development relative to the size of their economies, highlighting the potential for a "catch up". Similarly, the proportion of HGM domestic savings that is invested in bonds remains low relative to that in mature markets. Moreover, global benchmarks, which have traditionally had relatively low allocations to HGM bonds (roughly 10% on average), are seeing more use of GDP weighting - suggesting the potential for a rise in allocations to HGM bonds: In recent years, perceived improvement in the credit standing of emerging economies, together with international investors' demand for higher-yielding assets, has

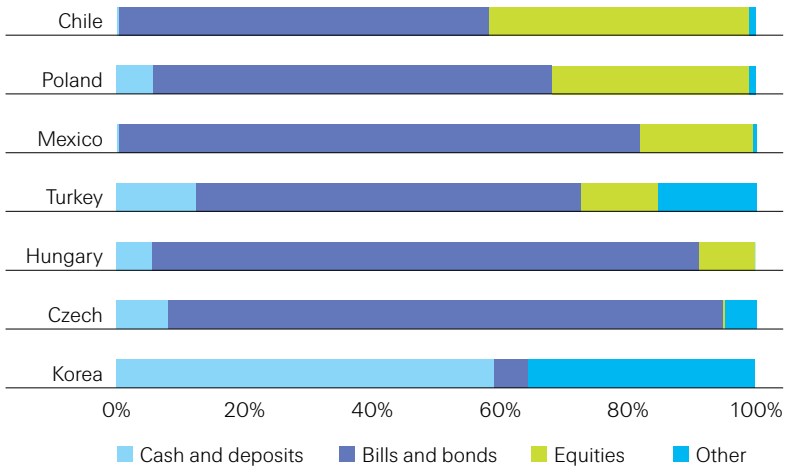
[49] *Capital for the Future: Saving and investment in an Interdependent World.* World Bank, May 2013
[50] *Monitoring Note on the Effects of Regulatory Reforms on Emerging Market and Developing Economies.* Financial Stability Board, September 2013
[51] *Emerging market bonds come of age.* Standard Chartered Views, October 2013.
[52] *Emerging Markets—A Key Source of Global FDI Flows.* IIF Research Note, November 2013

increased non-resident holdings of EM local currency bonds – now nearly 27% on average, and exceeding 40% in a number of emerging market economies. Developing the local currency bond markets is also a policy priority for many HGM countries, seen as essential to reducing dependence on short-term foreign debt. In addition, domestic bond markets that are able to absorb more issuance of longer-maturity local currency debt will help a country to meet the urgent need for long-term financing.

Although institutional investors in HGM, such as pension funds, insurance companies and mutual funds, are still in the early stages of development, they have the potential to become key players as providers of long-term finance. Institutional investors have traditionally invested in long-term projects through fixed income instruments, which together with equities constitute the two most important asset classes in many HGM institutional investors' portfolio (Chart 15). There has been a significant shift in recent years from equities towards bonds (mainly sovereign bonds), and to a lesser extent, towards alternative assets such as corporate bonds, hedge funds, real estate, and private equity[53]. Given the prospect for robust future growth for institutional investors, especially in countries where private pensions and insurance markets are small compared to the size of the economy, their importance in project finance is set to increase in coming years. The challenge for HGM policymakers will be to ensure that their legal and regulatory frameworks are able to keep pace.

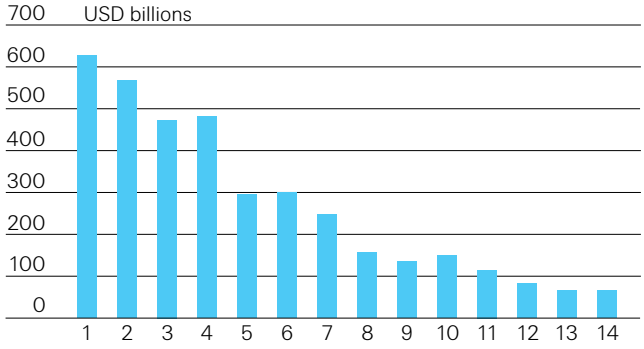
Sovereign wealth funds are also becoming key players in infrastructure and project finance in HGM, including China, Saudi Arabia, UAE, and Russia (Chart 16). According to UNCTAD, cross-border mergers and acquisitions in the international infrastructure sector by SWFs reached USD 6.4 billion in 2011.

