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- **OECD 50th anniversary edition:
Focus on Long-term Investment and Growth**

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Foreword

This 100th issue of Financial Markets Trends coincides with the OECD's 50th Anniversary. Since the first issue in June 1977, Financial Market Trends has consistently analysed key structural issues and developments in financial markets and the financial sector while providing readers with an assessment of the latest trends in international and major domestic financial markets around the world.

This issue features the proceedings of a special Financial Roundtable on long-term investment and growth, a high-level dialogue held by the OECD Committee on Financial Markets with participants from the private financial sector on the occasion of the OECD's 50th Anniversary. Participants widely agreed on the need for regulatory and other policy incentives to overcome short-termism that impede institutional and other long-term savings pools from acting as long-term investors.

Articles on current issues, a regular key content of Financial Markets Trends, make up the following section. The first paper is related to systemically important financial institutions (SIFIs), their derivatives trading and consequences for financial stability – as well as policy options to address them. Following up on previous work, the next article discusses how widely the safety net of financial guarantee arrangements should be cast. Another study analyses the economic impact on pension funds and insurance companies of a low-interest rate environment. Finally, the outlook for the securitisation market and a summary of the OECD Statistical Yearbook on African Central Government Debt are presented in the last section of this issue.

A full historical index of articles and special features that were published in Financial Market Trends from no. 99 back to the first issue can be found at the end. A brief history of the OECD's work on financial markets over the past five decades will be published separately as a Special Supplement to this issue of FMT n°100.

We hope this issue of Financial Market Trends will again serve our readers with valuable information and analysis and we look forward to continuing to inform policy makers and market participants alike of current and structural issues that are shaping the financial landscape.

Comments and questions should be addressed to the Financial Affairs Division of the OECD Directorate for Financial and Enterprise Affairs (e-mail: fmt@oecd.org). Find out more about Financial Market Trends online at www.oecd.org/daf/fmt.

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PART I

Long-term Investment and Growth

Fostering Long-term Investment and Economic Growth

Summary of a High-Level OECD Financial Roundtable

by

Gert Wehinger*

As the OECD is celebrating its 50th anniversary, member countries are exiting from the biggest post-war financial and economic crisis and are trying to put their economies back onto strong, sustainable footing. While financial reforms should provide for a better, more sustainable balance between stability and growth, measures to strengthen the savings-investment channel should foster sustainable growth and development. These issues were explored at a High-Level OECD Financial Roundtable and are summarised in this article. Covered are the topics of financial reform to foster stability and long-term growth, the contribution of institutional investors to long-term growth, and creating a better environment for the financing of business innovation and green growth. With strained public sector finances, private capital needs to fill the funding gap for infrastructure and other long-term projects. Appropriate regulatory incentives to overcome short-termism, as well as risk-sharing arrangements e.g. via public-private partnerships, are needed in order to encourage market-based, long-term investment and risk capital financing. Better transparency, information and investor education can also play a role in enhancing long-term savings and investment.

JEL Classification: G1, G11, G2, G3, E2, H44, H54, H81.

Keywords: long-term investment, asset management, institutional investors, business and innovation financing, risk-sharing, public guarantees, public-private partnerships.

*

Gert Wehinger is a senior economist in the Financial Affairs Division of the OECD Directorate for Financial and Enterprise Affairs. This article is a summary of the discussions that took place at the OECD High-Level Financial Roundtable on Fostering Long-Term Investment and Economic Growth on 7 April 2011, with participants from the private financial sector and members of the OECD Committee on Financial Markets. This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or the governments of its member countries.

I. Background and overview

A special dialogue with the private financial sector on how to strengthen the savings-investment channel and foster sustainable growth and development

As the OECD is celebrating its 50th anniversary, member countries are exiting from the biggest post-war financial and economic crisis and trying to put their economies back onto strong, sustainable footing. While financial reforms should provide for a better, more sustainable balance between stability and growth, measures to strengthen the savings-investment channel should foster sustainable growth and development. To explore these issues, the OECD Committee on Financial Markets (CMF) held a special Financial Roundtable session on “Fostering long-term investment and economic growth”¹ in 7 April 2011. This dialogue with the private financial sector gathered high-level representatives from a variety of financial firms and academia, and on the occasion of the 50th Anniversary of the OECD, designated keynote speakers were invited to present the topics, followed by general discussions.² An issues note provided some topical background for the event and is summarised in Box 1. The following topics and issues for discussion were proposed and covered in three rounds:

Three rounds of discussion

- *Financial reforms to foster stability and long term growth:* What have reforms achieved so far or are expected to achieve in terms of making the financial system more resilient, and striking the right balance between stability and long-term growth? What further reforms (especially regarding capital requirements, accounting and taxation) are needed to set the ground for longer-term investment?
- *The contribution of institutional investors to long-term growth:* How to engage institutional investors in long-term investments. Which reforms are needed to change their “mindset”, e.g. with regard to their role as shareholders? How to engage clients of institutional investors for the longer run.
- *Creating a better environment for financing business, innovation and green growth:* How to foster investments in long-term assets such as infrastructure? What is the role of banks and capital markets in SME financing? How to support innovation financing (venture capital, private equity)?

The following sections summarise the presentations and discussions. Some of the key points that emerged from the meeting are provided in the remainder of this section.

Financial reforms are needed to foster stability and long-term growth

Since the crisis, deteriorating public finances, household deleveraging and differing speeds of recovery are posing challenges for global financial markets and are putting constraints on long-term investments. There could even be a credit crunch since investment demand is projected to increase.

Regulatory reforms in response to the crisis have progressed (e.g. Basel III), and there is good reason for regulators to be more conservative (e.g. higher capital requirements) – without unduly burdening the financial sector. Further reforms and improvements in supervision are needed in order to make the financial system more resilient to shocks. Finance should help to better allocate capital but should not be an end in and of itself.

Box 1. Promoting longer-term investment by institutional investors: select issues and policies

In OECD countries, the main institutional investors – pension funds, insurance companies and mutual funds -- held over USD 65 trillion at the end of 2009. Emerging economies generally face an even greater opportunity to develop their institutional investing sectors as, with few exceptions, their financial systems are largely bank-based. The main institutional investors in these countries are Sovereign Wealth Funds, which held over US\$4 trillion at the end of 2009. The growing clout of institutional investors has brought about a transformational change in financial systems. Traditionally, these investors – in particular the pension funds, life insurers and mutual funds that operate in retirement savings systems – have been seen as sources of long-term capital, with an investment horizon that is tied to the usually long-term nature of their liabilities. Institutional investors also reduce reliance on the banking system, acting as shock absorbers at times of financial distress.

However, concerns about the short-termism of these supposedly long-term investors and shortcomings in how they have been exercising their voice in corporate governance have led to calls for more “responsible” and longer-term investment by institutional investors, in particular by the pension funds, life insurers and mutual funds that operate in retirement savings arrangements. Long-term investors could provide benefits by (1) **acting in a counter-cyclical manner**, since as shareholders they can have direct and ongoing input into **environmental and other longer-term risks of investment and risk management strategies**; and (2) **playing a more active role in the financing of long-term, productive activities that support sustainable growth, such as cleaner energy, infrastructure projects, and venture capital**.

Moving from the current mindset to a longer-term investment environment requires a new “investment culture”. The market, by its nature, is unlikely to deliver such a change. Hence, major policy initiatives in a variety of areas are needed:

- i. **Reforming the regulatory framework for institutional investors:** policy makers need to promote greater professionalism and expertise in the governance of institutional investors. Collaboration and resource pooling can also be encouraged, in order to create institutions of sufficient enough scale to implement a broader investment strategy as well as more effective risk-management systems that take into account long-term risks. Regulators also need to address the bias for pro-cyclicality and short-term risk-management goals in solvency and funding regulations, and relax quantitative investment restrictions to allow institutional investors to invest in less liquid, long-term assets.
- ii. **Encouraging institutional investors to be active shareholders:** policy makers should remove regulatory barriers, allowing institutional investors to engage in active share ownership. They can also reduce the burden of active engagement (particularly for smaller investors) by encouraging collaboration via investor groups and can support national or international codes of good practice and issue guidance themselves of how they expect institutional investors to behave. In order to ‘nudge’ investors to follow such guidance, supervisors can shift the focus on their investigations, enquiring as to the turnover of funds, the duration of mandates given to external managers, how fees are structured, and voting behaviour.
- iii. **Designing policy frameworks that are supportive of long-term investing:** the general investment policy environment for long-term investments often lacks transparency and stability. Government support, such as long-term policy planning, tax incentives and risk-transfer mechanisms may be required to engage investors in less liquid, long-term investments, such as infrastructure and venture capital.
- iv. **Addressing knowledge gaps and behavioural biases:** retail investors need support to help them meet their long-term investment goals. Regulators should also become better acquainted with long-term risks and new financial instruments. In order to achieve these objectives, governments and other stakeholders should support information collection, public awareness and financial education campaigns that promote long-term investment and risk management.

Source: OECD (2011), *Promoting Longer-Term Investment by Institutional Investors: Selected Issues and Policies*, discussion note prepared for the Eurofi high-level seminar on the benefits and challenges of a long-term perspective in financial activities, held in Paris on 17 February 2011.

A new regulatory framework, as well as new accounting rules, tax incentives and new financial instruments for financing infrastructure could help to foster long-term investment and overcome the problem of short-termism.

However, short-termism and speculation as such should not be condemned, since they help provide market liquidity and function as helpful correctives. Restoring confidence in financial markets lost during the crisis is crucial for private investors to resume the provision of risk capital. Enhanced transparency, improved governance and more active shareholders are important elements in this effort.

The contribution of institutional investors to long-term growth

Institutional investors can play a major role in fostering long-term investment and growth. While financial markets need actors with different investment horizons in order to function well, long-term investors have the potential to act counter-cyclically and to play a key role in crisis recovery strategies.

The regulatory framework can certainly contribute to fostering investors' long-term orientation by providing the right incentives; however, more direct measures should also be used, such as long-term performance measurement systems and long-term compensation schemes. Stakeholders should also be made aware of the advantages of a long-term investment strategy, and shareholders' active engagement with their companies should be promoted. Co-operation among long-term investors through a "Long-term Investors Club" would also contribute to developing such an investment culture.

A long-term orientation by institutional investors is hampered by the liability side of their balance sheets, as their clients (the savers) require liquidity and threaten to withdraw funds often based only on short-term performance. Investor education (especially in regard to retirement savings), appropriate information and transparency, as well as new tax incentives could help to foster a long-term orientation among savers.

Pension funds are "natural" long-term investors, as they seek assets that match the duration of their long-term liabilities. Therefore, a "perfect match" for at least a portion of pension savings is infrastructure investments; such investments can promote productivity and efficiency in both the public and private sectors, and foster the type of economic growth that can address the environmental challenges to come.

Creating a better environment for financing business, innovation and green growth

Given astute and stable regulation, targeted measures, and a proper incentive system (including tax incentives), private capital can be mobilised to help close the infrastructure funding gap, which is actually widening since fewer public funds are available to finance the infrastructure needs arising in many economies.

It is also necessary to encourage institutional investors to be active shareholders of infrastructure projects. This could be achieved by developing the infrastructure-specific skills of asset managers, as well as resource pooling via long-term infrastructure funds that are managed by professional infrastructure developers.

Infrastructure investments, often characterised as a public good, tend to have very-long time horizons and operational uncertainties that cannot easily be assessed and monetised; thus, they tend to require more extensive policy intervention. Given their unique attributes, one promising approach to raising capital for infrastructure investments is through public-private partnerships (PPPs).

Financing of innovations that improve economies' competitiveness and generate growth is another important area for long-term investment. Public-private partnership funds, like the European Investment Fund (EIF), shoulder some of the risks associated with small and midsize enterprises (SMEs); they can thus promote entrepreneurship, technology, innovation, growth, employment, and regional development.

II. Financial reforms to foster stability and long-term growth

1. *Financial reforms to foster stability and long-term growth*³

Financial stability and growth are not mutually exclusive

After the Pittsburgh G-20 call for strong, balanced and sustainable growth, the focus of the global community seems to have shifted mostly towards financial and fiscal stability. But stability and growth are not mutually exclusive. Robust and sustainable growth requires financial stability and long-term fiscal consolidation; but financial stability and fiscal consolidation both require robust and sustainable growth.

A challenging framework for global recovery

The financial crisis had a significant impact on the public finances of most advanced countries throughout the world. The post-crisis framework for global recovery is very challenging and characterised by deterioration in fiscal balances in both advanced and emerging economies, accompanied by an increase in public debt in advanced economies in particular. Emerging economies are ahead of advanced ones in what appears to be a two-speed recovery.

The shift in global savings, and a widening savings-investment gap could lead to a credit crunch

A major shift in global savings has taken place, as savings rates in developed countries have declined during the past 30 years, while those of the emerging economies have risen strongly – with oil-exporting nations posting the strongest growth in savings. At the same time, global investment demand is estimated to increase to about 25% of GDP by 2030 – levels previously attained only before 1980. If savings do not increase in line with investment demand, the resulting savings-investment gap could lead to a credit crunch.

Rising investment demand for infrastructure and real estate

A major driving force behind the projections of increasing global investment demand are the relatively low capital stocks in China, India and other emerging economies. Investment is expected to double by 2030, with infrastructure and real estate, both typical long-term investments, reaching about USD 4 trillion and USD 5 trillion, respectively.

Rebalancing of global savings could reduce imbalances in infrastructure

The rebalancing of global savings could lead to a different resource allocation, reducing the imbalance between emerging and advanced countries in terms of their infrastructural and technological endowment. This could produce, in the meantime, more robust growth in advanced countries and the potential for revenue gains, more technology transfers and innovation diffusion in the emerging ones.

Levels of long-term investment need to increase globally, supported by appropriate regulation

Advanced, as well as emerging, economies should increase their level of long-term investment and compete in the global financial markets for private and public-private resources to finance this. There is a general need to enlarge the worldwide share of financing for long-term capital investment at the expense of short-termism and speculation. In order to better match long-term savings with long-term capital investment, new regulatory frameworks that are friendlier to long-term investment should be adopted on a national, regional and global level.

The overall regulatory setting has often provided unfavourable incentives for long-term investment

So far, the overall regulatory setting has often provided unfavourable incentives for long-term investment. In particular, accounting rules that are appropriate for investment banks and trading activities are not very relevant, promote short-termism and therefore sometimes penalise long-term investors. The new Basel III capital and liquidity requirements will probably discourage long-term banking and financial initiatives. Moreover, the IASB mark-to-market philosophy is particularly damaging for long-term investments, attributing instant market pricing to assets whose value takes a longer time horizon to ascertain; and the European Solvency II Directive will discourage insurance companies and pension funds from investing in infrastructure assets, not allowing them to properly match long-term liabilities on their balance sheets with long-term assets.

Long-term investors face liability and governance constraints that need to be lifted

While OECD figures show institutional investors' assets at USD 65 trillion in 2009, long-term investment of these assets is facing liability and governance constraints, allowing only a small part to be available as long-term capital. But if enough investors with a long-term horizon were active on financial markets, they could act as shock absorbers, as they did in the past. While institutional investors are starting to invest directly in core infrastructure assets and are increasingly becoming familiar with this asset class, it is estimated they are investing only around 2% of their assets, on average, in infrastructure, much below their balance sheet potential for long-term investment, estimated at USD 7 trillion. Equity demand for infrastructure is likely to increase, but if the supply of capital does not follow suit, this may result in an infrastructure "equity crunch".

Further reforms include tax incentives, better corporate governance, and mechanisms for (PPP) project financing

Regulatory reforms conducive to long-term investment should involve not only accounting standards and prudential principles, but also: (1) tax incentives; (2) better (sectoral) regulating mechanisms for project financing initiatives; (3) better corporate governance (including compensation) systems; (4) new long-term financial instruments that source from both public and private funds (perhaps drawing from the recent European experience with equity funds, such as Marguerite and InfraMed, and EU project bonds); and (5) credit-enhancing mechanisms to lower the risk and decrease the cost of long-term initiatives in strategic sectors, such as infrastructure, energy and technology.

2. Creating resilient and efficient financial markets: where do we stand?⁴

Flaws in the regulatory system exacerbated the crisis

The pre-crisis regulatory framework was characterised by many flaws and weaknesses that have now been recognised. For example, the Basel II rules were based on the principle of delegated supervision via allegedly sophisticated bank internal models. Some of the main flaws of that approach were model uncertainty, data problems (small samples), pro-cyclicality of capital

requirements, largely neglected liquidity risk, as well as endogenous risk. While many of these flaws were known, they were not acknowledged, and later exacerbated the crisis, leading to massive bank bail-outs and other unprecedented monetary and fiscal support measures; while helping to stem the crisis and attenuate its negative effects, these measures also carried large opportunity costs.

Finance should not be a purpose in and of itself

Post-crisis financial reforms have tried to address some of the shortcomings of the previous regulatory framework, and are based on the premise that finance should help to improve the allocation of capital but should not serve a purpose in and of itself. The new regulatory framework should be able to provide financial stability while supporting long-term growth.

International co-operation on reforms is important

Given the structural interdependence of economies and their regulatory frameworks, international co-operation is important in this effort, since reform policies need to be mutually consistent and joint action is needed to maximise welfare and avoid regulatory arbitrage. This is why the co-ordinating role of the G20 – and the FSB in the area of financial reform – is important. The CMF, in this context, can contribute to this effort, and should also look at issues beyond narrow financial ones, for example, financial education and consumer protection.

Higher capital requirements are needed for the financial system to be self-insured

Reforms underway are heading in the right direction; however, they need to go further, fostering self-insurance via higher capital and liquidity requirements and a leverage ratio such that the tax payer does not have to “pick up the bill” when things go wrong. There are good reasons for regulators to be more conservative. As academic studies have shown, higher capital requirements do not necessarily imply a higher user cost of capital (the usual industry argument against higher requirements).

Further reforms should address systemic and macro issues, including SIFIs and non-banks

Micro-prudential policies need to be complemented by macro-prudential measures, and fallacies of composition can be avoided by more fully taking into account the systemic and macro aspects. To avoid the “public sector being taken hostage”, the implicit guarantees for systemically important institutions should be addressed via resolution plans, higher capital ratios, and the regulation of non-banks. Institutionalising the macro-dimension of supervision via the European Systemic Risk Board and the US Financial Stability Oversight Council (created by the Dodd-Frank Act) is important. However, these institutions should not be seen only as warning devices but also as able to take action on those warnings.

3. *Lessons from the financial crisis*⁵

Crisis was driven by the underpricing of risk and the lack of transparency

Low interest rates, search for yield and the underpricing of risk, as reflected in 15 years of falling risk premiums, were the driving factors at the origin of this crisis. While confidence in the financial sector and the health of its balance sheets was still strong, asset bubbles were building up; when the real estate market bubble started to deflate, bad loans increased. As financial engineering had distributed risk more widely, a lethal spiral was set in motion, and the loss of confidence in financial markets made funding markets dry up. Lack of transparency regarding toxic assets (*i.e.* not knowing “who carries the monkey”) was one of the major problems as the crisis developed.

Stabilisation involved massive government intervention; cheap money was the cause, but also the cure of the crisis

Since the risks were temporarily absorbed by governments, and central banks provided a flood of funding for the banking system, an even greater crisis was averted. While this restored market confidence, the redistribution of losses to governments has become protracted. Given the fundamental role of the financial sector in the economic system, there was perhaps not much of an alternative to the bail-out of private-sector risk takers, *i.e.* to merging weak public finances with the even-weaker banking sector balance sheets. In the end, cheap money was the cause, but also the cure of the crisis. Alternative solutions were not tested in this crisis, but they need to be developed in order to avert such crises in the future and their contagion of public finances.

Clear guidelines for implementing bank resolutions are crucial

Going forward, banks need to be prepared to fail. Bank resolution needs a clear “game plan”, being aware that time is of the essence, and bearing in mind that government money should not be at risk. Equity holders should be first in line as they have been paid to take this risk. Furthermore, subordinated funding should also carry its share of the risk, while depositors should be protected up to a reasonable limit.

Current long-term fiscal burden does not allow for another large-scale bailout

The banking sector problems have put public finances under stress, and are adding to the long-term fiscal burdens of increasing health care and retirement costs. Sovereign issuers at the core of the sovereign debt crisis (*e.g.* Greece, Ireland) should consider their options and realise that the “waiting game” is not always the best solution, in particular if interest rates are well beyond the economic growth rate.

Regulation needs to restore confidence in the financial markets

Regulatory reforms underway, like Basel III, Solvency II, Dodd-Frank and EU Derivatives regulation, should help to restore confidence that was lost in the last crisis. These reforms will also have to include shadow banking (as current proposals do), even though markets may find ways to circumvent such new regulations. Restoring confidence in financial markets is crucial in order for private investors to provide risk capital. However, return expectations may have to be lowered; the hype of 2005-2007 is probably not the right benchmark level. Risk should be compensated based on to the current risk appetite of the investor.

Pension fund balance sheets are not healthy enough to provide risk capital

Institutional investors can take part in providing risk capital, but only in so far as their balance sheets are healthy. In this regard, pension funds are perhaps not well-placed to take on this role as their balance sheets are weakened by large liabilities, the real, high levels of which are hidden by accounting rules (like banks’ weaknesses were hidden some years ago). The real risk capacity of pension funds – and institutional investors more generally – is therefore likely to be overestimated. Improving accounting transparency should thus be one of the major goals of financial reforms.

Improving governance by active ownership is not easy

Improving the governance of financial institutions is another major goal, as the lack of good governance was one of the root causes of this crisis. This was mainly due to the lack of “active” ownership by a huge, diversified investor base the size of which turned ownership into a public good (“if you are owned by everybody, you are owned by nobody”). There is no easy solution to this problem; nevertheless, current reform efforts should create incentives for investors to act as owners, not just as “investors”.

4. Discussion

The sustainability of pension systems bears watching

Not only the sustainability of public finances bears watching but also the sustainability of pension systems, where future sources of stress are building up. There are risks in private pension funds due to changes in assets and liabilities resulting in widening funding gaps, but the biggest risks lie in public pension funds that have only liabilities and no assets.

Shareholder-value model vs. the stakeholder model; SMEs tend to have longer-term orientation

Despite some criticism of the shareholder-value model (in which profits are driven by short-term shareholder interests), the data presented seem to indicate that the US (where the shareholder value model is prevalent) seems to be performing better than other economies where the stakeholder-value model is more dominant. However, any causal relationship the data may imply is not that straightforward, and may not hold for economies with a large share of SMEs. SMEs that are not listed and do not depend on public shareholders are normally more longer-term oriented and perform well over time, in terms of profitability and also in terms of employment, where they are major contributors.

Lack of active ownership by pension funds is a problem not easy to overcome

As shown by OECD work on corporate governance, there is a real problem in that institutional investors, in particular pension funds with large concentrated holdings, are not actively engaged as shareholders. This may also imply a problem of governance at the level of the pension funds themselves. It was also noted that there was a lot of “box-ticking” and proxy voting by pension funds, and not real engagement as owners. However, most of the time pension funds’ investments in large companies are relatively small, and therefore their votes do not carry much weight anyway. But again, active ownership needs to be promoted, even though there is no easy solution for how to do this. Networks of institutional investors could help in these efforts.

Bailing out bondholders buys time in a crisis, but is not a good long-term solution

It is debated whether bondholders should participate more in the losses of the debt-issuing company (and therefore take a bigger interest in the corporate governance of the companies to which they lend); however, this option is not always available in the middle of a crisis (as it was not in September 2008 when Lehman crashed and the crisis erupted). In such cases, saving the bondholders buys time, but this cannot be done indefinitely.

Speculation can play a positive role as a warning and disciplining device

In pointing out that investments in subprime securities could be regarded as longer-term investments, a commentator stressed the potentially positive role of speculation as a warning and disciplining device. The danger of making investments for the long term is that such warning signs may be overlooked, and changes in circumstances and technology that would require reallocation of assets may not be taken into account. Speculators have often been able to warn of problems way ahead of regulators or institutions as well as most model-based analytical tools (as models usually break down when a crisis hits). One has to be aware that there are many “unknown unknowns” and since one cannot be sure when the next crisis will hit, one has to be prepared to react. It is also noteworthy that speculators such as hedge funds – which tend to be better at pricing risk – were not bailed out during the latest crisis, and many of them collapsed without systemic effects.

The insurance sector proved resilient in the crisis and should not be overburdened by new regulation

It was highlighted that a financially solid government – the lender of last resort – is a prerequisite for long-term investment. The crisis was, in principle, caused by too much credit, which had been created by the failure of regulation and mismanagement in the banking system. The insurance sector, however, has fared well during the crisis (Box 2). In non-life insurance, there are now even some indications of overcapitalisation, and the life insurance sector has also recovered very forcefully. The main responsibility of life insurance companies and pension funds is to deliver on their promises, without specific regard to long-term investments, and one should not overburden these institutional investors with such additional obligations. Another, related point is that institutional investors also have to heed the call of investors now demanding higher liquidity (the new “paradigm”), mostly a precautionary reaction to the crisis.

Box 2. Comment on long-term investment: the insurer’s point of view

Thomas Hess, Chief Economist Swiss Re

I want to make a few points in the context of long-term investments and insurance.

1. We appreciate that the role of insurers and pension funds as long-term investors is highlighted by the OECD. We fully agree that insurers and pension funds are natural investors in assets such as private equity, venture capital funds, infrastructure projects, etc., given that many of the liabilities insurers hold assets against are long-term. We also fully agree on the importance of long-term investment for growth and the welfare of our societies.

2. At the same time, it has to be made clear that the primary role of insurers is to provide insurance cover for individuals and corporations, and thereby help the insured to cope with the risks they face. At the risk of stating the obvious, I cannot resist mentioning that the first priority of insurers and pension funds is: we have to deliver on the promises made to policyholders. When insurers invest, it therefore has to be seen in this context. Insurers are only able to take long-term risks if they are able to cope with it, without compromising on their solvency.

3. Fixing regulatory bugs would favor long-term investments. Many observers are surprised how little long-term investment risk insurers assume. For insiders, this is hardly a mystery. The reason often boils down to regulation: when pro-cyclical elements of regulation “force” insurers to sell risky assets at the worst possible moment, one should not wonder why insurers avoid such risky assets. (Similar issues can arise in relation to accounting standards.) Also, state-enforced, asymmetric profit-participating schemes (life policy holders share in profits but losses have to be absorbed by shareholder capital) are clearly disincentivising insurers to take investment risk. Another problem is the double taxation of equity capital, which disincentivises the holding of equity capital. This reduces risk appetite in general, and for long-term investments, in particular.

4. After the massive crisis our societies are more vulnerable. Even highly rated government bonds and senior bank debt may be not classified as genuinely “default-free” anymore, and perhaps this is correct. Another development is that interest rates are currently kept extremely low in order to stabilise banks and the economy. Both developments have serious consequences for insurers, which are relying on safe assets and have given some kind of return guarantee. Both developments basically lower insurers’ risk appetite for long-term investments.

5. I believe the worst outcome of the financial crisis would be to extend further regulation on the insurance sector. (Specifically, systemic risk regulation for insurers must be avoided; insurers did not cause the crisis; they have not aggravated it, and they are not responsible for the recessionary impacts.) Such regulation would only force insurers further into low-returning government bonds.

6. In summary, the right way ahead would be to free up insurers from unnecessary restrictions and make sure that government bonds are genuinely “safe” assets again in the future. Coupled with a stable macroeconomic environment, this will allow insurers to continue to remain pivotal investors in long-term assets, which will be beneficial to society as a whole.

Source: Written statement by Thomas Hess, Chief Economist Swiss Re, based on his comments delivered at the OECD High-Level Financial Roundtable on Fostering Long-Term Investment and Economic Growth on 7 April 2011.

The role of life insurers and pension funds as long-term investors could be diminished by new regulations

Meanwhile, current regulations and accounting rules are pushing insurance companies into procyclical behaviour. This should be corrected, keeping in mind that during this crisis insurance companies showed much less procyclical behaviour than other market participants. Pension funds and life-insurance companies are natural long-term investors in that their liabilities are long-term, but if risk-based regulation comes into play, more procyclicality will be created. While the new Solvency II regime is positive in that it emphasises risk management, it may force insurers into procyclical behaviour, selling assets at the trough of their valuation – and not fostering their role as long-term investors.

Some other regulatory and tax rules also distort investment decisions

Furthermore, the new regulation will lead insurers into holding more government bonds – which currently cannot be seen as absolutely safe investments (at this juncture, equity is probably safer than Greek government bonds). Insurers' investment decisions are also curtailed by the requirement to rely on ratings agencies' ratings rather than their own judgements. And, most tax systems still distort financing decisions and create excessive leverage by favouring debt over equity financing; most countries put a double tax burden on equity. This double taxation of shareholder equity was also one of the drivers of the crisis.

III. The contribution of institutional investors to long-term growth

5. Long-term investment to foster sustainable growth and financial stability⁶

Long-term investors help to complete and stabilise markets

Long-term investors can support sustainable growth and financial stability. Given the structure of their balance sheets, long-term investors have the capacity to smooth their resources over the medium and long term. They are not prone to the herd mentality and are able to retain assets in their portfolios in times of crisis, and in this way play a counter-cyclical role. Financial markets need investors with different views and investment horizons. While speculators play an important role (as was mentioned in the previous section), it is likely to be the long-term investors, evaluating assets at their long-term intrinsic value rather than marked-to-market, that have a stabilising effect on markets. Until a few years ago, it used to be common knowledge that insurance companies would buy equity in a downturn and hold it for the longer term. Unfortunately, this is not the case anymore.

Long-term investments contribute to economic growth in many ways

Long-term investors can make an important contribution to growth in various ways, most importantly by financing long-term projects, such as infrastructure. In Europe, for example, infrastructure needs in areas such as transport, energy, and climate change are estimated to be EUR 2 trillion by 2020. By investing for the long term, they are likely to implement a more responsible investment policy and to be more active investors, thus improving the governance of the enterprises they invest in. Long-term investments can also provide higher returns for long-term savings and pension plans, thus alleviating some of the funding gap that is widening due to low interest rates and an increased demographic burden.

While long-term savings are

Long-term savings are relatively abundant in Europe. In France, the savings rate is 16% of net available income, the main saving product being life insurance

relatively abundant in Europe, their share available for long-term investments is decreasing

contracts (EUR 1.4 trillion of technical reserves) with an average maturity between 10 to 12 years. This long-term orientation of savers is also reflected in the fact that even if early redemption options are offered, few savers are using them. However, the capacity of investors to use their assets for long-term investments is decreasing. According to a recent report by Oliver Wyman, in 2009 long-term institutional asset owners owned slightly under half of the world's professionally managed assets (around USD 27 trillion out of USD 65 trillion), but only 25% of their assets (USD 6.5 trillion) are being used for long-term investing. This is partly due to changes in strategies but also to short-term biases in regulations (accounting and prudential standards) and in market practices (delegated management, etc.).

The regulatory framework needs to provide incentives for long-term investments

Thus, one approach to reduce the long-term financing gap and encourage these institutions to invest in long-term assets is to make the regulatory framework more compatible with long-term investments. Accounting, prudential and fiscal rules have to take better account of the specificities of long-term investors' balance sheets and time frames and enable them to play a counter-cyclical role. Such incentives already exist regarding long-term government bonds, which in accounting terms can be assumed to be held to maturity (thus not marked-to-market) and have low capital charges. Such incentives should also exist for other types of long-term investment. Furthermore, as was pointed out in the previous section, taxation should also provide incentives to invest in longer and riskier assets. Overall, governments can play a vital role in setting the rules and creating the conditions that encourage the flow of capital from the world's savers into long-term investments.

Appropriate instruments of long-term investment can attract available savings

To direct savings into the funding of big infrastructure projects it will be necessary to develop innovative financial instruments that combine public and private resources. Project bonds are interesting in this respect, like those planned by the EU Commission to provide EU support for project companies issuing bonds to finance large-scale infrastructure projects. The Commission's key role would be risk-sharing with the EIB and other financial partners, enabling them to provide guarantees or loans to support such bonds. In this way, these new financial instruments could help markets to better play their role of channeling savings to productive investments.

Fruitful co-operation via the "Long-term Investors Club"

Co-operation among long-term investors should be enhanced to allow them to promote their business model. This is the aim of the "Long Term Investors Club" set up in 2009 by KfW, *Cassa Depositi e Prestiti*, EIB and *Caisse des Dépôts*. This club now encompasses 12 financial institutions representing the world's most important economic regions, with total assets of USD 3 trillion.

6. Long-term investment challenges for the asset management industry⁷

The asset management industry recovered well from the crisis

While the global asset management industry was severely hit by the worldwide financial crisis in 2008, thanks to the equity market upswing, it bounced back in 2009. Total assets under management (AuM) in Europe are estimated to have reached 100% of GDP at the end of 2009, up from 80% at the end of 2008. This percentage is above the EU average in the UK (209%), Belgium (136%) and France (131%), where asset management plays a relatively

larger role in matching the needs of savers and investors, both in domestic and international markets. In 2010, the European investment fund industry bounced back to the asset level reached before the global financial crisis, benefitting all categories of long-term funds.

More diversification and active asset allocation increased resiliency

The resiliency of the asset management industry can be explained by a more diversified industry and investors seeking greater diversification in asset classes, which now include new strategies and alternative assets besides traditional equities and bonds. Investment products with an element of active asset allocation have seen rising demand from defined-contribution plan members and retail investors. “Newcits” (UCITS compatible funds) are adopting absolute return strategies and are attracting interest both from institutional investors and from high-net-worth individuals. However, they have not yet been tested during a severe downturn, and concerns have been raised about their massive use of swaps, derivatives and leverage, as well as of “custom-made” eligible assets.

Asset managers should act as “stewards” of their clients’ interests

The asset management industry is a vital source of economic growth, as an intermediary in the savings-investment channel. The industry is also one of the most important providers of liquidity needed to ensure the smooth functioning of capital markets. Furthermore, the industry gives its clients access to a large range of instruments and markets to help them diversify their portfolios and achieve their investment goals. If properly pursuing their mandate, asset managers should be stimulating overall economic development by continuously monitoring and allocating financial resources to the most promising investments. In doing this, and in taking on the role of responsible investor, asset managers should also act as the “stewards” of their clients’ interest.

Short-termism may be overcome by more transparency, better communication and investor education

Since clients can withdraw their money on almost daily notice, however, the liabilities of mutual funds and asset managers are less “sticky” than those of pension or life insurance funds. This might lead to excessive short-termism or a herd mentality on the part of asset managers, who need to keep a close eye on the liquidity of their investments and may therefore forego higher-return opportunities. A sound governance framework, more transparency, better communication with clients and better management of their expectations may be needed to overcome this problem. But clients themselves, at the institutional as well as retail level, will also have to adopt more of a long-term view in order to appropriately evaluate the risk-return parameters of their portfolios.

7. *The perfect match – or the lost opportunity?*⁸

Infrastructure investments could be a perfect match for a significant portion of pension savings

Infrastructure investments have the potential to promote productivity and efficiency in both the public and private sector and to foster economic growth. Life insurance companies and pension funds naturally seek to invest in long-dated assets that match their long-term liabilities. To ensure decent returns, they often prefer real assets like infrastructure, and should thus be well-positioned to provide the capital needed for maintaining, renewing and expanding infrastructure and public real estate, and thereby perhaps also benefitting the environment.

But short-termism must be overcome, preferably through regulation

However, as was also outlined in the Secretariat's background note (see Box 1), these institutional investors are much too oriented towards the short term, partly due to the nature of current regulation and accounting rules, as well as the lack of a shareholder culture. Regulators should be interested in changing that, and on not imposing further restrictions that impede long-term investment. Change needs to happen rather quickly, before IFRS4 and Solvency II specifications are finalised.

Capital needs are enormous and cross-border investments pose specific challenges

The capital required for infrastructure development and to meet environmental challenges is enormous. The Vision 2050 report by the World Business Council for Sustainable Development (WBCSD) estimates that about USD 40 trillion will need to be invested worldwide in urban infrastructure during the next 20 years, with clean water, heating/cooling and other energy areas as the largest components. A significant part of the investment is needed in emerging economies, while the pension funds' capital has so far mostly been accumulated in advanced economies; this presents a challenge for asset managers to invest in public infrastructure in geographically distant economies with different regulations.

Environmental challenges posed by infrastructure and other commercial real estate is huge

The environmental challenge of infrastructure and other commercial real estate is huge. About 40% of primary energy worldwide is used by residential and commercial buildings. Imposing stricter environmental regulations on all new entities, with a phasing-in period for all existing physical stock, will allow technologies to be adjusted over time, becoming more efficient and making the cost of environmental upgrades affordable. Since direct investment in early stage innovative technology is risky, diversification is key, and public subsidies could be used to attract private investors. Another, related mechanism could be mandatory contributions for new construction, thus creating an "equity tranche" in which pension asset managers could then participate in order to facilitate the project. Also, the pricing of ecosystem services into national accounts needs to be implemented. Governments must provide guiding principles and "raise the bar" and then let the market mechanisms work within the guidelines established.

8. Discussion

Inappropriate application of Basel-like rules to non-banks should be reconsidered

The regulatory environment should be adjusted to help overcome a bias towards short-termism. For this to occur, one also needs to distinguish between regulation concerning different classes of investors and regulation concerning different types of investments. For example, while the Basel III regulations *de jure* concern commercial banks, some parts have been carried over to Solvency II for the insurance industry, and Basel-like rules are *de facto* often applied by market participants to other investors to which these rules are not suited. Thus, while the "Pandora's box" of Basel III should not be re-opened, the extended application of its rules to other parts of the financial industry should be reconsidered, in particular as regards Solvency II. As it is an EU directive, it should, in principle, be relatively easy to change this into a Solvency III directive that addresses the needs of long-term investors through appropriate incentives. Furthermore, in implementing Basel III, the treatment of long-term investments secured by real collateral could be given special attention. In fact, the FSB

chairman made this a point of further reflection at a recent meeting of the Long-Term Investor Club. In implementing the Basel rules, the United States has taken into account the specificities of its financial sector and economy, so it is very conceivable that Europe could take into account the specific needs of the European economy when implementing Basel III, especially as regards long-term investment.

Policy intervention to address short-termism could include preferential dividend treatment for longer holding periods – as well as a financial transactions tax

Addressing short-termism through regulatory intervention may take time to implement and function effectively, and would most probably not work if done using a piecemeal approach. The preferential tax treatment of long-term investments may be a useful measure, for example, by tying dividend tax rates to the holding period of the underlying equity investment, with rates becoming more favourable the longer the holding period. Another measure could be the introduction of a financial transactions tax that could improve economic efficiency if it succeeds in curbing purely speculative, short-term investment behaviour. Such behaviour diverts resources to “treasure hunting”, instead of making them available for longer-term productive activities that benefit society. Such a financial transaction tax could encourage a long-term investment horizon and may also be compatible with sustainable and productive investments, such as those mentioned by previous speakers.

Regulation may also need to focus on inflation-adjusted cash flow and other criteria

Another factor that promotes short-termism was mentioned: the fact that most of the liabilities of institutional investors are somehow implicitly indexed to inflation, while few instruments offered on the asset side seem to provide a good hedge against inflation; hence the investment horizon is shortened. But infrastructure investments, as another speaker pointed out, usually provide a relatively good inflation hedge. As was noted later in the discussion, equities are not good at providing such a hedge; they are volatile and should be treated as such in investment strategies.⁹ Other, longer-term investments with more stable, and often inflation-adjusted cash flows, are available and should be used to hedge against inflation. It was also pointed out that pension providers have to deliver purchasing power; however, regulation focuses on nominal (not inflation-adjusted) terms. Therefore, regulations may need to focus more on the various aspects of real investments and returns, and in doing so foster a longer-term orientation.

Spot-curve valuation presents challenges

The valuation of pension fund liabilities based on a spot-curve (yield curve of zero-coupon, short-term debt) was mentioned as worthy of consideration.. On the asset side, investments may be needed that could mimic the spot-curve profile of the liabilities, characteristics that are more likely to be found in government bonds than in infrastructure investments. When spot-curve valuation is abandoned in favour of a longer-term view, then necessarily some kind of smoothing mechanisms need to be applied. But this would involve a general debate about accepting, or even promoting, such mechanisms.

Mark-to-market valuation can be useful

Another discussant, however, warned against abandoning mark-to-market valuation, as this would “turn off the light”, perhaps on something “we don’t want to see”, and hide otherwise valuable balance sheet information. This cannot be regarded as a useful way to overcome short-termism.

Risk concentration could pose a problem if a relatively large investment is a prerequisite for active shareholding

There were calls for investors to become more engaged in the companies they invest in, thereby improving their corporate governance; implicitly, these are calls against “outsourcing of market discipline to speculators and credit ratings agencies”. But the question arises whether, consequently, there could be a problem of risk concentration since large, “meaningful” investments may be required in order for shareholders to engage actively with the company. This may run counter to risk-based regulation and the goals of Solvency II. Preferential tax treatment and other regulatory measures to foster active shareholding could, in fact, even exacerbate this problem.

Liquidity is an important market component

A commentator suggested that the discussion should not be framed within the dichotomy of long-term vs. short-term (implying the former is good and the latter is bad), but rather that it should be acknowledged that short-term liquidity and diversity in time horizons are important components of well-functioning markets. The focus should be on the mismatch between the investment horizon (often linked to the long-term nature of liabilities) and the actual investment strategy. Often, investors confuse their objectives, which may be long-term oriented, with their strategies, and this may result in short-termism.