Chart 15:
Pension Funds' Asset Allocation
(% of total investment, as of end-2011)



Source: OECD

Chart 16:
Largest Sovereign Wealth Funds
(USD billion, assets under management, 2012 data)



1 Abu Dhabi Investment Authority
2 SAFE Investment Company
3 SAMA Foreign Holdings
4 China Investment Corporation
5 Kuwait Investment Authority
6 Hong Kong Monetary Authority Investment Portfolio
7 Government of Singapore Investment Corporation
8 Temasek Holdings
9 National Social Security Fund
10 National Wealth Fund
11 Qatar Investment Authority
12 Australian Future Fund
13 Libyan Investment Authority
14 International Petroleum Investment Company

Source: OECD

[53] Institutional Investors and Infrastructure Financing. OECD, October 2013

As an alternative to traditional local, regional and international commercial banking vehicles, Islamic finance can also play an important role in closing the funding gap for long-term projects, particularly in Middle East and Asia. Islamic finance has already demonstrated its ability to provide long-term project financing, especially in the aftermath of the 2008 global crisis when international commercial bank liquidity for long-term projects in the Middle East contracted.

Finally, the emergence of "crowd sourced" funding - aimed at minimising the role of intermediaries in matching savers with investors - is also worth a closer analysis in the context of HGM. Though crowd funding is still very much in its infancy and mainly represents an alternative form of financing for start-ups and SMEs at present, it has the potential to play a role in promoting access to long-term finance for infrastructure investment in HGM.

6.2. Specific challenges for LT investing in HGM

One of the greatest challenges facing HGM is a growing need for investment in an environment with declining resources, on top of the widening gap between investment demand and supply. In addition, the present market structure in many HGM does not provide enough liquidity or the appropriate tools or debt instruments through which large institutional investors may gain access to long-term projects. Pension funds, for instance, are relatively constrained in their ability to make long-term investment in emerging markets, due both to these factors and to internal constraints, e.g. restrictions on portfolio allocations.[54]

Better financing vehicles, especially for smaller investors, would help these markets capitalise on the funds available and increase access to these investments. Examples include those used in some Latin American countries, such as infrastructure bonds with insurance guarantees in Chile, structured products in Mexico, collective trust structures in Peru, and joint-owned infrastructure companies in Brazil. All provide potential models that could be implemented elsewhere.[55]

Against this backdrop, a number of factors augment the challenges for ensuring adequate investment in HGM[56]: – mature market fiscal strains and the limits they impose on direct public investment, the cost and availability of investments (risk-return tradeoff), a greater need for higher-risk, greenfield investment, and the costs of resource constraints. While greenfield investments are needed in HGM, brownfield projects that have completed the construction stage are perceived to be more desirable for long-term investors, given their more favorable default characteristics. Investors may be unwilling to invest in greenfield projects in HGM in particular, where risks are seen to be compounded by country-specific factors.

Regulatory barriers and a shift towards market-consistent valuations and risk-based solvency standards may further impede investment in HGM, compounding the effects of the lack of appropriate financing vehicles and debt instruments.[57] Another impediment cited by many multilateral institutions, including the IFC, is the need for more objective, high-quality data on investment conditions in HGM, without which investment decisions are harder to justify. Greater access to data on the asset allocation of investments in alternative asset classes typically utilised by infrastructure projects, such as hedge funds, private equity, real estate, infrastructure, and commodities, would also enhance the investment environment in these economies.[58]

[54] *Long-Term Finance and Economic Growth.* G30 Working Group on Long-Term Finance. Group of 30, 2013, p. 13. http://www.group30.org/images/PDF/Long-term_Finance_lo-res.pdf

[55] Della Croce, R. and Yermo, J. OECD Working Papers on Finance, Insurance and Private Pensions No. 36: *Institutional Investors and Infrastructure Financing.* Organisation for Economic Cooperation and Development, 2013, p. 27. http://www.oecd-ilibrary.org/docserver/download/5k3wh99xgc33.pdf?expires=1385500267&id=id&accname=guest&checksum=1E1C23E913AD29EB128EEDFB142390DD

[56] *Infrastructure productivity: How to save $1 trillion a year.* McKinsey Global Institute & McKinsey Infrastructure Practice. January 2013, p. 19. http://www.mckinsey.com/insights/engineering_construction/infrastructure_productivity

[57] *Institutional investors and Infrastructure Financing,* OECD, October 2013

[58] Ibid

7. Conclusion

Long-term investing is important for economic growth. For infrastructure in particular, a positive relationship between spending and GDP growth has been confirmed. Deeper capital markets have a positive impact on the stability of an economy's infrastructure investment share. Infrastructure investing and the availability of financial market instruments are especially important in the current macroeconomic environment: With high unemployment, public and private sector deleveraging and structural issues in the banking sector (particularly in Europe), the current recovery has been weak by historical standards.