Government accounts should become more transparent to attract long-term investors

Traditionally, long-term investments have been backed by governments, since their relatively large balance sheets allow them to take on more long-term risk and to work within the confines of long pay-back periods. However, today government balance sheets are overextended in a number of countries, and for some of these countries debt issuance has become very expensive – despite the fact that global real interest rates are currently historically low and potentially supportive of growth. Part of the reason for the high financing costs of some governments is the opacity of their balance sheets, which makes it hard for investors to assess whether the purchase of a government bond would go towards financing transfers or investments (especially in infrastructure). There is also the problem of a public financing gap due to intergenerational transfers, *i.e.* future liabilities, as well as the maintenance costs of current infrastructure, which does not show up on government balance sheets but is information that investors may nonetheless want to take into account. Work by the OECD on these issues would be welcome.

IV. Creating a better environment for financing business, innovation and green growth

9. Investing in infrastructure: getting the conditions right¹⁰

Infrastructure improvements deliver agglomerative benefits

Promoting sustainable economic growth is a policy priority for OECD economies, and maintaining and building new infrastructure is crucial in supporting this goal. The renewal of economic infrastructure delivers agglomerative benefits by accelerating regional economic development, underpinning economic and industrial clusters and contributing to the healthy growth of cities. A Commission report on the future of London’s infrastructure highlighted the productivity gains from such agglomeration.

Infrastructure funds are

Macquarie’s Infrastructure and Real Assets (MIRA) business has played a lead role in the development of infrastructure as an investment class. The bulk of

attractive investment vehicles for pension funds and other institutional investors

its capital invested in infrastructure has been sourced from the global pension fund market – a good match as was pointed out by other speakers. Infrastructure investments are typically relatively low-risk and low-volatility, with regular, long-term revenue streams that are often inflation-linked, and the industry is well regulated. These characteristics are particularly appealing in the current environment, which offers historically low yields for other fixed-income investments such as government bonds. Infrastructure funds are thus attractive investment vehicles for pension funds and other institutional investors, since they provide diversified portfolios of infrastructure businesses.

A policy framework is needed to attract private capital for infrastructure projects

Infrastructure investment is expensive, and there is a backlog of ageing assets that need renewal in many advanced OECD economies, estimated at around USD 50 trillion through 2030 (OECD, 2007).¹¹ Given the poor state of public finances in many countries, the private sector will have to fill the large capital expenditure funding gap. In 2009, institutional funds globally had about USD 65 trillion in assets, and compulsory national or regional pension plans have the potential to accumulate large amounts of capital quickly. If the public sector provides the right framework for investment, the private sector will be able to contribute significantly to filling the gap.

Greater and better capital expenditure by infrastructure businesses can be facilitated by a “Regulated Asset Base” model

A first objective must be to facilitate greater and better capital expenditure by the owners of infrastructure businesses into their networks and assets. Many public sector organisations do not have a balance sheet and treat both operating and capital expenditure as fungible cash, making the latter vulnerable to cuts when budgets are tight – with negative long-term consequences. Introducing a balance sheet can improve the situation and allow for better assessment of what is necessary vs. unjustified expenditure. Combined with regulation via a “Regulated Asset Base” (RAB) model, this approach can provide a basis for securing returns for financial investors while also protecting consumer interests. First applied in the UK, the RAB model has also been implemented on the European continent, e.g. for European airports and the French toll roads: regulated price increases are subject to a capital expenditure requirement, thus helping to align business goals with wider public needs.

Regulators should recognise the relatively low risk level of infrastructure funds

A second objective is to unleash the existing capacity for more long-term institutional participation by not erecting unnecessary investment barriers for pension funds and other private institutions. In the UK, for instance, the level of infrastructure investment is estimated to be less than 1% of pension fund assets, compared with 8% to 15% in Australia and Canada. Infrastructure funds are classified as “alternative” investments because they are not yet well-understood and well-known. That knowledge gap can be overcome – and the OECD’s current work in this area is playing a valuable role in that regard. But it is also important that policy makers recognise the relatively low risk of infrastructure funds and take appropriate measures when finalising and implementing Basel III and Solvency II.

Avoiding the crowding out of private sector investment and frequent

But governments should also be wary of crowding out private sector investment through the intervention of publicly owned infrastructure banks and the like. Such public sector interventions should be confined to projects whose risks can realistically be managed only by the public sector. More importantly, while getting the regulatory framework right is crucial, governments should also

*regulatory
changes*

avoid making frequent short-term changes to the regulatory framework or introducing *ad hoc* taxation that undermines confidence on the part of investors (as seen recently in some renewable energy programmes in Europe).

10. How to foster investments in long-term assets such as infrastructure¹²

*Private sector
resources can be
mobilised to
bridge the
infrastructure
funding gap*

The mobilisation of private-sector funding is essential in bridging the infrastructure-funding gap that is being generated by the dramatic increase in infrastructure needs at a time when most major OECD governments are managing heavy debt burdens. Governments can foster investment in long-term assets such as infrastructure by: (i) aligning financial regulation with infrastructure policy objectives; (ii) implementing targeted public financial support for strategic projects; (iii) promoting active involvement in the management of infrastructure investments by institutional investors; and (iv) creating a stable but demanding regulatory framework for project procurement that takes into account optimum risk transfer and the availability of funding.

*With the right
policy framework,
investors can
make retirement
savings systems
more sustainable
and foster long-
term growth*

A carefully designed policy framework should encourage institutional investors (many of which have to match their liabilities to long-term assets) to take advantage of long-term investments, such as infrastructure, which can provide inflation-linked and stable cash flows. The implementation of such a framework could generate a double benefit for governments: fostering the financial stability of retirement-savings systems (which would be relying more on “tangible” assets) and enabling the development of strategic infrastructure projects that contribute to long-term growth.

*Constraints on
institutional
investors’ asset
allocation impede
long-term
investment*

However, current regulations often prevent the realisation of such benefits. Many OECD countries have quantitative constraints on institutional investors’ asset allocation, including for infrastructure, and there are liquidity requirements that also strongly penalise infrastructure assets. Furthermore, financial regulation in several OECD countries, notably in continental Europe, does not provide for capital investment vehicles with the lifetime/duration required to implement long-term equity investment in infrastructure projects. And as was discussed by certain speakers, while it is important to agree on adequate valuation measures, the mark-to-market approach is potentially detrimental to long-term investment. Likewise, solvency regulations (like Solvency II in Europe) may lead insurers to lower their exposure to less liquid, long-term assets, such as infrastructure.

*Capital markets
and banks, once
major sources of
debt financing,
are now
constrained*

Before the recent financial crisis, capital markets were a significant source of (project) debt financing, made all the more attractive by monoline insurers’ credit enhancements, especially in the UK and other European capital markets. Bank funding was abundant, with the provision of loans tailored to each project, very long tenors and low margins. The dramatic weakening in the credit ratings of the monolines as a result of the crisis saw such funds disappear. The resulting increase in the cost of interbank lending and the expectation of tighter regulations have constrained long-term debt funding by banks and also reduced the potential for loan syndication.

*Targeted public
measures can*

Therefore, finding alternative long-term debt sources is critical, in terms of amount, maturity and pricing. Some OECD countries have implemented targeted

support private infrastructure financing

actions that have played a key positive role for infrastructure financing, such as the Transportation Infrastructure Finance and Innovation Act (TIFIA) and a tax exemption for private activity bonds (PAB) in the United States. In Europe, the European Investment Bank (EIB) has also been supporting infrastructure by allowing banks to adapt their lending capacity to longer maturities, and recently launching a consultation regarding an instrument aimed at facilitating access to project bonds by institutional investors. These experiences show that targeted financial support by the public sector can facilitate access to long-term debt for projects, matching long-term investors looking for stable cash flows with long-term assets such as infrastructure projects.

Multilateral institutions such as the OECD could play a key role in building an infrastructure management culture among asset managers

Developing an infrastructure management culture among asset managers, investors and also the public sector will be essential in order to ensure that these entities obtain the best value from infrastructure investment. Infrastructure assets require a whole-life costing approach to provide best value to the public, and specific skills are needed to invest in these less-liquid, longer-term assets. Leading multilateral institutions, such as the OECD, could play a key role building this culture and in educating the financial community in infrastructure sector challenges and specificities. Regulatory frameworks and guidelines that focus on asset preservation and development and include profit-sharing plans could provide the right incentives and help to align the interests of stakeholders.

Long-term policy planning, complemented by adequate regulation, is key to attracting private investors to infrastructure investments

Infrastructure investments require long-term policy planning. To be credible, strategic policy frameworks should exceed the duration of political cycles and be built on wide political consensus. Stable and accessible programmes for infrastructure projects and public-private partnerships (PPPs) are key in attracting private sector investors, complemented by adequate regulation. For example, the introduction of lock-up periods for equity within PPP contracts can enable the creation of stable companies by committed investors. Regarding concerns about profitability due to changes in the cost of services over time, benchmarking or market-testing procedures throughout the life of a project could be introduced, and more generally a demanding regulatory framework at project level should ensure that projects remain cost-effective.

11. Financing innovation and small businesses¹³

Lack of access to financing is hampering innovation

Modern economies are increasingly reliant on innovation to improve their competitiveness and generate growth. However, surveys for the EU show that the lack of access to financing is one of the main factors hampering innovation activities in European enterprises. This and other weaknesses in the financing of innovation in Europe have been intensified by the recent economic and financial crisis, which could have a material adverse impact on economic growth if left unchecked.

Public funds have assumed an increased role in early stage innovation financing

Venture capital (VC) financing poses specific challenges. As less private venture capital became available during the crisis, public funds have assumed increased importance in the early stage financing of innovative enterprises. Government agencies, including the European Investment Fund, provided about a quarter of VC funds in Europe during 2009, and the absolute contribution of government agencies has increased by almost 80% over the past three years.

Economic uncertainty has also made the valuation of enterprises more difficult to assess, leading to an impasse between investors and entrepreneurs.

The EIB and EIF can play an important role in the financing of businesses, innovation and green growth by developing the next generation of PPP models

The European Investment Bank Group (EIB Group), consisting of the EIB and the European Investment Fund (EIF), plays an important role in the financing of businesses, innovation and green growth. While the EIB is very active in the funding of later-stage companies and projects, early stage SME financing is undertaken by the EIF, which uses its resources to share risk and catalyse private-sector funds and banks into increasing their investment in high-growth and technology driven enterprises. A wide range of financing solutions are being provided and are being further developed based on the following key building blocks: (i) The transformation of grants and subsidies into revolving financial instruments, with future models of public intervention involving a better combination of grants, equity co-investments, loans, guarantees and fiscal incentives; (ii) the structuring of those interventions to reflect the risk profile and the potential financial, social and environmental return; (iii) using public budgets to stimulate growth via private sector investment (the next generation of Public Private Partnerships – PPPs). Examples (all of them in their early stage of development) that further incorporate these building blocks are Project Bonds, risk-sharing instruments for innovation, and intellectual property financing.

Notes

1. Dialogue between the public and private sectors can provide an important contribution to policy making. The Roundtable discussions are informing subsequent work of the OECD in this area, not only by the CMF, but also, for example, by the Insurance and Private Pensions Committee (IPPC) and its Working Party on Private Pensions (WPPP). The IPPC and WPPP are focusing on the role of institutional investors, long-term investment and growth, and their work will also provide input for related projects within the G-20 framework.
2. Keynote speakers and discussants were invited to submit articles related to their interventions, published in this issue of *Financial Market Trends*.
3. This subsection summarises the keynote presentation by Franco Bassanini, President, *Cassa Depositi e Prestiti* (CDP); for more details, see his article (co-authored by Edoardo Reviglio) in this issue of *Financial Market Trends*.
4. This subsection summarises the keynote presentation by Hans-Helmut Kotz, Center for Financial Studies and Goethe-University Frankfurt; former Bundesbank Executive Board Member and Chair of the OECD Committee on Financial Markets; see also his article in *Financial Market Trends* (forthcoming).
5. This subsection summarises the keynote presentation by Lars Rohde, Chief Executive Officer, ATP; for more details, see his article in this issue of *Financial Market Trends*.
6. This subsection summarises the keynote presentation by Olivier Mareuse, Chief Financial Officer, *Caisse des Dépôts et Consignations* (CDC); for more details, see his article in this issue of *Financial Market Trends*.
7. This subsection summarises the keynote presentation by Gian Luigi Costanzo, Chairman, Generali Fund Management; for more details, see his article in this issue of *Financial Market Trends*.
8. This subsection summarises the keynote presentation by Frederic Ottesen, Senior Vice President, Head of Insurance Asset Management, Storebrand.
9. This and related comments are further expounded in the short article by Zvi Bodie and Marie Brière in this issue of *Financial Market Trends*.
10. This subsection summarises the keynote presentation by Martin Stanley, Global Head of Macquarie Infrastructure & Real Assets and Senior Managing Director, Macquarie Group; for more details, see his article in this issue of *Financial Market Trends*.
11. See *OECD Infrastructure to 2030* at www.oecd.org/departement/0,3355,en_2649_36240452_1_1_1_1_1,00.html.
12. This subsection summarises the keynote presentation by Thierry Déau, Founder and Chief Executive Officer, Meridiam Infrastructure; for more details, see his article in this issue of *Financial Market Trends*.
13. This subsection summarises the keynote presentation by Richard Pelly, Chief Executive, European Investment Fund; for more details, see his article (co-authored by Helmut Krämer-Eis) in this issue of *Financial Market Trends*.

Financial Stability, Fiscal Consolidation and Long-Term Investment after the Crisis

by

Franco Bassanini and Edoardo Reviglio*

In the future there will be a global growing demand for long-term investment, both in mature and in emerging countries, to finance infrastructure, innovation, education, growth, environmental programs. Mature economies will also need to increase their share of long-term investment to exit from the recent crisis, to reinforce their growth rates and global competitiveness and to ensure public debt sustainability. Given the need to enlarge the amount of long-term financing worldwide, policy makers should create a prudential and accounting framework that encourages long-term investment with positive effects for growth and financial market stability. The paper then discusses regulatory issues related to the introduction of a new international and/or European regulatory framework that is more favourable or less penalising for long-term investment, and issues related to the creation of new euro denominated financial instruments for financing infrastructure (long-term equity funds, project bonds and guarantee schemes) and for strengthening stability in EU sovereign bond markets (Eurobonds).

JEL Classification: E2, E6, G1, G2, G3, H44, H54, H81.

Keywords: Long-term investment and saving, fiscal consolidation, regulation, infrastructure, project bonds, Eurobonds

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I. Overview

Growing demand for long-term investment both in advanced and emerging countries

In the future there will be a growing demand for long-term investment both in the advanced and in the emerging countries. In mature countries, there is a pressing need to finance infrastructure, innovation, environmental programs, as well as to prepare for the consequences of an ageing population. In developing countries, the income per capita catching up process is requiring vast investment in infrastructure (transportation, telecommunications, energy, urbanisation). Mature economies will also need to increase their share of long-term investment to exit the crisis, to reinforce their growth rates and competitiveness on global markets and to ensure public debt sustainability (successful fiscal long-term consolidation requires both stricter fiscal policy and higher economic growth).

The policy framework should encourage long-term investment

Intense competition for long-term financing will therefore characterise the world in the coming years. There is a general need to enlarge the worldwide share of financing for long-term capital investment at the expense of short-termism and speculation. Policy makers and international regulators should work not only to assure financial stability, prevent global crisis and “level the playing field” toward fair global competition in the markets for global savings. They should also work on creating a prudential and accounting framework that encourages managers of financial institutions to focus more on long-term (rather than short-term) results, especially in regard to investments with significant positive externalities for growth. In fact, long-term investment is crucial for the future of the world economy; and it could also play a positive role in financial market stability. A long-term vision is needed to tackle the major challenges facing our societies: climate change, scarce natural resources, environmental protection, poverty, immigration, and education.

New rules and new instruments to support long-term investment should be introduced

The second part of the paper discusses the issues related to the introduction of a new international and/or European regulatory framework more favourable (or at least less penalising) for long-term investment (prudential and accounting rules, fiscal incentives, common frameworks in project financing initiatives and corporate governance). It discusses as well the issues related to the creation of new euro-denominated financial instruments for financing infrastructure (long-term equity funds, project bonds and guarantee schemes) and increasing the stability of the EU sovereign-bond markets (Eurobonds).

II. The long-run trends in the evolution of global investment and saving

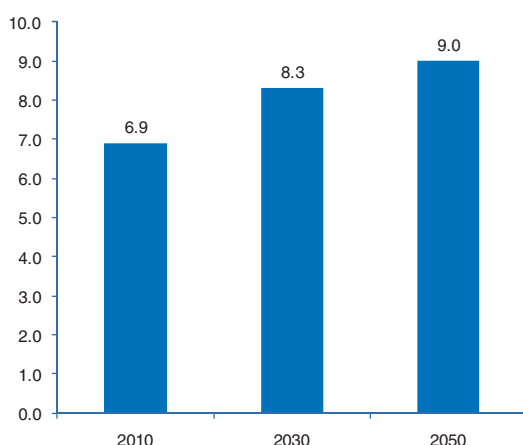
The world economy will experience strong demand for capital investment

Great transformations are going to characterise the 21st century. Almost two thirds of the world population, mostly in Asia, will switch from self-sustenance to consumption, from the closed circuit of an agricultural economy to the open source of a market economy. The world economy will experience exceptional demand for capital investment. World population will grow from seven to nine billion by 2050 (Figure 1); GDP should rise, in the same period, from 72 trillion USD (at PPP) in 2010 to about 380 trillion USD in 2050 (Figure 2).¹ The fastest growing regions according to forecasts will be

Africa (7.0%) and developing Asia (5.4%). As a result, North America and Western Europe are expected to fall from 41% of world GDP in 2010 to just 18% in 2050, while developing Asia's share is predicted to rise from 27% to 49% in 2050 (Figure 3). China is expected to overtake the US to become the largest economy in the world by 2020, to be in turn overtaken by India by 2050. However, the per capita numbers suggest that the convergence process may have several decades more to go (Figures 4a and 4b).

Figure 1. World population

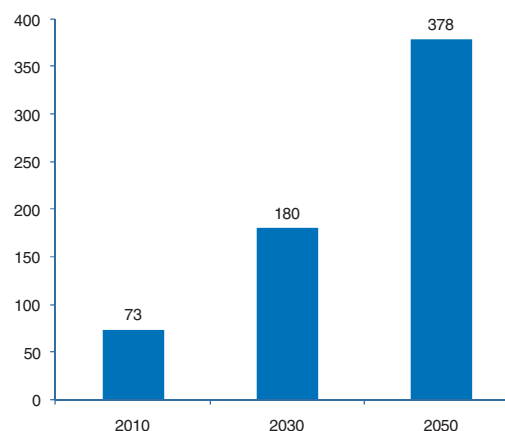
In billion



Source: Citi (2010).

Figure 2. World GDP

In trillion USD, PPP (2010)



Source: Citi (2010).

China and India have huge investment requirements, straining the environment and scarce resources

Looking ahead, both China and India have huge investment requirements.² It has been recently estimated that, to keep pace with urban population growth, China will build one New York City every two years. And India over the next two decades, one Chicago each year.³ The impact of such powerful rates of growth, urbanisation and development will represent a great challenge for the environment and challenge the scarcity of natural resources on our planet. The question mark is if technology and innovation will discover new solutions to manage the making such a great transformation, to make it not only possible, but globally suitable and geopolitically sustainable. In 2030 the demand for energy will be 50% greater than today and 80% of this demand will be for fossil fuels. CO₂ emissions will increase by around 60%. Another very precious common good – water – will be at the forefront of the problems to be solved, due to the boom in investment and consumption that is likely to take place this century. Technology will be asked to showcase all its powers to solve these problems.