Meanwhile, several impediments are holding back infrastructure spending: Ongoing banking sector deleveraging restricts lending and uncertainty regarding regulatory and political developments further reduces market participants' appetite to commit long-term capital. Consequently, there is a risk that the emerging infrastructure financing gap will not be closed; this would not be conducive for financial market stability and economic growth in general. Specifically, annual infrastructure spending requirements are estimated to increase from USD 2.6trn currently to around USD 4.3trn by 2030.

Institutional investors such as insurers or pension funds are naturally disposed to making long-term investments in productive real assets given their liability structure. By assuming a larger role in intermediation of long-term capital, insurers in particular can enhance their existing risk-transfer function and market stabilising role. At this stage, there is a lack of adequate financial market instruments for institutional investors to easily access the infrastructure asset class, although infrastructure debt meets many of their needs: Regular cash flows, attractive risk-adjusted yields, and better credit quality versus other comparable loan or corporate bond classes.

Based on the importance of infrastructure spending and the mentioned impediments, this publication has identified a set of specific policy recommendations. Given their expertise and track record in infrastructure finance, international financial institutions and multilateral development banks can act as a catalyser for policy-setting standards and develop a generally accepted best-practice framework for infrastructure due diligence. Ultimately, a transparent and harmonised infrastructure asset class on a global level is needed to close the emerging funding gap. This can be further supported by enhanced information sharing and disclosure around infrastructure data, harmonisation of infrastructure investment legislations and review of Solvency II standard formula and other regulatory capital charges.

Swiss Re is proposing a private/public market initiative. The proposal would leverage the role and expertise of international financial institutions and introduce new elements such as pooling of infrastructure projects and insurance facilities to increase the lending capacity of multilateral development banks. Harmonisation of infrastructure investment and standardisation is key: Establishing common national legal and operational requirements as well as standardised bond documentation and due diligence process would help to create the desired asset class characteristics, increasing its investment.

The policymakers' debate on infrastructure finance and long-term investing in general has gained traction. The momentum of the discussions underway with the private sector, coupled with the macroeconomic environment and need to increase growth, create a unique "window of opportunity" to follow words with well-coordinated policy action.

Appendix

Global Initiatives Map – Background information

EU/Europe

Horizon 2020 – The EU Framework Programme for Research and Innovation:
Europe 2020 is a research and innovation initiative aimed at securing Europe's global competitiveness. The project's key objectives are: to strengthen the EU's position in science, foster industrial leadership in innovation, promote access to capital and support for SMEs, and to address key issues such as climate change, affordability of renewable energy, food safety etc.

Timeline: 2014–2020

Stakeholders: European Union and its members, European Research Council

Budget: EUR ~80bn

Ref: http://ec.europa.eu/programmes/horizon2020/

Competitiveness of Enterprises and SMEs (COSME):
The initiative aims at providing better access to finance and markets for SMEs, as well as supporting and encouraging an entrepreneurial culture within Europe. In order to achieve sustainable business creation and growth, the initiative intends to reduce the administrative and regulatory burden for SMEs, as well as provide support via the Entrepreneurship 2020 Action Plan.

Timeline: 2014–2020

Stakeholders: EU and its members

Budget: EUR 2.3bn

Ref: http://ec.europa.eu/enterprise/initiatives/cosme/index_en.htm

European Long-Term Investment Funds (ELTIF):
The ELTIF is a collective investment framework allowing investors to put money into companies and projects that require long-term capital. It is aimed at investment fund managers offering long-term investment opportunities to institutional and private investors. Managers have five years to invest 70% of the fund in eligible long term assets, with the remaining 30% buffer held in UCITS eligible assets. Funds will only be offered to AIFMD (Alternative Investments Fund Managers Directive) approved managers, with strict regulation on redemption of funds.

Timeline: proposed in July 2013

Stakeholders: EU and its members

Budget: No EU funds, private capital only

Ref: http://europa.eu/rapid/press-release_MEMO-13-611_en.htm

European Association of Long-Term Investors (ELTI):
The ELTI is a non-profit foundation association, comprised of financial institutions in the EU specialising in long-term credit. The organisation aims at promoting and enhancing long term investment, in accordance with the objectives and initiatives of the EU. Its aim is to strengthen cooperation between institutions, encourage academic research on the subject, exchange information amongst members and to inform members of their potential role in long-term investing.