Strong world governance is likely to be required

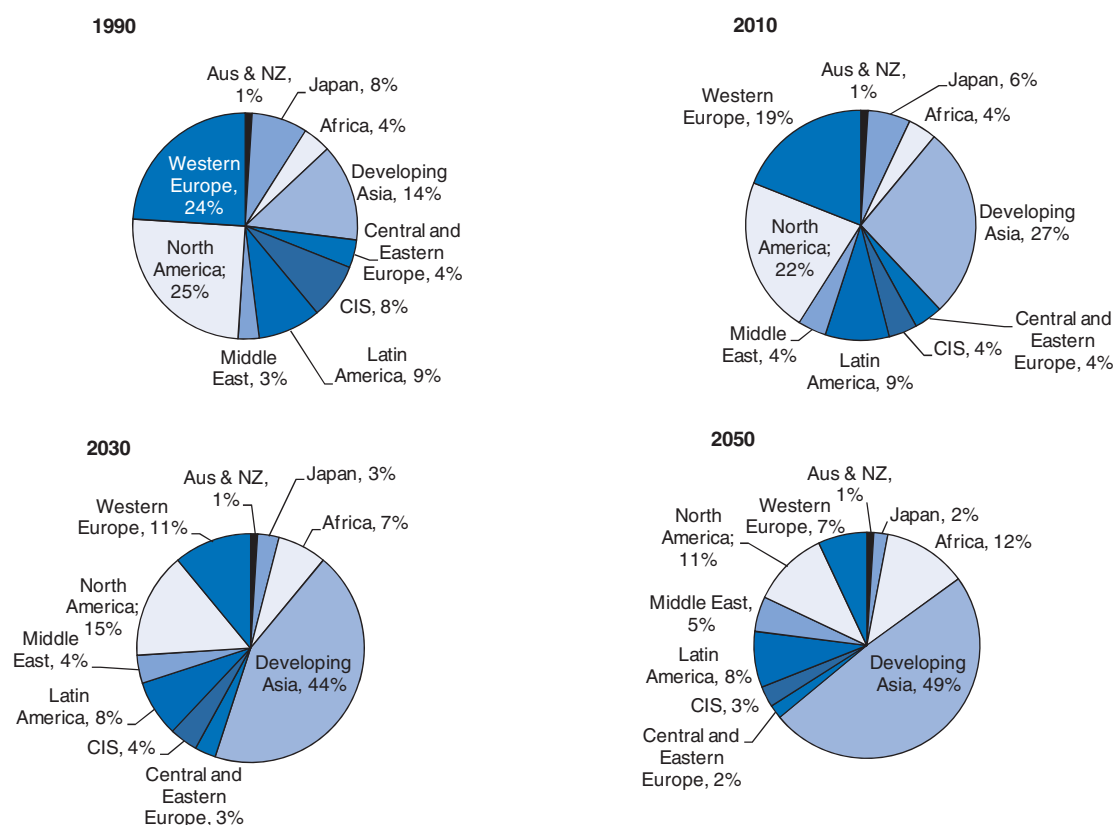
In the 21st century, most of the people in the world will aim to have the same living conditions and sustainable growth as the advanced world. The rest of the world does have the right – on grounds of justice – to ask for our same living conditions. It will be economically expedient and politically beneficial (or required) to share this exceptional global growth. However, strong world governance is likely to be required, most probably centred on the G-20 or starting from the G-20. Also required will be a wide exchange of

“best practices”, to achieve a global high-tech cultural and social welfare system, environmentally sustainable infrastructure systems and smart energy policies. Europe (and more generally the advanced world) should “export” this “model” – as well as the finance and know-how to produce it – around the world.

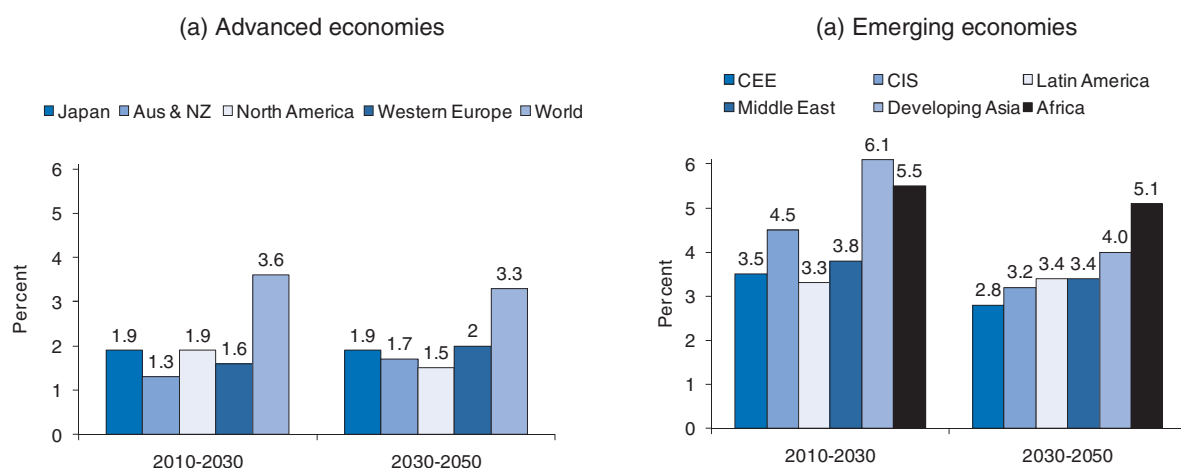
*Consumption, too,
is growing fast*

Despite the very high investment rates of the fast-growing late starters/converging economies, the consumption growth, too, is already a significant driver of domestic demand in many of these countries. Total consumer spending in Asian economies is likely to exceed total consumer spending in the Euro area during the next two years and that of the US within a dozen years.⁴ The proximate driver of this consumption boom is the growth of the “middle class” in fast-growing Asia and Latin America.

Figure 3. World real GDP composition



Source: IMF (2010) and Citi Investment Research and Analysis (2011).

Figure 4. Real GDP per capita growth

Note: GDP per capita measured in PPP USD.

Source: Citi (2010),

High investment rates in emerging economies create export opportunities for advanced ones

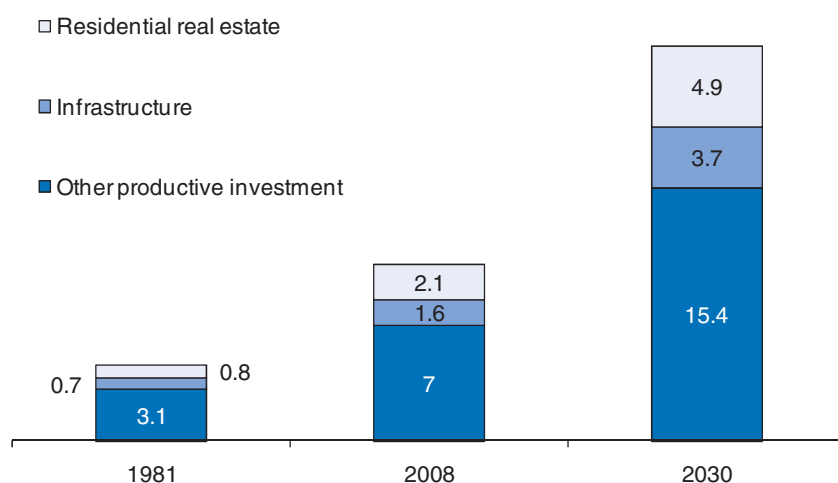
However, even though total investment spending in Asia's fast growing economies could exceed total investment spending of the US and Europe, the per capita numbers suggest again that the convergence process may have several decades (China) or even several generations (India) to go. Mature economies – which should have a comparative advantage in capital goods production – may take advantage of the export opportunities created by these high investment rates to very different degrees.

The speed of globalisation has increased

The speed of globalisation has increased in the last 20 years. It has been based on some key factors: (i) a geopolitical factor, with the fall of the Berlin Wall, and the shifting of the political power from the Atlantic to the Pacific; (ii) a technological factor, given the spreading use of IT and the lowering of transportation costs; (iii) an economic factor, with Asia producing low-cost goods and America buying them on credit; (iv) a financial factor, via the creation of global virtual money; and finally (v) an ideological factor, the “political apotheosis” of free market economy.⁵

Expect a huge increase in demand for capital investment in advanced and emerging economies

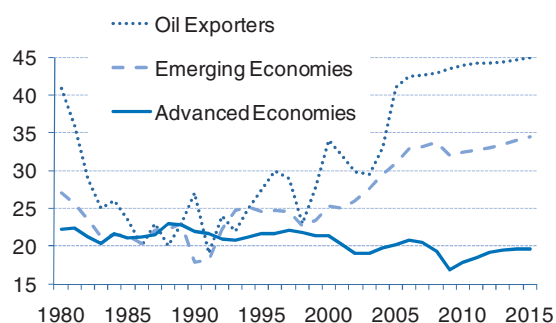
Therefore, in the next decades, we expect a huge increase in demand for capital investment which will go from today's almost USD 11 trillion to USD 24 trillion by 2030 (Figure 5).⁶ In mature countries, there is a pressing need to finance infrastructure, innovation, environmental programs, as well as to prepare for the consequences of an ageing population; in developing countries, the income per capita catching-up process (Figures 4a and 4b) is requiring vast investments in infrastructure (transportation, telecommunications, energy, urbanisation). Mature economies will also need to increase their share of long-term investment (LTI) to exit the crisis, to reinforce their growth rates and competitiveness on global markets and to ensure public debt sustainability (successful fiscal long-term consolidation requires both stricter fiscal policy and more economic growth).

Figure 5. Desired global investment

Source: McKinsey Global Institute (2010).

Figure 6. Gross saving rate dynamics

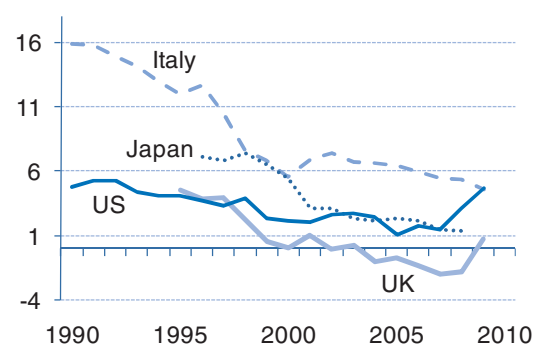
As percentage of GDP



Sources: McKinsey Analytics; McKinsey Global Economic Growth Database; World Development Indicators of the World Bank; McKinsey Global Institute (2010).

Figure 7. Household gross saving rate in advanced economies

As percentage of GDP



Source: OECD (2011).

Over the past two decades, there has been an excess of savings relative to investment

Over the past two decades, the world's investment rate has been declining. This has contributed to an excess of saving over desired investment. At the same time, advanced countries' gross national saving fell from 22.7% of their GDP in 1980 to 19.7% in 2008, even if the pattern differs across countries (Figure 6 and Table 1). For example, the savings rate fell more in the United States than in any other mature country, from 20.6% of GDP in 1980 to 12.7% in 2008. Gross national saving rates were relatively stable in France and Germany. Households account for most of the drop in national saving in many developed countries (Figure 7). On the contrary, emerging countries have exhibited not only increasing savings, but also investment rates as a result of their strong growth during the past decades (Figure 8).

Table 1. Savings and investment

As percentage of GDP

	Average 1996-03	2004	2005	2006	2007	2008	2009	2010	2011	Projections 2012-15
World										
Savings	21.8	22.1	22.8	24.1	24.3	24.1	21.8	23	23.8	25.1
Investment	22.1	22.1	22.5	23.2	23.7	23.8	21.6	22.6	23.3	24.6
Advanced Economies										
Savings	21	20	20.2	20.9	20.8	19.6	17.1	18.1	18.9	19.7
Investment	21.3	20.7	21.2	21.6	21.6	20.9	17.8	18.4	19	20.1
Net lending	-0.3	-0.7	-1	-0.7	-0.8	-1.3	-0.7	-0.3	-0.1	-0.4
United States										
Savings	17	14.5	15.1	16.2	14.3	12.4	10.9	12.4	13.8	15.5
Investment	19.6	19.7	20.3	20.5	19.6	18	14.8	15.9	16.5	18.5
Net lending	-2.6	-5.2	-5.2	-4.3	-5.3	-5.6	-3.9	-3.5	-2.7	-3
Euro Area										
Savings	21.3	21.9	21.6	22.6	23.4	22	19	19.6	19.9	20.1
Investment	20.8	20.4	20.8	21.7	22.3	21.9	18.9	18.8	18.9	19.4
Net lending	0.5	1.5	0.8	0.9	1.1	0.1	0.1	0.8	1	0.7
Germany										
Savings	20	22.9	23.2	25.7	28.8	28.4	23.3	24.9	24.5	23
Investment	20.2	17.1	16.9	17.6	18.3	18.5	16.5	17	17	17.2
Net lending	-0.2	5.8	6.3	8.1	10.5	9.9	6.8	7.9	7.5	5.8
France										
Savings	21	20	19.8	20.6	21.2	20.1	17.1	17.8	18.4	18.8
Investment	18.9	19.5	20.3	21.1	22.2	22	19	19.6	20.1	20.6
Net lending	2.1	0.5	-0.5	-0.5	-1	-1.9	-1.9	-1.8	-1.7	-1.8
Italy										
Savings	20.9	19.9	19	19	19.4	17.7	15.7	16.4	17.1	17.9
Investment	20.2	20.8	20.7	21.6	21.9	21.1	18.9	19.3	19.8	20.4
Net lending	0.7	-0.9	-1.7	-2.6	-2.5	-3.4	-3.2	-2.9	-2.7	-2.5
NIA Economies										
Savings	32.2	32.9	31.6	31.9	32.5	32.7	32.2	33.6	33.5	32.9
Investment	28.1	26.7	26.1	26.4	26.1	27.8	23.6	26.5	26.6	26.9
Net Lending	4.1	6.2	5.5	5.5	6.4	4.9	8.6	7.1	6.9	6
Emerging Economies										
Savings	25	29.6	31.1	33	33.3	33.8	32.1	32.5	32.9	33.8
Investment	25	27.3	26.9	27.9	29.2	30.3	30.1	31	31.5	32
Net Lending	0	2.3	4.2	5.1	4.1	3.5	2	1.5	1.4	1.8

Note: Data are not directly comparable due to the different regional and country aggregation.

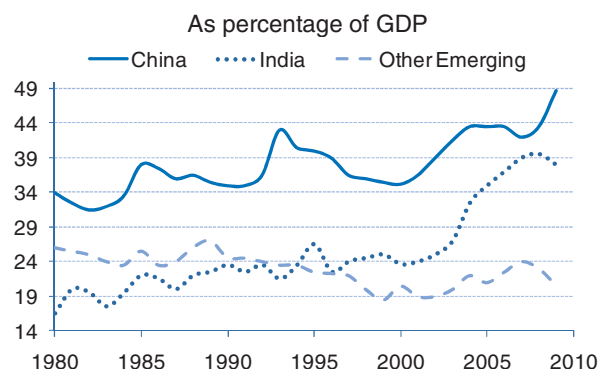
Source: IMF (2010).

The projected increase in global investment demand will put upward pressure on real interest rates

In the coming years, however, the annual investment rate in real terms has been estimated to rise from 22.4% of global GDP in 2008 to 25.1% in 2030 (Figure 9) as emerging markets continue to grow and urbanise and advanced economies recover to pre-crisis levels. Almost all of the projected increase in global investment demand reflects the increasing weight of China and India in the global economy. If current investment rates were maintained (and assuming no change in exchange rates over the period), these two countries' increased

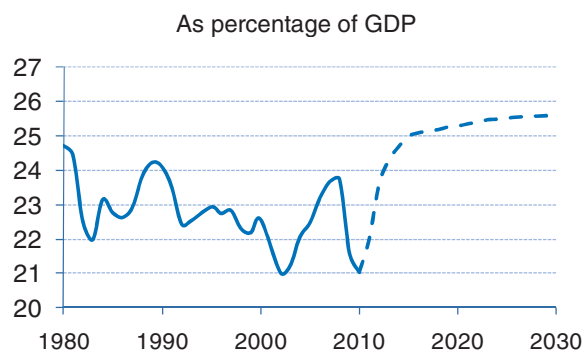
share in global GDP alone would cause the global investment rate to rise to about 24.5% by 2030. In this potential scenario, given the scarcity of long-term financing, if in advanced countries saving do not increase enough, the competition for capital will be intense. The coming investment boom will put sustained upward pressure on real interest rates, leading to a rebalancing of savings at the global level and widening the current account imbalances of recent years (Figure 10).

Figure 8. Investment rate in emerging economies



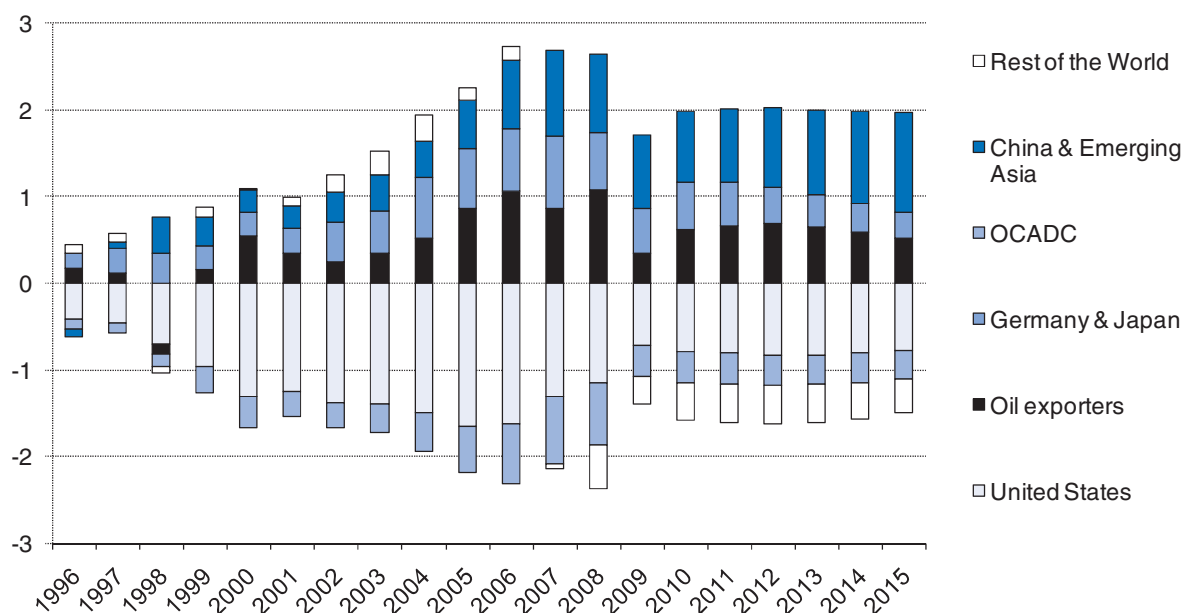
Source: CEIC; Haver Analytics; McKinsey Global Economic Growth Database; World Development Indicators of the World Bank; McKinsey Global Institute (2010).

Figure 9. Worldwide investment rate forecasts



Source: IMF (2011). Economic Intelligence Unit; - McKinsey Global Economic Growth database; Oxford Economics; MGI Capital Supply & Demand Model; World's Bank Development Indicators; McKinsey Global Institute

Figure 10. The evolution of global imbalances



Note: China & Emerging Asia: China, Hong Kong SAR, Indonesia, South Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, and Thailand; OCADC: Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Turkey, and United Kingdom.

Source: IMF (2010).

Global imbalances can become a mechanism for more efficient capital allocation

As stressed by De Mello and Padoan (2010), widening global imbalances are not necessarily undesirable because they represent a general mechanism through which a more efficient capital allocation can be achieved. In particular, since fiscal consolidation is needed to facilitate a current account reversal, the massive reduction in the supply of government bonds (especially in advanced countries) can lead to a rebalancing of capital flows towards corporate bonds and equity investment.

III. Towards a decline of the dollar and a rise of the euro?

The crisis, in the long run, may weaken the dollar, opening up new opportunities

The prevailing consensus is that the 2007/2008 financial crisis will weaken the dollar and open up new opportunities in the global monetary arena. At first, the crisis seemed to strengthen the dollar. Investors, when shaken by turmoil, largely sought refuge in the US government securities market: the most liquid in the world and, in recent times of tremor, widely considered the place to safeguard savings. There was, at first, no real loss of confidence in the dollar's stability.

In the short run, the crisis has enhanced the role of the dollar

As regards central bank reserves, IMF data show that 64% of the world's reserves are in dollars and that this figure has continually risen over the last two years⁷. Thus, while it is true that during the crisis American investors shifted their assets from deposits and bank securities to government securities, before gradually shifting back, this does not appear to be the case for the world's central banks; they have regularly accumulated dollar-denominated reserves at a faster pace than during the period preceding the crisis, thereby financing the US deficit. It still makes sense to maintain reserves in the same currency as that of foreign debt and foreign trade⁸. Such funds are used to lighten the debt, ease trade flow and intervene in foreign currency markets.

But the strengthening of the dollar could be a short-term phenomenon

However, the strengthening of the dollar could be a short-term phenomenon. It might be argued that the vast amount of securities issued by the US financial market began to erode confidence in the dollar and US government securities. Over the next few years, the United States will be forced to issue large quantities of debt, in part to finance the imposing bailout and stimulus packages approved in 2008-2009. With an evident deceleration in financial globalisation, this could create significant problems for the United States in financing its budget and trade deficits.

A gradual reduction of the dollar's predominance in reserves and international trade is likely

It is likely that this will lead to a gradual reduction of the dollar's predominance in reserves and international trade. Rapidly growing emerging economies in the midst of increasing global multi-polarism will tend to increase foreign exchange reserves and should consider alternatives⁹. The euro and Europe are the most natural beneficiaries of this diversification process. In 2008, 45% of international securities were issued in dollar, compared with 32% denominated in euro.¹⁰ According to the Bank for International Settlements (BIS, 2007), in 2007, 86% of all international transactions were carried out in dollar, compared with 38% in euro.¹¹ In April 2008, according to the IMF, 66 countries used the dollar as the reference currency for their exports, compared with 27 that used the euro.¹²

Central banks tend to prefer currencies that do not devalue due to inflation; but even more, they choose currencies that can be easily monetised for use in open market operations. This latter characteristic depends on the liquidity and depth of the market for government securities issued in that currency.¹³ The US securities market is still the largest government securities market in the world: almost two-thirds of the reserves of central banks are dollar denominated, while sterling and the Swiss franc only account for 2% and 1%, respectively.

The only alternative to the dollar in the near future is the euro

EU political reaction to the Greek crisis was strong; if successful it could increase the long-term expectations of the euro as a stable global currency

Therefore, the only alternative to the dollar in the near future is the euro. The European Union's GDP exceeds that of the United States. It has a stringent and effective inflation target. The monetary policy of the ECB and the Stability and Growth Pact (SGP) contributed to the stability of public finances before the recent financial crisis, and to mitigate the crisis' effects, after 2008. With the outburst of the Greek crisis, the SGP has been extensively tightened and the European Financial Stability Facility (EFSF) has been put into place. The political reaction of the EU to the European Sovereign Bond market crisis, was strong and on time, and if successful (and we trust it will be successful) may increase even more the long-term expectations of the euro as a stable global currency. The importance of the euro as a reserve currency is bound to increase, especially in the countries that border continental Europe, such as the Mediterranean-basin countries and Russia. As euro-denominated trade increases, the euro reserves of the central banks in neighbouring countries will also grow. Between 2008 and 2009, for example, the euro reserves of the central bank of Russia increased from 42% to 47% of the total, while its dollar reserves fell from 47% to 41%.¹⁴

Diversification of China's reserves would have an even greater impact

A much greater impact would result from strong diversification in China's reserves. It is estimated that 60% of the official reserves of the Chinese central bank are currently in dollars. A sudden change of portfolio allocation will cause the price of American securities to collapse, with a negative impact on both the United States and China as well, whose reserves would be devalued. Therefore, it is likely that the Chinese will adopt a strategy of gradual diversification that will require several decades to complete. Gradually, this - given the volumes involved - is a major change that could impact notably in the short-to-medium term.¹⁵

A single European sovereign-bond market could finance infrastructure and development

Clearly, the creation of a single European sovereign bond market¹⁶ will pose serious competition for the US market,¹⁷ with an increasingly ample room for financing European infrastructure and development with European debt.

The market for US federal government securities is around USD 2,500 billion.¹⁸ An equivalent amount of European sovereign debt would be around 13.5% of the European Union's GDP.¹⁹ This is a relatively modest portion of the EU-27 member states' total public debt, which is equal to 79% of Europe's GDP in 2009 and 84% in 2010;²⁰ a modest portion, but sufficient however to finance truly significant strategic investments.

IV. Financing long-term investments to foster stability, fiscal consolidation and sustainable growth: the need for a better regulation

After Pittsburgh, the focus has shifted from growth to financial and fiscal stability

After the Pittsburgh G-20 call for a strong, balanced and sustainable growth, the focus of the global community seems to have shifted mostly on financial and fiscal stability. Since high public debt and financial instability are considered the main drivers of the crisis, they have become the main guiding lines of action for regulators and policy makers in the aftermath of the crisis. There is general consensus that financial and fiscal stability represent central pillars of a healthy and well-functioning economic system.

Financial and fiscal stability are pre-conditions for growth

The correlation between financial and fiscal stability is self-evident: the Irish and the Portuguese crisis are excellent examples of it. Both financial and fiscal stability are pre-conditions of durable and healthy growth; they are strictly related to the expectations of economic agents and to the planning of economic activity. A well-balanced fiscal and financial environment increases opportunities for economic growth.

But growth and stability are interrelated

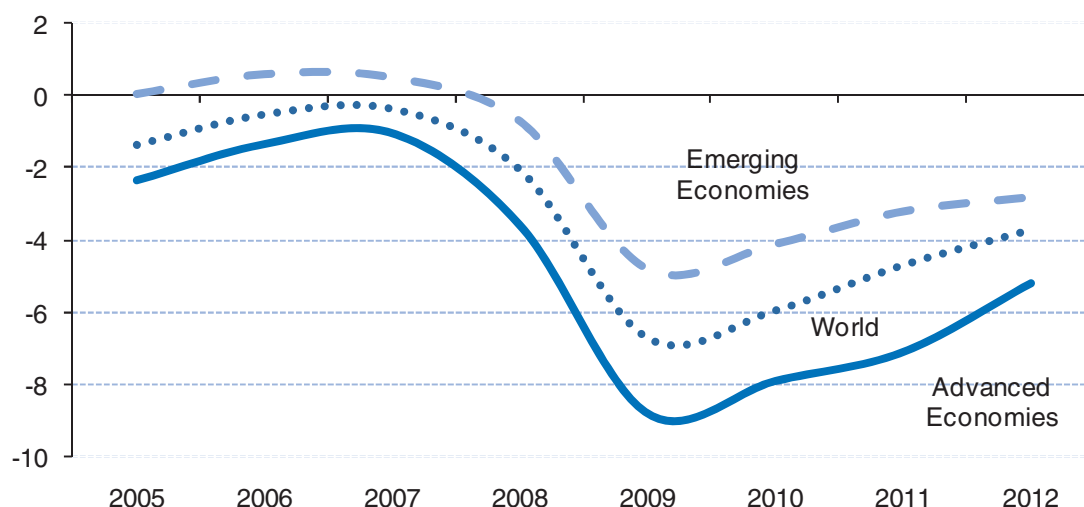
But there is also evidence that this correlation is – in fact – a bidirectional one. Durable and sustainable growth requires financial stability and long-term fiscal consolidation; but financial stability and fiscal consolidation both require durable and sustainable growth.

The crisis had a huge impact on advanced countries' public finances

As it is well-known, the financial crisis had a significant impact on the public finance of most advanced countries throughout the world.²¹ Considering the 33 advanced economies,²² in 2009 the budget deficit averaged about 9% of GDP, up from only 1% in 2007 (Figure 11).

Figure 11. Deterioration of fiscal balance

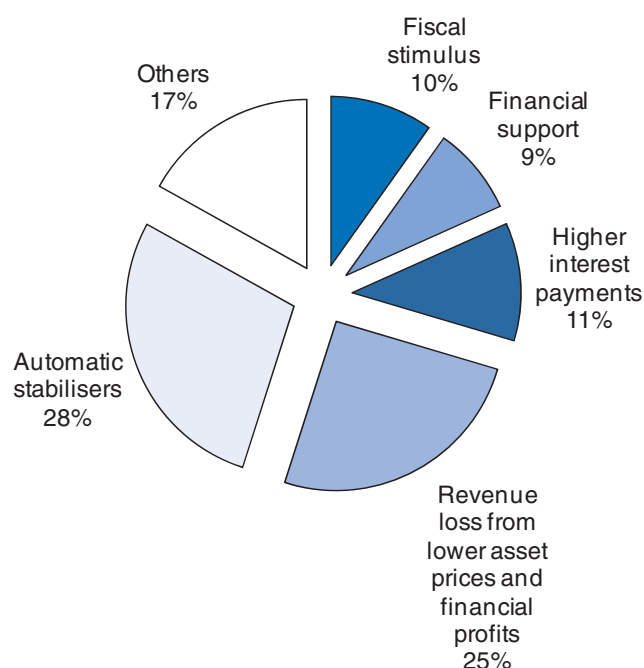
As percentage of GDP



Source: IMF (2010),

The public debt-to-GDP ratio of the G-7 countries soared to post-war levels. For the “advanced economies” within the G-20, this ratio peaked at 102.7% in 2010, while the public debt of the emerging countries remains broadly stable at much lower levels (36.9% in 2010, see Figures 12 and 13).

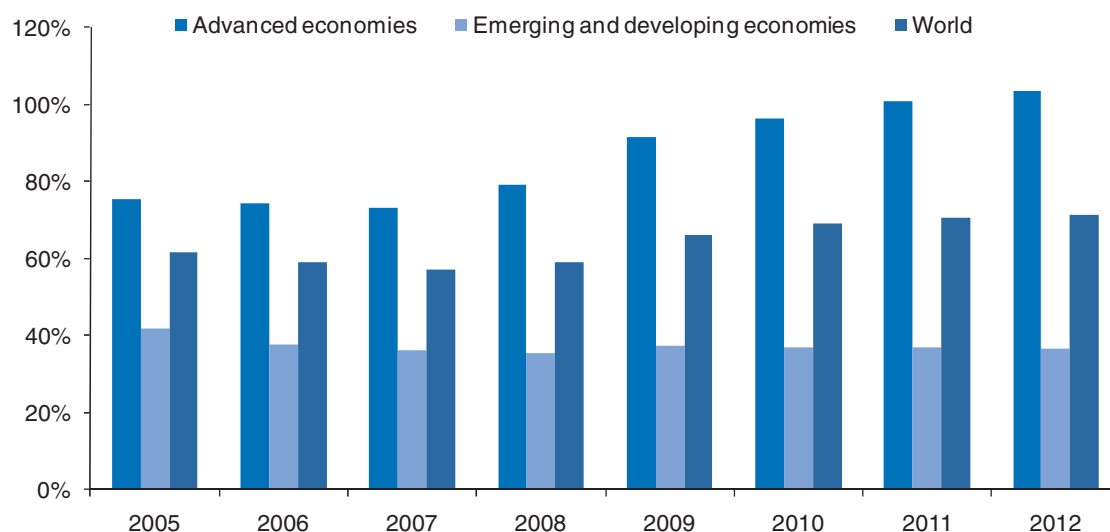
Figure 12. Government debt increase, 2007–14



Note: Debt increase: 35.5% of total GDP.

Source: Authors' calculations based on IMF (2010) data.

Figure 13. Increase in public debt



Source: IMF (2010).

The best way to reduce public deficits and debt is to increase GDP growth through structural reforms and higher investment in strategic areas

Thus, most advanced economies need to lower their deficit and their debt substantially. Strong inflation could reduce public debt, but we know that high inflation distorts the allocation of resources, reduces the growth rate, penalises the poorest citizens, and creates social and political instability. Major cuts in public spending are necessary, but politically difficult. In the long term, they may seriously jeopardise the government's political consensus. Thus, together with relevant but sustainable cuts in public spending, increasing the average rate of GDP growth is then the most desirable solution to restoring fiscal stability. Reforms to liberalise markets, boost competition and cut regulatory burdens are always necessary, but on their own may not achieve the desired results. Increasing investment is always crucial to fostering economic growth. This is particularly true for investments in strategic sectors able to generate high positive externalities, like infrastructure, research and technological innovation, the environment, alternative energy servicing, and biotechnologies. Investment in these sectors could enhance competitiveness and productivity.

To increase long-term investment, mature economies need to attract more private capital to replace declining public capital

However, the sudden strong increases in public debt and deficit levels imply that, today, government spending cannot provide the desired level of investment. Consequently, high-public-debt countries will not be able to finance such investment mainly with their own budget resources, as high-growth, low-public-debt countries (such as China, Korea, Russia, Brazil, Australia) can do (and decided to do). Thus, mature economies need to attract an increasing amount of private capital to offset the decline in public capital, to increase their share of long-term investments to exit the crisis, to reinforce their growth rates and competitiveness in global markets and to ensure public debt sustainability.

Developing countries, too, need to increase strategic investments

But the developing economies, too, need to increase their investment in strategic sectors; for instance, rapid urbanisation, climate change and the increase in consumption and economic growth are requiring vast investment in infrastructure (transportation, urbanisation, telecommunications, energy, water supply).

Increasing demand for financing may lead to an infrastructure "equity (and debt?) crunch"

In fact, as we have already discussed above, in the coming years the demand for both equity and debt for financing infrastructure is going to increase. The private equity industry for infrastructure, after a sudden decline during 2008, is rising up again. Both "brownfield" and "greenfield" initiatives can be attractive asset classes for large investors. But the demand for financing (especially in equity) is still larger than the supply, leaving open the question whether we will have to face in the future an infrastructure "equity (and debt?) crunch".

Need to enlarge the worldwide share of financing for long-term capital investment at the expense of short-termism and speculation

Thus, all countries should aim to increase their level of long-term investment and participate in a fair competition on global financial markets to attract private and public-private resources to finance them. Moreover, there is a general need to enlarge the worldwide share of financing for long-term capital investment at the expense of short-termism and speculation. We need to favour the match of long-term savings and long-term capital investment. New regulatory frameworks, friendlier to long-term investment, should be adopted on every level – national, regional and global.

Policy makers and regulators should create a framework that encourages long-term investment

Policy makers and international regulators around the world should work not only to ensure financial stability, prevent global crises and “level the playing field” to allow for fair global competition in the markets of global savings, but they should also work on creating a prudential and accounting framework that encourages managers of financial institutions to focus more on long-term (rather than on short-term) results, especially on investments with significant positive externalities for growth.

Long-term investment is crucial for the future of world economy

In fact, the issue of long-term investment is crucial for the future of world economy. This type of investment can play a positive role toward financial market stability. Moreover, it is pivotal for a sustainable long-term planning of economic and social systems. It will indeed take a long-term vision to tackle major challenges facing our society: climate change, scarce natural resources, environmental protection, poverty, immigration, and education. A long-term policy framework must be based on strategic public and private/public investments in infrastructure, energy, environment, telecommunications (New Generation Networks), R&D and human capital, which have strong positive externalities for the economy as a whole, and for human well-being and social cohesion.

The regulatory setting is now providing unfavourable incentives for long-term investment

Nevertheless, the overall regulatory setting has often been providing unfavourable incentives to such long-term investment (LTI) and to long-term oriented investors. The Basel rules and capital requirements have promoted short-termism and discouraged long-term banking and financial initiatives. Accounting rules conceived for investment banks and trading activities and appropriate for their business model have often penalised LTI and proved to be inappropriate for long-term investors (such as pension funds, insurance companies, SWFs, and development public banks) and for their unique business models.²³ The IASB mark-to-market philosophy may be particularly damaging for long-term investors, attributing instant market values to assets whose valuations may take years to accurately assess;²⁴ and the Solvency II Directive in Europe, as we will discuss later, discourages insurance companies and pension funds from holding infrastructural assets, not allowing for a proper matching of long-term liabilities with long-term assets on their balance sheets.

V. A new regulatory framework to foster long-term investment

1. The European debate

The debate concerning a new regulatory framework and new instruments to foster long-term investment has grown in Europe

In Europe, the debate concerning the development of a new regulatory framework and new instruments to foster long-term investment (LTI) has grown and developed considerably in recent years. The aim is to reduce the main impediments and improve incentives for strategic investments and/or for long-term investors: financial institutions with a public mandate, but also private investors, including pension funds, insurance companies and sovereign wealth funds (SWFs). The need for a new regulatory framework and new instruments to attract private financial resources (including those of European savers as well as non-EU foreign investors) for EU strategic investments has been widely emphasised. It should be kept in mind, however – as we have

already pointed out – that the crucial issue is not how to attract foreign capital to Europe, but, within a larger vision, how to attract capital for financing strategic long-term investment all over the world.

The Long-Term Investors Club is active in this area

Since the beginning of the crisis the Long-Term Investors (LTI) Club²⁵, on several occasions, has posed these questions to policy makers and international organisations. During 2009, at the Long-Term Investors Club Paris Conference²⁶ and then at the Eurofi Financial Forum held in Goteborg²⁷, the need for a new regulatory framework and for new instruments to foster European long-term investment was first stressed. In 2010, the four founders of the LTI Club (EIB, KfW, CDC and CDP) participated actively in the preparatory works for the Jacques de Larosi re’s and Mario Monti’s Reports and in the Eurofi Financial Forum 2010²⁸ – where the issue was equally stressed. They also organised with the OECD two conferences in Rome and in Venice²⁹ specifically dedicated to the theme of a new regulatory framework more favourable to the LTI. Finally, specific proposals on the matter were compiled by the same four financial institutions in a working paper presented to the EU Commissioner Michel Barnier in September 2010.³⁰

The European Commission also emphasises the need for such a new framework

At the institutional European level, the need of a new regulatory framework, more favourable to LTI, has been strongly emphasised by the European Commission – following the de Larosi re and Monti Reports – in the recent Communications on *A New Single Market Act* (EC, 2010d), on *A Comprehensive European international investment policy* (EC, 2010b), and on *The EU Budget Review* (EC, 2010c). In fact, without a substantial increase in investment in infrastructure, energy, environment, innovation and research, and therefore without major changes in prudential, accounting and tax regulations, the objectives set forth in the EU 2020 strategy and in the Monti Report can hardly be achieved. Major investments in the fields of innovation, renewable energy, water networks, telecommunications and transport infrastructures are case required for shifting to a low-carbon economy, coping with the scarcity of natural resources and adapting to rapid urbanisation.

However, even though a broad consensus can be discerned on the need for a new regulatory framework and new instruments more favourable for LTI (among the majority of experts, scholars, bankers and politicians), the international and European regulators seem to be still prisoners of a pro-cyclical and short-termist cultural approach.

2. Basel III and Solvency II: their potential negative impact on long-term investment

In the aftermath of the crisis, regulators and policy makers have been determined to strengthen the financial system

Understandably, in the aftermath of the crisis, regulators and policy makers had to be and have been very determined about strengthening the financial system to avoid the repeat of another crisis. The new regulation aimed at making the banking system safer by addressing many of the flaws that became visible during the crisis. Improvement in the quality and depth of the capital base and a renewed focus on liquidity management are intended to redirect banks’ underlying risk-management capabilities. Banks’ review of their risk-taking paradigm brings benefits to their business and to consumers,

investors and governments as well. In fact, the economy's main stakeholders can be protected only by a significant increase in capital requirements as proposed by the Basel Committee on Banking Supervision.

But such strong action on stability, we shall argue, should not hinder the capacity of banks (and, even more, of other investors) to serve the economy, especially in the financing of SMEs and of long-term infrastructure investment, which are sectors crucial to future growth and to competitiveness.

Some of the re-regulation might have unintended effects

As Jacques De Larosière recently emphasised, “some of the re-regulation might have unintended effects which need more fine tuning and an extension of the regulated business area”³¹. For European banks and their business model, the new Basel capital and liquidity rules will probably entail reduced profits and increased competition for deposits in the medium term. In this case, the consequent rise in costs would probably be offset by a mix of higher productivity and the transfer of costs to clients. Under the pressure of higher competition, certain banks might be encouraged to operate in a way that is more profitable but at the same time riskier.

The new regulation penalises the European banking system more than the American one

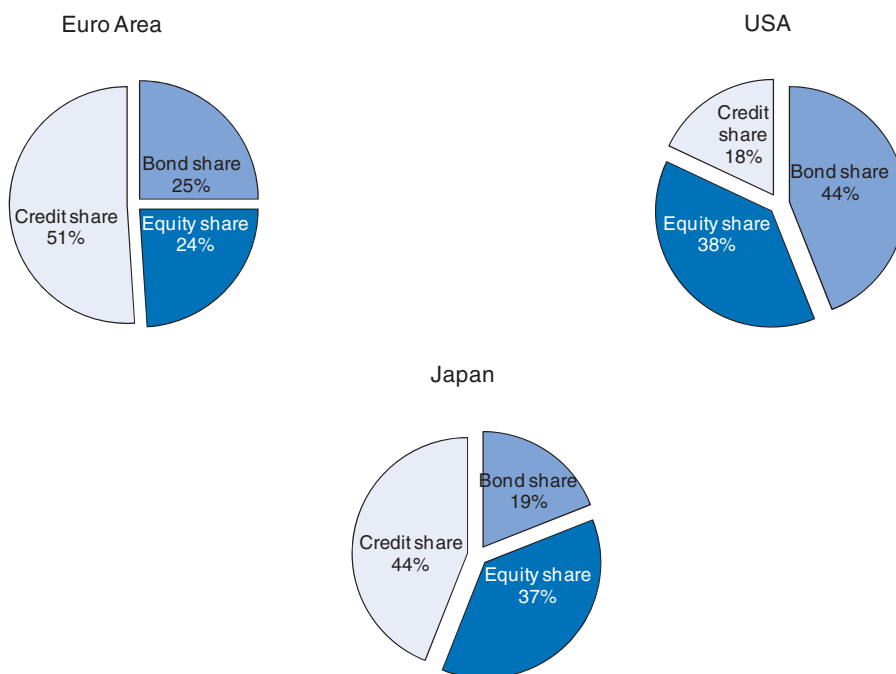
“Given the difference between the continental European and the American financial and banking systems, the new regulation penalises the European system more. Indeed, the crisis has shown that the two main banking systems reacted differently. The Anglo-Saxon “originate and distribute” model developed considerable trading activities and (mostly non-supervised) off-balance sheet vehicles with profitable but risky and opaque products. Banks with this model were heavily hit by the subprime crisis, leading to massive state and central bank interventions designed to avoid contagion. By contrast, continental Europe's universal banks were more diversified, with retail and corporate lending operations, fund management and other activities mainly concentrated on a client base. Such lenders were mostly concerned about the ability of borrowers to repay their obligations; their strong deposit bases conferred stability to the system as a whole. This second model almost survived without public bail-outs. European banks that did require assistance had mostly adopted the aforementioned riskier “investment bank” practices or had imprudently bought toxic products. The risk entailed by the new rules is that these stable institutions, if required to increase their return on investment, will reduce activities that have modest margins such as lending to small and medium-sized enterprises to favour the more profitable parts of their portfolios. Or, alternatively, the rules could translate into higher credit costs, with negative effects on the real economy and on the soundness of the financial system.”³²

These negative effects will be more significant in Europe than in the US

These negative effects will be more significant in Europe where the economy is mostly financed by the banking system (Figure 14). In the US only about one fifth of overall financing to the economy comes directly from the banking system: it affects especially the SMEs, mostly financed by regional banks and community banks which do not comply with Basel criteria. Consequently most of the restrictive effects on the capacity of banks to finance long-term, due to Basel III, would affect Europe and not the United States, giving the US an unfair competitive advantage. As Jacques de Larosière effectively concludes, “the cruel irony is that the banking model that most

favours financial stability and economic growth could be the chief victim of the new framework. The model that caused the crisis would, at least in part, be left in place. We would see an enforced search for a maximum return on assets – one of the biggest problems in the years before the crisis, when immediate profitability was too often deemed more important than sound analysis and risk prevention.”³³

Figure 14. Relative shares of credit, equity and bond finance



Source: ECB (2011).