Timeline: launched in July 2013

Stakeholders: 16 European Financial Institutions including development banks, commercial banks and the EIB

Budget/capacity: combined balance sheet of EUR 1.5trn

Ref: http://www.eib.org/about/press/2013/2013-102-mobilisation-of-european-long-term-investors-to-foster-eu-growth.htm

Prime Collateralised Securities (PCS):
An independent, not-for-profit initiative created to re-enforce the asset-backed securities market in Europe, with the aim "to generating robust and sustainable economic growth for the region". The initiative is designed to enhance and promote quality, transparency, simplicity and liquidity throughout the asset-backed market. In defining these standards and best practices, the PCS label aims to re-vitalise a robust asset-backed market that directly benefits the real economy.

Timeline: launched in 2012

Stakeholders: 42 members – corporate entities involved in the asset-backed market

Ref: http://pcsmarket.org/pcs-organisation/

2020 Project Bond Initiative:
As a joint effort between the European Commission and the EIB, the objective of the initiative is support capital market financing for large infrastructure projects. The aim is to establish debt capital markets as an additional source of financing for infrastructure projects. Project companies raising senior debt in the form of bonds profit from credit enhancement provided by the EIB, supporting the placement with institutional investors. The credit enhancement is provided via the subordinated tranche, either through a loan or a contingent credit line which can be drawn down over time dependent on revenue generation. This initiative is supposed to complement, not to replace other sources of financing.

Timeline: Pilot phase launched in 2012

Stakeholders: EU and its members, EIB

Budget: Maximum size of EIB financing is the lower of EUR 200m or 20% of credit enhanced senior debt

Ref: http://ec.europa.eu/economy_finance/financial_operations/investment/europe_2020/

EIB's EUR 10bn capital increase:
As a result of the financial crisis, the EIB contributed to the EU economic recovery plan with a significant but temporary increase in financing activity in 2009 and 2010. To continue to play a counter-cyclical role, the EIB has strengthened its capital and financial capability in 2013. The EUR 10bn increase allows the EIB to provide up to EUR 60bn in additional lending for projects across the EU over the next 3 years.

Timeline: 2013–

Stakeholders: EU and its members, EIB

Budget: Financing of EUR 60bn allowing EUR 180bn of additional investments over 3 years

Ref: http://www.eib.org/attachments/lending-policy-associated-with-a-capital-increase-final.pdf

Global

G20/OECD high-level principles of LTI:
The G20 leaders encouraged the OECD to develop High-level Principles of Long-Term Investment Financing by Institutional Investors. The principles are aimed at supporting LTI particularly among institutional investors such as pension funds, insurers and sovereign wealth funds. The principles establish a framework which lays out the precondition to long-term investing such as, amongst others, macroeconomic environment, transparent plans and opportunities for private sector involvement.

Timeline: Presented at the G20 Summit in September 2013

Stakeholders: OECD, G20, FSB, APEC

Ref: http://www.oecd.org/daf/fin/principles-long-term-investment-financing-institutional-investors.htm

World Bank Global Infrastructure Facility (GIF):
The facility aims at channeling funds from World Bank member nations and the private sector into projects that will support growth in developing countries. The World Bank's strong credit standing and investment experience will aid lenders in identifying good long-term investment opportunities.

Timeline: launched in September 2013

Stakeholders: G20, World Bank

Ref: News articles such as http://online.wsj.com/news/articles/SB10001424127887324577304579058660663794356

World Bank/Singapore Infrastructure Finance Centre of Excellence (IFCOE):
In 2010, the World Bank and Government of Singapore have launched the IFCOE within the World Bank-Singapore Urban Hub (established in 2009) whose purpose was to work on urban development and creative financing solutions. The centre for excellence will offer an innovative business model that will combine global expertise with the operational and technical expertise of the bank, to support developing countries in infrastructure finance. Specifically, it will provide assistance with respect to the financial framework, the identification, preparation and marketing of potential projects, as well as helping with the technical process.

Timeline: Launched in November 2010

Stakeholders: World Bank, Government of Singapore, MIGA, IFC

Ref: http://www.jointokyo.org/files/cms/news/pdf/WB_Singapore_IFCOE.pdf

Multilateral Development Banks (MDB) Working Group:
This initiative aims to unlock the infrastructure project pipeline, to promote increased private sector participation and financing, as well as improving efficiency of infrastructure spending. As such, the MDB has developed an Infrastructure Action Plan, submitted to the G20 in October 2011.