Solvency II will present a huge capital burden for the EU insurance sector, discouraging long-term investments

As for insurance companies, starting from 2012, the European Directive Solvency II will introduce a new regulatory capital regime and modify the principles of risk assessment for the management of assets and liabilities in the EU insurance (and asset management) sector. The first pillar of Solvency II is the quantitative component of the new regulations. It deals with the capital requirements for insurers wishing to provide coverage in the EU markets. Solvency II contains two levels of capital requirements: (1) the Solvency Capital Requirement (SCR); and (2) the Minimum Capital Requirement (MCR). The SCR is a target level of capital, while the MCR is a minimum threshold, below which companies will no longer be permitted to trade. If the available capital lies between the SCR and MCR, it provides an early indicator to the supervisor and insurance company that action needs to be taken.

Modelled after the Basel regulations, Solvency II will present a huge capital burden for the industry. Implementation costs are a major additional expense in an environment where insurers are already struggling to maintain

profitability during an inopportune time in the underwriting cycle. In addition, there is an attempt to extend Solvency II regulation to the pension funds industry. Historically, investors in PPP and Infrastructure bonds have been institutions with long-term liabilities against which they needed to have assets to match long-term cash flows. The key players have been pension funds and life insurance companies (both of these invested directly in infrastructure as an *asset class*) as well as fund management companies, whose clients are also pension funds and life insurance companies.

Life insurances and pension funds tend to invest with a long-term horizon

Life insurances and pension funds are characterised by long-term and very long-term liabilities. Accordingly, they tend to invest with a long-term horizon, and their asset allocation includes instruments whose value is expected to increase in the long run. Their asset allocation process differs from that of a generic asset manager since, for these institutions, liabilities matter and, consequently, hedging instruments for the liabilities enhance investor's utility. Moreover, for a long-term investor the concept of risk diversification contemplates the time diversification in addition to the cross-assets diversification. For most of their activities, insurance companies and pension funds have long-term or even very long-term liabilities that in turn justify long-term allocation. Life insurers are estimated to have USD 11 trillion of assets under management. But due to their liability profile, their low risk appetite and their decision making structure, the estimated allocation to illiquid investments is equal only to 4%. Therefore, assessing life insurers' solvency based on short-term valuations is not only incompatible with their need to invest in assets that, while risky, yield very positive long-term returns, on average; this approach also means that any genuine asset-liability management is an illusion, even though the regulators actually hope to promote ALM systems.³⁴

Pension funds, unlike banks, do not face short-term solvency concerns; short-term constraints are for them costly and mostly irrelevant

Short-term constraints on pension funds have been criticised not only for being prohibitively costly, but also for being mostly irrelevant for long-term investors not facing short-term solvency concerns. This stands in contrast to banks, where the risk of runs by the clients justifies the short-term focus. Because banking institutions borrow short and lend long, transforming savings into longer-term investments, they are subject to liquidity risk when clients exercise the implicit put option on their deposits. Pension funds, on the other hand, have the unique ability to behave as very long-term investors, not only because the liabilities they face typically have a very long horizon, but also, and more importantly perhaps, because long-term ties bind employers and employees. After all, pension fund benefits are a by-product of the employment contract, not a competitive financial service, and this prevents the risk of client runs: employees are able to surrender their pension contracts only by breaking their employment contracts, an option that is rarely exercised in a massive collective fashion.

Therefore, the negative impact of Solvency II on Institutional Investors' capital requirements can foster a reduced appetite for buying/investing in long-term financial instruments, thus reducing the potential market scope.

3. Mitigating the impact of Basel III and Solvency II on long-term investment

EU institutions have some power to influence or to directly enact rules in support of long-term investment

It is widely accepted that the European Union has no powers to decide in this matter, since this would require the introduction of exceptions and additions to a set of rules internationally propounded through Basel III, Solvency II and the IAS. But the rules of Basel III must be implemented in Europe by a European Union directive (CRD IV), while Solvency II is itself an European directive. As for the international accounting standards, though they are defined by an independent NGO (the IASB), they can be effective only if they are adopted by the European and national jurisdictions.

So the EU institutions have at least some power to influence, and even to negotiate, with the IASB toward less-punitive regulations for long-term investment (LTI), and to directly enact improved regulation for insurance companies and pension funds through changes to Solvency II. As for Basel III, in principle, the EU is not obliged to transpose the Basel rules mechanically, but could provide for exceptions and integrations, as the US did for Basel I and II. However, strong political and practical reasons suggest not reopening the Pandora's box of Basel III. Nevertheless, there may be some margin in the implementation criteria for the Basel principles specifically aimed at the quality of LTI, in order to arrive at more targeted prudential regulation (*i.e.* taking into consideration the strategic nature of the investment, implicit government support, strength of collateral guarantees, etc.). On the other hand, the EU should prevent the improper extension of Basel III regulations beyond the banking (and the shadow-banking³⁵) sector.

An improper extension of Basel III rules beyond the banking sector should be avoided

Stricto jure, the rules of Basel III apply to banks, but do not apply to long-term investors such as insurance companies, pension funds, SWFs and, in general, to development banks like EIB, CDC, CDP and KfW. However, Basel rules inspire Solvency rules and regulation regarding other long-term players; on the other hand, *de facto* and *by default*, the same rules (or very similar ones) are frequently applied by the markets (for instance, rating agencies) to these investors, dramatically reducing their capacity to finance long-term investment. A solution can perhaps be found in the framework of the new mission statement provided by the Seoul G20 Summit to the Financial Stability Board, proposing the extension of the Basel rules to other parties (shadow banks). An integrative protocol to Basel III, or another international document, could be envisaged, which could -- without changing the Basel III rules in regard to banks -- integrate and refine the regulations with respect to long-term investors.

An integrative protocol to Basel III could establish special rules suitable for the business models of long-term investors

This protocol should establish, above all, which of the Basel-like rules are relevant for the different categories of long-term investors, and which are instead special rules and exceptions aimed at the specific mission and business model of these institutions. Constraints placed on long-term investment (LTI) should be carefully evaluated within specific contexts. For instance, a defined-benefit pension fund is characterised by long-term and very long-term liabilities and tends to invest with a long-term horizon; its asset allocation basket includes items that are perceived as “rich” in the long run. When long-term liability replication is problematic and a good proxy-portfolio consists of risky assets that perform their balancing role only in the long run, the

immunisation of the balance sheet to very short-term changes in the risk factors is inefficient. This is why short-term constraints on pension funds are mostly irrelevant for long-term investors not facing short-term solvency concerns. By the same token, the usefulness of attributing spot-market valuations to assets whose valuation is inherently a long-term undertaking is questionable.³⁶

Reinforcing counter-cyclicality and lower capital charges on long-term liabilities

Therefore, in order to limit the negative consequences of prudential reform on the capacity of insurance companies to finance economic activity, two types of actions could be envisaged: (i) reinforcing the countercyclical character of measures proposed in Solvency II; (ii) extending the principle of a reduced charge rate to contracts with very-long-term liabilities, such as retirement contracts.

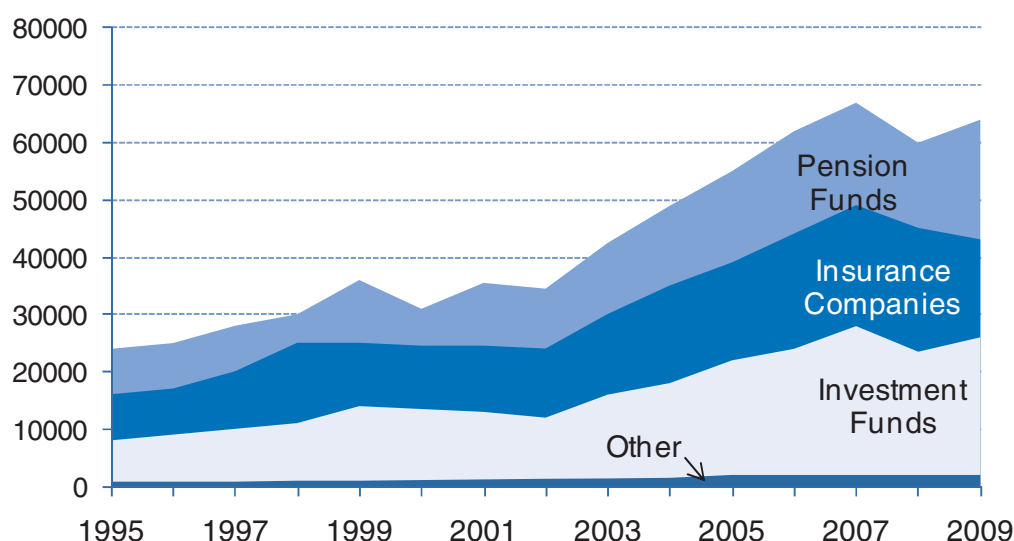
Moreover, in this context we want to emphasise the importance of looking at long-term institutional investors for what they are: *i.e.* long-term risk takers and long-term asset holders. If enough investors with a long-term horizon were active in the financial market place, they could act – as they once did – as shock absorbers (*i.e.* increasing liquidity and reducing volatility by buying into depressed markets).

Long-term investors are shock absorbers and growth engines with significant weight

Even more importantly, long-term investors could become a powerful financial engine for achieving strong, balanced and sustainable global growth. Long-term institutional investors are in fact potential investors in the financial instruments envisioned for project financing. With assets estimated at USD 50-60 trillion (USD 30 trillion, excluding investment funds, but including pension funds, insurance companies, SWFs, endowments funds and development banks), long-term institutional investors are potentially huge players in financing growth-stimulating investments (Figure 15).³⁷

Figure 15. Assets Held by Institutional Investors

In USD billion, 1995-2009



Source: OECD Institutional Investors Database.

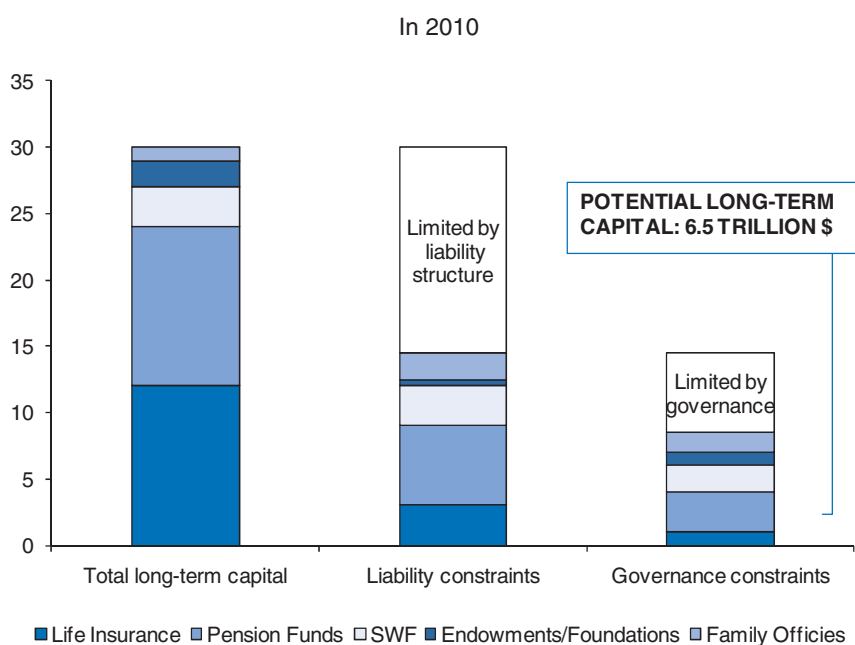
Today on average institutional investors allocate around 2%-5% of their resources to infrastructure, as an asset class. Potentially their balance sheets could have room for over USD 6.5 trillion in long-term assets (and over USD 12 trillion if investment funds are included), much of which could be placed in the equity or bonds issued for infrastructure projects (Figure 16).³⁸

4. The international accounting standards

Accounting rules should be revised to increase the potential of long-term investors

Within this context, accounting rules should also be partially revised to increase long-term investors' potential and to better represent the long-term nature of their investments.³⁹ Current accounting standards present two conceptual difficulties: in the IAS Board's philosophy, a company's assets and liabilities must be valued – in general – separately and independently; second, in many cases this valuation must be based on current values (marked to market).⁴⁰

Figure 16. Long-term investors' constraints



Note: Investment funds not included.

Source: World Economic Forum (2010).

The current valuation approach contains major pitfalls for financial communication to investors, supervisors and other stakeholders

This specific valuation approach (IAS 19 and IAS 39 for instance) is particularly damaging for LTIs. Indeed, it consists in attributing instant market values to assets whose valuation should, by their character, be based on several years. By doing so, market volatility is immediately transferred to investors' balance sheets and profit-and-loss accounts. Moreover, the current accounting reporting system prevents to check the quality of the fit between assets and liabilities. For instance, it is questionable whether short-term fluctuations in interest rates and asset prices should immediately be recognised since pensions have long-term commitments.

These two difficulties represent major pitfalls in financial communication for the investor and supervisory authorities, as well as for customers, intermediaries, shareholders, etc. The accounting rules set up for trading activities do not take into account the differences in the business models of financial institutions. This short-term horizon would strongly constrain the capacity of these types of long-term investors to hold stocks and other types of long-term infrastructure based assets.

Accounting rules fit for long-term investors may contribute to financial market stability

There is a need to (i) introduce accounting criteria that reflect long-term investors specific business model; (ii) distinguish between different temporal durations/matching liabilities and investments; and (iii) take into account the valuation of future cash flows over the long term. Appropriate accounting rules for long-term investors would also make a substantial contribution towards stabilising global financial markets and reducing short-term volatility.

Prudential treatment of financial assets that prioritises mark-to-market valuation is also hampering long-term investment. The mark to market accounting rules applied to typical long-term investors do not incorporate in their ALM distinctions between short-term and long-term investments. Therefore, a change to the prudential principles would be recommended. Due to the mark-to-market rule, the contingencies affecting the short-term valuation of these investments are immediately reflected in investors' financial statements – through higher earnings volatility and additional solvency requirements – although the actual time horizon for these investments far exceeds the reporting period.

5. Fiscal incentives

Further reforms should include tax incentives, project financing and corporate governance

A friendlier regulatory framework, which should be adopted at national, regional and global levels, should involve not only accounting standards and prudential principles, but also tax incentives, better (sectoral) regulatory mechanisms for project-financing initiatives, and corporate governance systems designed to stimulate long-term (rather than short-term) investment overall.

Fiscal disadvantages to long-term investment include tax systems that favour debt financing over equity

From a fiscal policy point of view, in many European countries strategic long-term investments (LTIs) are disadvantaged compared to short-term investments. These discriminatory tax disincentives should be abolished. For instance, most tax systems favour debt finance over equity, since interest paid on debt is deductible against corporate profits, while dividends are taxed. As a result, the after-tax cost of debt financing is lower relative to equity financing. Although equity financing allows corporations more flexibility in undertaking fixed investments (since it does not impose strict repayment conditions), the more-favourable tax treatment of debt may lead to less effective capital structures and encourage excessive indebtedness. Neutrality in financing choices should not necessarily be achieved by removing the deductibility of interest payments, but by granting equivalent advantages to equity financing.

“Ad hoc” incentives for financial firms

Considering the important positive externalities of the strategic long-term investments, we could envision “ad hoc” incentives for financial products and

to invest long-term should be introduced

firms to fund long-term initiatives of general benefit, similar to the fiscal incentives granted for US Project Bonds (through the US administration's stimulus plan) and the incentives awarded to the renewable energy projects by many European tax systems.⁴¹ Following the same logic, higher tax rates are often levied on short-term real estate transactions (buying and selling within three to five years), due to the speculative nature of the transaction.

Tax incentives could replace some direct public investment and may be self-financing

Tax incentives may become part of governments' contribution to long-term investment. In the case of investments now requiring public grants to be attractive, tax incentives may replace the lack of direct public financial resources. As a result, tax incentives can have a powerful positive effect to attract capital flows on these long-term investment vehicles and, in the long run, might also recoup its "public" cost by extending the tax base on capital investment itself.

6. Public Private Partnerships (PPPs)

PPPs can provide effective ways to actualise infrastructure projects

As outlined by the European Commission, Public Private Partnerships (PPPs) can provide effective ways to actualise infrastructure projects, to provide public services and to innovate more widely in the context of these recovery efforts. At the same time, PPPs are interesting vehicles for the long-term development of infrastructures and services, bringing together distinct advantages of private and public sectors.⁴² In addition, at the EU level, PPPs can offer extra leverage for key projects that achieve shared policy objectives, such as: combating climate change; promoting alternative energy sources as well as energy and resource efficiency; supporting sustainable transport; ensuring high-quality, affordable health care and accomplishing major research projects such as the Joint Technology Initiatives. Finally, PPPs offer the capacity to leverage private funds by pooling them with public resources.

A good and stable framework is required to attract private and foreign investment

As many OECD Reports have shown, private and foreign investment in PFs and in PPPs also requires (i) a good and stable political and legal framework, with reasonable regulatory and bureaucratic costs; (ii) an efficient and technically skilled public administration and government services; and (iii) a reliable judicial system. In many countries, better regulation is the first requirement toward attracting private and private/public foreign investment.

At the EU level, a common framework of principles and rules for improving regulation could be very important in reducing regulatory and non-financial risks. We all know that regulatory risk is a very large part of the cost of financing and the feasibility of large project financing initiatives. We also know that regulatory rules are nationally determined and so harmonisation in this area is very difficult as it involves legal systems that differ greatly. However, sharing best practices is a good first step towards a more harmonised framework.

Best practices should evolve into guidelines and manuals to be

In regard specifically to PPPs, new rules, incentives and common "best practices" should be introduced at the EU level as well as at the member States' level, in order to improve the efficiency of these instruments. Gradually, these "best practices" should evolve into guidelines and manuals to

jointly utilised at the EU level

be jointly utilised by all Member States. Regardless, it will be important to ensure that the applicable rules are appropriate and supportive while fully respecting the principles of the Internal Market.

Proposal to create a supportive European framework for PPPs

In this context, the new Commission Communication of 19th November 2009 (EC, 2009b) aims at creating a supportive European framework for PPPs that is designed to address the needs of citizens and the EU Community goals. According to the European Commission, a PPP group could invite relevant stakeholders to discuss their concerns and further ideas with regard to PPPs. Where appropriate, the Commission will issue guidance assisting Member States in reducing the administrative burden and delays in the implementation of PPPs. In this context, it will explore ways to facilitate and to speed up the attribution of planning permits for PPP projects. It will be important to work with the EIB with a view to increasing the funding available for PPPs, by re-focussing existing Community instruments and by developing financial instruments for PPPs in the key policy areas. Moreover, it will be necessary to review the relevant rules and practices in order to ensure that there is no discrimination in the allocation of public funds, where Community funding is involved, depending on whether the management is private or public.

According to the conclusions of the European debate at the Eurofi 2010 meeting, it is desirable to put in place, at the European level, certain practices. These include a standardised approach for the assessment and the distribution (including its formalisation) of a PPP's risks between the public authorities and private partners, in addition to a standardised mechanism for reporting on PPP performance. Such practices would make possible to establish a common language with a view to accelerating the establishment of such partnerships from both an industrial and financial perspective, helping at the same time the financial attractiveness of such investments.

7. Corporate governance

“Shareholder value” model is partly responsible for short-termism

The corporate governance model of the so-called “shareholder value” is partly responsible for the short-termism that recently characterised global capitalism. Such a model places the maximisation of shares value at the centre stage, taking precedence over the industrial or social value of the firm. The management is contractually linked only to the shareholders and not to the workers, or to the stakeholders or, more generally, to the industrial future of the firm. The managers of the firm are “winners” if they maximise the value of the shares, usually directly related to generous bonuses and stock options.

Principles on compensation in the financial sector should be adopted swiftly

This mechanism has created strong incentives to maximise short-term rather than long-term value, and this is compounded by the unintended short-term bias inherent in prudential and accounting regulations, as illustrated above. In this respect, the FSB has developed principles for compensation in the financial sector which we hope will be adopted swiftly by all jurisdictions as mandated also by the G20.⁴³

Proposal to improve the corporate

The Commission has issued a Green Paper launching a public consultation on possible ways forward to improve the corporate governance

*governance
framework in
Europe*

framework in Europe (EC 2010a, 2011). In the Green Paper, the issue of short versus long-term is addressed: “a focus on short-term performance criteria may have a negative influence on long-term sustainability of the company [...] Shareholder engagement is generally understood as actively monitoring companies, engaging in a dialogue with the company’s board, and using shareholder rights, including voting and cooperation with other shareholders, if need be to improve the governance of the investee company in the interests of long-term value creation. Although engagement on the part of short-term investors may have a positive effect, it is generally understood as an activity which improves long-term returns to shareholders. Therefore, the Commission believes that it is primarily long-term investors who have an interest in engagement (investors with long-term obligations towards their beneficiaries, such as pension funds, life insurance companies, state pension reserve funds and sovereign wealth funds).” (EC, 2011, pp. 21-22.)

*Investment
horizons have
shortened,
producing
increased volatility
and lack of
“ownership” of
listed companies*

Over the past two decades, investment horizons have shortened considerably. Turnover on the major equity exchanges is now running at 150% per year of aggregate market capitalisation, which implies an average holding period of eight months. At the same time, the intermediation of investments has increased, amplifying the importance of the agency relationship between long-term investors and their asset managers. It has been argued that the agency relationship actually contributes to short-termism on the market, which may also cause mispricing, herd behaviour, increased volatility and lack of “ownership” in listed companies. Some investors have also complained of a “regulatory bias” towards short-termism, which hinders long-term investors, in particular, from adopting longer investment strategies.

*Solvency and
accounting rules
have had
unintended
consequences*

During the Commission’s preliminary consultations with stakeholders it was noted that solvency and pension fund accounting rules, which were intended to promote greater transparency and more effective market valuation, have had unintended consequences.

The Commission recognises investors are free to choose a short-term-oriented investment model without engagement. However, the agency relationship between institutional investors (asset owners) and their managers contributes to capital markets’ increasing short-termism and to mispricing. This issue is particularly relevant as regards the inactivity of long-term-oriented shareholders.

*Certain incentives
in asset
management
contracts may
contribute
significantly to
short-termism*

It appears that methods for evaluating asset managers’ performance, as well as the incentive structure for fees and commissions, encourage asset managers to seek short-term results. There is evidence (confirmed in the Commission’s dialogue with institutional investors) that many asset managers are selected, evaluated and compensated based on short-term, relative performance. Performance evaluation on a relative basis, *i.e.* the extent to which they outperform or underperform a specific market index, can encourage herd behaviour and a short-term focus, particularly if short intervals are used to measure performance.

The Commission believes that short-term incentives in asset management contracts may contribute significantly to asset managers' short-termism, which probably has an impact on shareholder apathy.

VI. New European financial instruments for long-term investment

Strategic investments as well as innovation projects are a EU priority

The financial crisis has had a significant impact on the capacity of European businesses and governments to finance long-term projects of strategic and/or innovative significance, long considered a priority for EU growth – since the Delors white paper *on Growth, Competitiveness, and Employment* (EC, 1993) and the Lisbon Agenda (2000). More recently, the prioritisation of strategic investments has been emphasised by the *Europe 2020 Strategy* (EC, 2010e) and by the Monti Report (Monti, 2010).

As highlighted in these documents, long-term investments are crucial for EU growth, especially in the infrastructure sector, with projects such as the Trans-European Transport Networks (TEN-T), whose importance is also stressed in the Lisbon Treaty (Art. 170-171 TFEU).

Innovative financial instruments at the EU level are needed

In a period of sovereign debt crisis, the key issue for Europe is how to increase investment in medium- and long-term projects that are particularly significant for the region. To support the necessary level of investment, innovative financial instruments are needed at the EU level.

EIB and other public development banks are key to financing long-term investments and designing new financing instruments

The European Investment Bank (EIB) and other public development banks represented in the Marguerite Network (EIB, KfW, CDC and CDP) could play a key role in financing long-term investment and designing new financing instruments, in line with the new EU institutional framework. In fact, Art. 309 TFEU of the Lisbon Treaty defines the task of the European Investment Bank as contributing (through recourse to the capital markets as well as its own resources) to the balanced and steady development of the internal market in the interests of the European Union. For this purpose, the Bank provides loans and guarantees (on a non-profit basis) that facilitate the financing of projects in all sectors of the economy.

New financial instruments will provide an interesting long-term investment opportunity

New architectures must be considered for equity funds, project bonds, debt instruments, and more generally, credit-enhancing initiatives. New vehicles should be created to improve the liquidity of these instruments while maintaining their typical risk-return profile. If successful, these new financial instruments could provide an attractive long-term investment opportunity for institutional investors such as pension funds, insurance companies, SWFs, as well as for households.

1. Effects of the financial crisis on PFIs, PPPs and the “Marguerite” network

Traditional sources of senior debt for infrastructure and

Traditional sources of senior-debt financing for infrastructure and energy projects decreased sharply during the global recession. Only a few emerging sectors, such as strategic investments in renewable energy and environmental

energy projects fell sharply in the global recession

infrastructure, are expected to be an increasingly attractive asset class for banks and capital markets, owing to the strong incentives offered by many governments. In most other sectors, capital markets are providing insufficient debt financing to these sectors, owing to a shortage of transactions backed by monoline insurers and low investor appetite for unguaranteed project bonds.

Obtaining long-term bank credit is still especially challenging

Obtaining long-term bank credit is still especially challenging at present due to liquidity and capital constraints on major banking groups. Syndicated loan volumes are down as are the amounts banks will commit to individual transactions.

More equity capital is required

As financial institutions are increasingly risk-averse and public grants are declining, leveraged financing structures require far more equity capital than in the past. But it is difficult to get major infrastructure projects off the ground without the involvement of private equity capital. Long-term public institutional investors may play an important role in attracting this private capital.

“Marguerite”, the first equity fund for European long-term investments

The European Council of December 2008 endorsed the creation by EU institutional investors of a market-oriented equity fund called “Marguerite: the 2020 European Fund for Energy, Climate Change and Infrastructure” whose core sponsors are *Cassa Depositi e Prestiti* (CDP), *Caisse des Dépôts et Consignations* (CDC), the European Investment Bank (EIB) and *KfW Bankengruppe* (KfW). The European Commission, which endorsed the project from the very beginning, joined the project with an equity stake, followed by ICO of Spain and PKO of Poland, increasing to seven the number of founders

The Fund aims to contribute to the development of Trans-European networks in transport and energy

On a general level, the Fund aims to make a significant contribution to the development of the Trans-European Networks in Transport and Energy (TEN-T and TEN-E) as well as to tackle climate change and the implementation of the EU's 20/20/20 objectives, in particular by supporting renewable energy technologies. The Fund will have a positive effect (both direct and indirect) on infrastructure development. Clearly, the direct effect the investment enabled by the Fund. Moreover, the fund can be considered as a prototype for financing instruments (indirect effect) combining equity resources with debt/capital market funding through Public Private Partnership arrangements.

The Fund will mobilise investments in the European energy and infrastructure sectors

It is estimated that during the next few years, due to the multiplier and support effects for private funds, the 1.5 billion Marguerite Fund will mobilise investment of about 30- 50 billion in the European energy and infrastructure sectors. The geographical scope of the investments should span all 27 EU member States. The Fund will be an investment vehicle for long-term institutional investors from both the public and private sectors. Mainly investing in equity stakes, primarily in new greenfield projects, the Fund will also have associated debt facilities managed directly by each individual institution.

The Fund is “market oriented” but has

In brief, the Fund will be “market oriented”, but it will be distinguished from traditional private equity funds by: (1) seeking “non-speculative” returns; (2) investing with a long-term horizon; and (3) gathering significant

distinguishing characteristics

institutional endorsement, helmed by the European Commission among the founding members.

The Fund will serve as a prototype to support the EU 2020 Agenda

The “Marguerite” Fund proves that a “reinforced co-operation” in the European financial sector is a feasible option. It will serve as a prototype for a “family of European funds for growth” to support the EU 2020 Agenda’s ambitious objectives. It may also foster the emergence of a new and broad co-operation of long-term *institutional* investors – a “European Super Fund” – a solid buttress for strategic infrastructure.

2. European guarantee schemes and Project Bonds⁴⁴

Potential alternatives exist for funding infrastructure, within the limits imposed by current economic conditions, as noted earlier. The resulting investments could prove to be an attractive opportunity for pension funds, insurance (especially life-insurance) companies, sovereign wealth funds and households.

Project bonds could be an important debt instrument for financing European PF initiatives

Single-project bonds for energy or transport programmes could be particularly important at a time when leverage is severely diminished, following the collapse of monoline insurers toward the end of 2007 as well as of several securities’ markets.

The “reputation premium” provided by the EC makes these bonds attractive

The “reputation premium” generated by the European Commission’s participation and the prestige of the other founding shareholders would surely lower the costs and raise the credit ratings of the securities involved. This process can create an asset class attractive to investors seeking to match their liabilities with long-term, fixed-income assets, including European households and foreign sovereign wealth funds. With well-prepared projects, funds raised directly would not officially deplete public accounts of either the European Union or individual member state.⁴⁵

In the short run, projects bonds may be a substitute of the Eurobonds in financing European infrastructures

In the past, a number of Member States and a strong majority of the EU Parliament’s members have urged greater Commission involvement in the financing of the TEN-and TEN-E projects, and called for the issuance of Eurobonds to finance the dedicated EU budget. An amendment to the European Treaties is probably needed before the Commission can tap into the capital market. Such a path promises to be sufficiently challenging so as to render this route relatively impractical in the immediate future.

In contrast, European project bonds issued directly by the project sponsors present a quick and attractive financing instrument. Due to the recent difficulties experienced by monoline insurers, no such securities currently exist on the market. Prior to the crisis, a significant part of the project bond market was “wrapped”, or in other words, secured with guarantees from AAA-rated monoline insurers, with resulting high credit ratings.

The Marguerite Network, together with the EU and the

The Marguerite Network could provide debt-service guarantees to back project bonds. Under the current regulatory framework, guarantees are an acceptable alternative to loans provided to cover risks. Bonds issued for

EIB, could provide debt-service guarantees

individual projects, if European Super Fund-sponsored, would naturally adopt the Network's credit rating.

With a solid reputation and technical expertise in “assembling” PPP projects, and an added monoline guarantee, any Marguerite-backed instrument, given its high rating and low cost, would be certain to attract investors. In the event a project's full funding were not covered by bonds, banks could then invest. Single-project bonds promise: (a) non-encumbrance on national budgets (or more pointedly on Network members' accounts – other than the cost of the guarantees); (b) facilitation of projects with long-term goals – many of which as of late have fallen outside market means; (c) “market conformity” among the instruments; and (d) no crowding-out effect – as a portion of debt could be bank-designated. Note the above proposal is similar to that presented in US President Barack Obama's stimulus plan,⁴⁶ but tailored to fit Europe.

Projects financed by the issuance of securities on capital markets and guaranteed (by Marguerite) promise a well-planned structure and regular and reliable returns. Projects presenting technologically complex construction or other intricacies will most likely be evaluated and depend on the availability of cash flow payments, rather than asset-use support.

Two other new instruments (LGTT and RSFF) are managed by the EIB

Within the framework of PPPs, the European Commission is working on the development of two Trans-European Transport Network (TEN-T) instruments to be managed by the EIB, which will be based on risk-sharing arrangements between the Commission and the EIB:

1. Loan Guarantee Instrument for TEN-T projects (LGTT). The LGTT is a guarantee facility that facilitates greater private-sector involvement in the financing of TEN-Transport infrastructure. LGTT is designed to guarantee revenue risk during a limited period following construction of TENs projects, notably under a PPP structure. Individual LGTT guarantees are available through the EIB. In total, the LGTT facility is expected to support 25 to 35 TEN-T projects by 2013.
2. Risk-Sharing Finance Facility (RSFF). The RSFF is an innovative credit-risk sharing scheme jointly set up by the European Commission and the EIB, as well as the financing instruments under the Competitiveness and Innovation Programme (CIP). It will support higher-risk research, technological development and demonstration projects through loans and guarantees.

3. Europe 2020 Project Bond Initiative

The Project Bond Initiative builds on the EU-EIB experience in infrastructure financing

In his State of the Union speech on 7 September 2010, the President of the European Commission, José Manuel Barroso, announced the Europe 2020 Project Bond Initiative (the “Initiative”).⁴⁷ The Initiative will be launched by the Commission together with the European Investment Bank (EIB) in order to build on existing experience with joint EU-EIB instruments and the EIB's track record in EU infrastructure financing.

The Initiative is also open to other financial institutions

While the EIB will remain the Commission's principal partner, efforts will be made to ensure that the Initiative is also open to other financial institutions⁴⁸ with the requisite expertise and the willingness to take on the associated risks in partnership with the European Commission.

Support for companies issuing bonds to finance infrastructure projects

The principal idea behind the Europe 2020 Project Bond Initiative is to provide EU support to companies issuing bonds to finance large-scale infrastructure projects. The Initiative aims to attract additional private sector financing for individual infrastructure projects by improving the senior debt ratings of the project companies, thereby ensuring that their bonds can be placed with institutional investors.

The Commission's key role will be risk-sharing with the EIB (or other financing partners), enabling them to provide guarantees or loans to support such bonds. No bond issuance will be required by Member States' governments,⁴⁹ the EU or the EIB for this purpose.

EU-supported credit enhancement reduces funding costs

The EU-supported credit enhancement would allow the senior project debt to be issued in the capital markets through a new class of project bonds ("EU Project Bonds"), resulting in reduced costs for the financing of longer maturities, while meeting demand by institutional investors (such as pension funds and life insurance companies) for stable, long-term assets.

Credit enhancement could take the form of a debt-service guarantee or the issuance an additional layer of debt at the subordinate level. The choice between guarantee or loan would depend on the specific financial characteristics of the project, but neither form of support would substitute for shareholder contributions in the form of equity or shareholder loans.

In both cases -- debt-service guarantee or subordinated loan -- a maximum 20% of total bond funding for any one project would go toward ensuring that the senior debt bond issuance achieves an investment-grade rating (ideally around A or higher) in order to be attractive to institutional investors.

To sum up, the Europe 2020 Project Bond Initiative will use EU funds to attract additional private-sector financing for individual infrastructure projects through the capital markets with the help of project-finance techniques.

The Initiative could also be used to support project-loan financing and corporate financing

The intent is to act as catalyst for the re-establishment of capital markets as a significant source of financing in this sector, while increasing overall funding for infrastructure projects. While the Initiative will primarily focus on project bonds, it could also be used to support project-loan financing and corporate financing for specific sectors and projects.

The EU will define the project-eligibility framework and seek greater synergies between EU grants and the use of specialised financial instruments. The intent is to focus on the transportation (TEN-T), the energy (TEN-E) and the ICT sector.

The Initiative would be available for projects that are economically and technically sound, cost-effective, and which have a real prospect of attaining

financial viability (Figure 17). Project size should be higher than 100-150 million. The aim would be to make the maximum number of projects “bankable”.

EU risk would be ring-fenced, with the EIB covering the residual risk

The EU and the EIB would share the risk of losses on the project portfolio. The EU risk would be ring-fenced, and its participation therefore capped at an agreed annual budgetary amount. The EIB would be covering the residual risk up to its maximum exposure on any individual transaction.

The Initiative should build on the EIB's long-standing experience in the financing of infrastructure projects.

Figure 17. Potential blending area of the initiative

	Project Characteristics	Funding Instruments
Potential Blending	High financial profitability Low risk	Commercial bank loans (incl. EIB loans)
	Low financial profitability High risk	Joint Instruments, e.g. credit enhancement
	Low or negative financial profitability Very high risk	EU Budget / Grants

Source: EIB and authors' calculations.

EIB would carry out due diligence, financial appraisal and monitoring

Therefore, in partnership with the Commission, the EIB will help develop and continuously expand a pipeline of infrastructure and PPP projects on the basis of a clearly defined eligibility framework. The EIB would subsequently carry out the due diligence and financial appraisal in the structuring phase, price the guarantee or loan and monitor the project thereafter. EIB may also be prepared to act as controlling creditor according to principles to be established in agreement with market participants.

European infrastructure investment needs

Preliminary estimates point to European infrastructure investment needs of between 1 500 billion and 2 000 billion. More specifically, from now until 2020, investment needs are estimated as follows:

1. 500 billion in the Transportation sector, for the implementation of the Trans-European Transport Network (TEN-T) programme;
2. 1,100 billion in the Energy sector, by public and private entities for the implementation of the Trans-European Energy Networks (TEN-E):

- a. 400 billion on distribution networks and smart grids;
- b. 200 billion on transmission networks and storage capacity;
- c. 500 billion to upgrade actual and build new generation capacity;
- d. 38-58 billion to 181-268 billion in the telecommunications sector to achieve the Commission's broadband targets.

The European Commission (DG-ECFIN) and the EIB's estimated targets for EU Project Bonds' issues are in the range of 1-5 billion per annum at the beginning of the Initiative and in the range of 10-20 billion by 2020.

Two-thirds of EU infrastructure investment 2006-2009 was privately financed

Across the EU, from 2006 and 2009, one-third of all infrastructure investment needs were financed directly by the government sector (mainly education investment) whereas two-thirds were financed by the private sector (mainly utilities investments: energy, water, sewage and waste).

Most private-sector infrastructure investment is undertaken directly by utility and transport companies, via so-called corporate finance. Infrastructure investments through a Special Purpose Vehicle (SPV) using project-financing techniques (including public private partnerships – PPPs)⁵⁰)⁵¹ has risen in the meantime to around 10% of total private-sector infrastructure investment.

The European Project Bond market could reach a size of approximately 110-200 billion

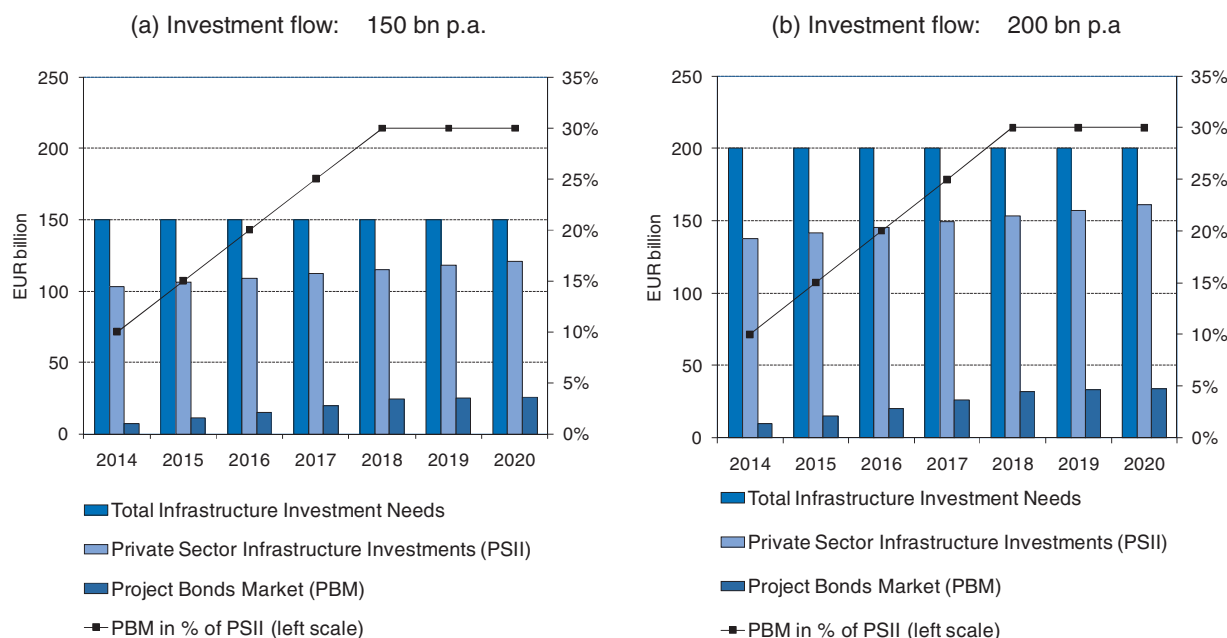
Considering that the Initiative is expected to be fully operational in 2014 and assuming conservatively that:

1. estimated investment required by infrastructure of 1500-2 000 billion (2011-2020) is almost linear over the next decade, thus around 150-200 billion per year;
2. the Initiative would increase the private sector's share of infrastructure investment, from the current two thirds to about 80% in 2020 (an increase of 2% per year);
3. the Initiative is targeting between 10% (the starting level) and 30% of private-sector infrastructure investment (an increase of +5% per year);
4. the typical leverage of an SPV in a project-financing structure (including PPPs) is a 80/20 debt/equity ratio;

this could lead within five to seven years to the creation of a European Project Bond Market of approximately 110-200 billion (Figure 18), depending on the type of EU-backed support (a debt-service guarantee or a subordinated loan).