Timeline: Submitted to the G20 in October 2011

Stakeholders: AfDB, AsDB, EIB, IADB, IsDB, WBG, G20 High Level Panel on Infrastructure

Ref: http://www.boell.org/downloads/MDBs_Infrastructure_Action_Plan.pdf

FSB Monitoring of regulatory impact on long-term investing:
In November 2012, the FSB was mandated by the G20 to assess factors affecting long-term investing. In February 2013, the FSB reported initial findings, and in June 2013 a workshop was organised to identify regulatory factors affecting the provision of LTI. The initiative aims to aid implementation of reforms to foster safe, sound and resilient financial systems that promote long-term investing. Thereby, the FSB reaches out to the public and private sector to identify any impeding regulatory factors to long-term investing.

Timeline: FSB mandate received in November 2012

Stakeholders: G20, Financial Stability Board

Ref: http://www.google.ch/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=6&ved=0CGgQFjAF&url=http%3A%2F%2Fen.g20russia.ru%2Fload%2F782245774&ei=pv-uUoXnBMnnywPylYDwCw&usg=AFQjCNEhKfltgvcGR185deF_u8gki1vBMQ&sig2=qPWd9uLCyrJWLW07tm8EFw&bvm=bv.57967247,d.bGQ

HGMs

BRICS-Led Development Bank:
The aim of the bank is to reduce the reliance of the countries involved on Western financial institutions. The bank will support the financing needs in HGM for infrastructure projects.

Timeline: Launched August 2013

Stakeholders: Brazil, Russia, India, China, South Africa

Budget: USD 50bn of capital shared equally

Ref: News reports such as http://www.reuters.com/article/2013/08/28/us-brics-bank-idUSBRE97R1BA20130828

Latin America pension fund investments in infrastructure:
Pension funds of various Latin American markets have collaborated to promote and enhance developments in infrastructure. Peruvian pension funds have developed a trust structure to improve investor capability. Chile has designed specific infrastructure bonds (pre-operative and operative bonds), tailored for the needs of pension funds, while Colombia has completed a similar project. Mexico has also looked for innovative solutions, creating structured products aimed at pension funds.

Timeline: Several developments over the past years

Stakeholders: Latin American pensions funds

Ref: http://en.g20russia.ru/load/782804292

http://www.oecd.org/pensions/private-pensions/S3%20G20%20OECD%20Pension%20funds%20for%20green%20infrastructure%20-%20June%202012.pdf

Power Africa: US-led initiative to support power access in sub-Saharan Africa:
The initiative aims to double power access in sub-Saharan Africa by developing newly found oil and gas reserves, as well as launching renewable energy projects. The US and its partners will initially work with eight countries, with more to be added at a later date. The initiative will develop regulation and support financing, on top of providing insurance, guarantees and technical assistance.

Timeline: Launched in June 2013

Stakeholders: Ethiopia, Ghana, Uganda, Mozambique, Kenya, Liberia, Nigeria, Tanzania, USAID, OPIC, EX-Im, MCC, USTDA, USADF, GE, Heirs Holding, Symbion Power, Aldwych Int., Harith GP, Husk Power Systems, The Africa Finance Corp,

Budget: USD 7bn from the US, USD 9bn from private sector partners

Ref: http://www.whitehouse.gov/the-press-office/2013/06/30/fact-sheet-power-africa

Asian Bond Market Initiative:
Created as a result of the 1997/98 Asian crisis, the initiative aims at promoting regional financial cooperation as a preventative measure for any possible future financial market crisis. The key objectives include the development of efficient and liquid bond markets in the region, fostering financial independence in Asia and supporting infrastructure development.

Timeline: Launched in 2003, revamped in 2008 and 2012

Stakeholders: China, Japan, South Korea, Indonesia, Laos, Cambodia, Brunei, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Ref: http://www.ltic.org/IMG/pdf/I_Ampri_-_Presentation_Sesi_6_-_RWBC_rev_13feb.pdf

US/Australia

National Infrastructure Reinvestment Bank:
A National Infrastructure Reinvestment Bank was first proposed by the US Senate in 2007. President Obama supported the legislation in 2008 and reiterated his backing in 2010. He also proposed to commit about USD 60bn in seed money over 10 years.

Timeline: Lack of Congressional support

Stakeholders: US Government

Budget/Capacity: Initially borrowed USD 60bn. leveraging up to USD 500bn of private investment

Ref: News articles, such as http://www.washingtontimes.com/news/2010/sep/6/obama-propose-50b-infrastructure-projects/

Australia's Industry Fund Management Infrastructure Fund:
The fund is designed for long-term institutional investors seeking access to Australian infrastructure assets. The fund invests across a wide range of sectors, finding attractive assets with long maturities.

Timeline: Launched in 2013

Budget/Capacity: Open-ended investment

Ref: http://www.ifminvestors.com/us/infrastructure/infrastructure-funds/australian-infrastructure-fund

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