EU-backed EIB commitment could be 5-8 billion

According to this preliminary estimate, EU-backed EIB support of at least 25-40 billion would be needed to cover potential risks arising from the Initiative, and therefore, even assuming a 20% provisioning ratio, an EU-backed EIB commitment of around 5-8 billion.

Figure 18. EU project bonds market

Note: To estimate the size of the EU Project Bond market we assume that infrastructure investment need is linear over the period 2011-2020 and that the Project Bond Initiative will be fully operational in 2014. Since the amount of required investment in infrastructure is estimated by the European Commission in about 1 500-2 000 billion by 2020, this implies an investment flow equal to about 150-200 billion per year. Panel (a) refers to the estimate of 150 billion per year, while panel (b) refers to the estimate of 200 billion per year. Furthermore, we assume that the private sector's contribution to infrastructure investment needs will increase linearly at the rate of 2% per year (from current 2/3 to 80% in 2020). Finally, we assume a 80/20 debt/equity ratio, typical for a project financing framework.

Source: Authors' estimates based on European Commission data.

Nevertheless, the creation of a Pan-European Project Bonds market of 110-200 billion raises several issues

Nevertheless, in our view, the creation of a Pan-European Project Bonds Market of 110-200 billion raises, among other things, the following issues:

1. Liquidity of the primary, and above all, the secondary market:
 - a. The potential size of the EU Project Bonds' market can be overestimated: over the last 15 years, despite monoline guarantees that made the resulting project bonds more attractive for institutional investors than the EU-supported credit enhancement, 100 billion of infrastructures were bond-financed (above all in the UK);
 - b. Issuance and/or underwriting risks in bought deals and/or in auction processes;
 - c. Liquidity risk in private placements;
 - d. Detailed analysis of infrastructure projects that are suitable for EU Project Bonds' issues. It is critical to build up a significant and reliable pipeline of potential investments in order to persuade institutional investors to consider EU Project Bonds as a new asset class for their portfolios;

- e. Potential need for a Public Infrastructure Bonds Agency for facilitating EU Project Bonds' market liquidity;
2. Regulation and fair competition;
3. Fair distribution of EU-supported credit enhancement for project bonds financing of infrastructures in the Member States;
4. Settlement procedures.

Institutional investors with long-term liabilities were key players

Historically, investors in PPPs and infrastructure-project bonds have been institutions with long-term liabilities against which they needed to have assets to produce matching long-term cash flows. The key players have been pension funds and life insurance companies, both of which invested directly, as well as fund management companies, whose clients are also pension funds and life insurance companies.

But Solvency II may have a negative impact

The potential negative impact of Solvency II on institutional investors' capital requirements is that it could induce a lessened appetite for buying/investing in EU Project Bonds, thus reducing the potential market scope.

Different capital requirements for infrastructure bonds are needed

In our view, since the default curve and recovery rates are typically much better for infrastructure bonds than for corporate or similar bonds, it is critical that regulatory efforts introduce different capital requirements for infrastructure bonds vs. corporate bonds, thus allowing for a specific (and different) module for evaluating infrastructure debt..

The main rationale behind EU Project Bonds

In our view, the main rationale behind EU Project Bonds' issuance can be summarised as follows:

- lower financing costs overall (including guarantee fees, etc.) vs. bank loans;
- longer tenor (increase the debt sustainability, etc) vs bank loans;
- increased sources of funding (capital markets vs cash constraints of financing banks – credit crunch or financial crisis) and potentially more infrastructure investments;
- higher standardisation potential for the financial instruments, which could be complementary to bank loans.

Main drawbacks of project-bond financing

Generally, the main drawbacks of infrastructure financing through project bonds are:

- lower flexibility: in regard to potential re-financing needs or opportunity costs over the project's life-cycle; and as regards prepayments and related breakage costs.

- negative carry: debt issuance occurs at financial close even if all the funds will not be required until later in the construction programme.

Need to attract high-quality sponsors and high quality projects

In any case, we believe that EU Project Bonds must not only target institutional investors but their success and the related market's establishment rely also on the initial need to attract high-quality sponsors and high-quality projects.

Credit enhancement's positive effects

The EU-backed EIB credit enhancement's (in the form of a debt service guarantee or an additional layer of debt at the subordinated level) mechanism, chosen to support the Initiative, is likely (i) to attract private sector institutional investors to the financing of projects in all the relevant infrastructure sectors (transport, energy and ICT), (ii) to facilitate/accelerate the conclusion of financing packaging for creditworthy projects, and (iii) other things being equal, to have a positive impact on the sustainability of infrastructure debt, by stretching maturities and lowering overall financing costs.

Proposals to increase liquidity include the creation of a Pan-European Public Infrastructure Bonds Agency

Institutional investors will primarily focus on market liquidity in assessing the attractiveness of investments in EU Project Bonds (a new asset class for their portfolios to which to allocate approximately 3% and up to a maximum amount of 5% of total) and therefore:

- to generate liquidity, it is critical to build-up a significant and reliable pipeline of potential infrastructure projects to be financed by EU Project Bonds. This would also mitigate the potential concentration risk that institutional investors may perceive for their portfolios;
- to assure and facilitate liquidity (above all in the secondary market), the creation of a Pan-European Public Infrastructure Bonds Agency would not only be desirable but potentially unavoidable in the medium-term.

Need for a Pan-European market platform

There is consequently, in our view, a need for an EU common economic and financial policy that could lead to the creation of a Pan-European market platform where the EU Project Bonds could be listed and traded.

In addition to fiscal incentives

Fiscal incentives, at a national level, similar to those provided recently by the Obama Administration in the US, can represent an additional way of supporting the establishment of an attractive and efficient (liquid) EU Project Bonds' market.

4. Eurobonds

The financial instruments discussed are advantageous because they have a very limited direct impact on public resources. Not ordinarily funded directly by the European Union's budget or that of Member States, they do not increase general government debt, instead, they draw on funds from private capital markets and global institutions, or are raised through institutional investors and

others that lie outside the regular scope of government. European households and significant private and public capital outside of Europe are seeking reliable, diverse long-term investment opportunities.

The array of instruments that could finance strategic European infrastructure projects is incomplete if “Eurobonds”, or “Union bonds” are excluded.

Eurobonds are European sovereign debt instruments

Unlike project bonds, Eurobonds are actual European sovereign-debt instruments. Proposed by Delors⁵², and reintroduced by Tremonti, they have met with staunch resistance.⁵³ More recently, in Barroso’s speech of 7 September 2010, the head of the European Commission re-launched the idea of Union Bonds for financing long-term infrastructure investments, recalling previous proposals: by Delors in the white paper on *Growth, competitiveness, and employment* (EC, 1993a); in the Commission Communication *Stable money – sound finances* (EC, 1993b); and in the Giulio Tremonti’s *Action Plan for Growth* (2003).

Issuance of Eurobonds was recommended for financial market integration and stability, but could also play a role in investment financing

Also Mario Monti in his Report (Monti, 2010) underscored the EU need for Union bonds, due to the fragmentation of the government-bond markets in Europe; as a result, European bond markets are less liquid than their counterparts in the US and Japan, resulting in higher costs for investors, issuers, other debtors and, ultimately, European citizens. The issuance of Eurobonds would be recommended for a sound financial market integration and financial stability. However, in the future, they could also play a role in financing investment and growth. In such a case, they should be limited to project-financing initiatives that have stable, long-term cash flows, such that they do not weigh on the EU’s and/or Member Countries’ public budgets.

Union bonds could provide a “safe haven” alternative and favour the Euro as reserve currency

The potential and expected size of the Union bond market could satisfy a growing demand for risk-free securities of the same quality as German and French government bonds but with liquidity features directly comparable to US Treasury bonds. Indeed, Union bonds could represent a “safe haven” alternative in the global capital markets and favour the Euro as a reserve currency at the international level (Favero and Missale, 2010)

5. The Junker/Tremonti proposal

Only one year after the introduction of the European Monetary Union (EMU) in 1998, the market for fixed-income government securities was taking shape as an almost perfectly integrated market. The spreads between high-yield Member States (Portugal, Italy, Spain) moved, in fact, from the high peak of 300 basis points in the pre-EMU to less than 30 basis points of post-EMU. The differentials among various national bonds remained low, although not negligible, for almost ten years.

The European sovereign debt crisis has reopened the issue of Eurobonds

With the eruption of the financial crisis the differentials became sizable. Thus, the crisis in European public debt has reopened the issue of Eurobonds which has been on the agenda for some time but never really got enough serious consideration. Project Bonds can already be considered European debt

for growth. In fact, they are related to European strategic projects in the fields of infrastructure, energy and telecommunications. In the Project Bond model, the debt is guaranteed by the public sector – EU, EIB – but is financed with domestic private savings and by international private and public savings and not with public budgets.

Eurobonds for stability and Project Bonds for growth could be closely related in a European Sovereign Debt system, but moral hazard needs to be addressed

In the future, these two forms of debt – Eurobonds for stability and Project Bonds for growth – could be closely related with one another – giving birth to a European Sovereign Debt system. In this respect, the actual European Financial Stability Facility (EFSF) could represent a starting phase and the basic mechanism to develop the new Eurobond. In fact, as also stressed by Favero and Missale (2010), the efficacy in terms of reduction of borrowing costs would be improved only if the new security is issued and guaranteed by all Member States jointly, as actually in the EFSF. Since the mutualisation of risks could create in the end a problem of moral hazard for fiscally less virtuous countries, the design of this new security must balance the potential benefits among all Member States.

Developing the EFSF with the aim of creating a new market for EU-guaranteed bonds with capped guaranteed issuance

The recent proposal made by Junker and Tremonti⁵⁴ seems to fit in with this perspective. In particular, their proposal explicitly considers the potential development of the EFSF with the aim of creating a new market for EU-guaranteed bonds. Each Member State would have the possibility to issue Eurobonds up to 40% of GDP. These bonds, jointly guaranteed by all Member States, would have the highest rating (in particular, a EUR 500 million fund could be sufficient to guarantee an AAA rating). The remaining debt issue would be the responsibility of each State. An agreed procedure in case of default or restructuring events is planned in order to encourage fiscally less virtuous States to adopt corrective fiscal policies.

Plans for the creation of a European Debt Agency (EDA) to succeed the EFSF

Moreover, the proposal envisions the creation of a European Debt Agency (EDA) to succeed the EFSF. This Agency would have the task of issuing new bonds up to 40% of each State's GDP, and to buy bonds of financially stressed marginal countries with the aim to discount their yields compared to European guaranteed ones. This mechanism would generate a broader bond market, thoroughly comparable to the American one, reducing, in this way, the liquidity risk of each national bond market. Moreover, highly indebted countries could benefit from lower borrowing costs. In the case of debt restructuring, the private sector could exchange part of its bond holdings for new bonds issued through EDA. The procedure would be the same as the EFSF one and would lead to a significant reduction in debt-to-GDP ratios of highly indebted countries since their bonds would be exchanged at a price very close to their face value.

A Eurobond market would strengthen the Euro system's financial governance and credibility

The Junker and Tremonti proposal has the advantage of drawing on a mechanism characterised by well-balanced incentives and benefits among Member States. Furthermore, this mechanism is not so different from the present EFSF. Finally, a Eurobond market would strongly contribute to reducing pressure on the government-debt securities of non-core economies while, at the same time, strengthening the Euro system's financial governance and credibility.

VII. Conclusions

Long-term investment can foster stability and growth; it needs to be supported by the regulatory framework

An intense competition for long-term finance will characterise the world in the coming years. In the aftermath of the recent crisis, the issue of long-term investment has attained a central role in the debate among academics and policy makers. Now that the worst phase of the crisis seems to be over, the attention of the financial community to such an issue has somewhat faded away. However, we need long-term investment for financial stability, for fiscal consolidation, and, more generally, for long-term sustainable global growth. We tried to show that the two goals – stability and growth – are not mutually exclusive. They are, in fact, interconnected by a cross-correlation. Long-term investment will contribute to both financial stability and fiscal recovery. Well-calibrated regulation must be friendlier to long-term investment. Good regulation, in short, must be able to promote “virtuous circles” between stability and long-term growth. Elements of this new scenario that should be carefully taken into consideration by policy makers and national and international regulators are: (1) the sensitivity of long-term growth to the cost of capital; (2) the need to eliminate regulatory disincentives against long-term investment; and (3) the urgency of avoiding excessive regulatory zeal.

Financing for infrastructure is a small fraction of global investors’ total assets

The amount of financing needed to fund global demand for infrastructure projects, although very large, amounts to just a few percentage points of the global investors total asset allocation, which is estimated to be over 60 trillion euro. A set of well-designed rules and incentives, and the creation of a few liquid markets for new long-term financial instruments could easily achieve the desired level of infrastructure investment needed worldwide.

A new regulatory framework and instruments are needed to promote investment in infrastructure, innovation, research and the environment

The message that comes out from these estimates is that, even though long-term investment needs are large, they represent a relatively small portion of total financial assets and savings held by institutional investors worldwide (around 5%-7%). The effect of long-term investment on the economy and competitiveness, however, is indeed extremely important. It then seems quite reasonable to build a new regulatory framework (accounting, supervision and fiscal rules) that is more favourable to long-term investment in infrastructure, innovation, research and the environment, and to introduce new dedicated financial instruments better able to attract private investment capital to these long-term, strategic projects.

Notes

1. For the estimates on long-term GDP growth see Citi Global Capital Markets (2011).
2. For estimates on savings and investment see McKinsey (2010).
3. *Ibid.*
4. *Ibid.*
5. See Tremonti (2008), p. 8.
6. McKinsey (2010).
7. The data on the estimated composition of central bank reserves are found in IMF (2009).
8. See Eichengreen (2009).
9. See Moghadam (2009).
10. IMF (2009).
11. The total for all currencies comes to 200% since each transaction involves two currencies.
12. IMF (2009).
13. See Goldberg and Tille (2008).
14. *Ibid.*
15. It is no coincidence that for some time now there has been discussion of the possibility of transferring a part of the world's reserves into IMF Special Drawing Rights, which are based on four currencies (dollar, Euro, yen and pound sterling). This marks a return to the "bancor" idea proposed by Keynes after World War I.
16. See the paragraph describing Union bond financial instruments.
17. "The current global economic crisis has encouraged talk of issuing Euro-area bonds with the backing of the entire set of Euro-area members, including, most importantly, Germany. If this were done on a significant scale and if this debt were to replace the member states' national debt securities, the Euro area would possess a market with roughly the uniformity and liquidity of the United States' Treasury market. But such radical fiscal federalism is not something to which the German government, among others, is likely to agree."
18. The US federal debt is forecast to be \$2,553 billion at the end of 2009 (*Economic Report of the President*, sent to the United States Congress in January 2009, Table B-78, p. 377), therefore about 1,670 billion (at the prevailing exchange rate on 4 November 2009).

19. The GDP of the EU-27 (2008) came to 12,506 billion (Eurostat figures).
20. European Commission (2009a).
21. See IMF (2011).
22. According to the definition of the IMF.
23. De Larosière (2011).
24. See De Larosière (2010).
25. The Long-Term Investors (LTI) Club was created in 2009 by the European Investment Bank, the French *Caisse des Dépôts et Consignations*, the Italian *Cassa Depositi e Prestiti* and the German *KfW Bankengruppe*, to bring together major long-term institutional investors and to coordinate their activities in the global economy in support of sustainable economic growth. Major public development banks and financial institutions (such as the *Caisse de Dépôt et de Gestion du Maroc* (CDG), the Russian *Vnesheconombank* (VEB), the Ontario Municipal Employees Retirement System – OMERS, the Mubadala Development Company from Abu Dhabi, the China Development Bank – CDB, the *Caisse de dépôt et placement du Québec* – CDPQ, the Polish Bank *Gospodarstwa Krajowego* – BGK, and the Turkish *Türkiye İsmail Kalkınma Bankası A.Ş.* – TSKB) joined the LTI Club in 2010.
26. *The Promotion of Long-term Values and Economic Stability*, 22nd June 2009 in partnership with the OECD. The conclusions of the June 22 Paris Conference have been presented at the 10th Annual OECD Forum, in Paris on June 23 and 24, 2009.
27. *What Priorities for the Incoming EU Authorities in the Light of the Financial Crisis?*, the Eurofi Financial Forum 2009, 29 September to 1 October, Göteborg. See particularly Bassanini and Reviglio (2009).
28. *Optimizing EU Financial Reforms for Achieving Resilience, Growth and Competitiveness. What Priorities? What Roadmap?*, the Eurofi Financial Forum 2010, 27th – 30th September 2010, Brussels. See especially the paper *For an EU Action Plan to Remove the Disincentives to Long-term Investment*.
29. *Long-term Investment in the Age of Globalisation*, Rome, 17th June 2010 (all papers in <http://www.astrid-online.it/Dossier--dl/DISCIPLINA/The-Long-T/index.htm>) and *Towards a Sustainable Future: The Role of Long-Term Investment*, Venice, 28th-29th Oct. 2010 (all papers are available at <http://www.astrid-online.it/Dossier--dl/DISCIPLINA/Studio--ric/index.htm>).
30. Letter to Mr. Barnier, Proposals to adapt the EU's financial regulatory framework to long-term investments requirements, 20th September 2010, with an annex on proposals to promote long-term investments in Europe – conclusions of the European long-term financial institutions' working group on banking supervision.
31. See De Larosière, J. (2010), *ibid.*
32. See De Larosière, J. (2010), *ibid.*
33. See De Larosière, J. (2010), *ibid.*
34. See Ziemba, W.T. (2003).

35. The transfer of costly operations, in terms of capital requirements such as trading, to the so-called “shadow banking system” outside the scope of regulation and supervision, may endanger financial stability. The Financial Stability Board (FSB) is working on this issue under the direct mandate of the G-20, as stated by Finance Ministers and Central Bank Governors at their last meeting (“We welcomed the FSB work on the scope of shadow banking and look forward to the recommendations that the FSB will prepare for our next meeting on the regulation and oversight of the shadow banking system.” *G20 Communiqué*, 14-15 April, 2011, Washington, D.C.).
36. See Amenc *et al.* (2009) and Foulquier (2009).
37. OECD (2011); see also Eurofi (2010) and Conseil d’Analyse Économique (2010).
38. World Economic Forum (2011).
39. De Larosière (2010).
40. See De Larosière, J. (2010), *ibid.*
41. The very rapid growth of European private investment in renewable energy plants is commonly attributed to these tax or price incentives: *quod erat demonstrandum!*
42. See European Investment Bank (2010).
43. “We urge all jurisdictions to fully implement the FSB principles and standards on compensation. We call on the FSB to undertake ongoing monitoring in this area and will assess the results of the 2nd peer review on compensation practices by our next meeting.” *G20 Communiqué*, 14-15 April, Washington, D.C. On this topic, at global level, see OECD (2010).
44. On 25 September 2008, the Vice-President of the European Commission with responsibility for transport policy, Antonio Tajani, met with the EIB President Philippe Maystadt and his Italian and Greek Vice-Presidents to investigate potential strategies for maximizing the EIB’s involvement in funding major transport infrastructure projects. A decision was taken to set up an informal working group consisting of representatives from the Commissioner’s Cabinet, the Directorate General for Transport and Energy, and the EIB, with the objective of studying new tools for financing TEN-T projects and facilitating participation by private investors. For the most part, the proposals presented in this and the following section have been taken (in some cases *verbatim*) from an informal memorandum drafted by the working group in the summer of 2009.
45. If the funding is issued by a “market unit”, even if that unit is 100% owned by the State or some other public sector entity, and if, thanks to an appropriate financing structure, at least two out of the three risks that characterise a PFI project (construction, traffic and tariffs) are transferred to the market, then in compliance with the ESA-95 accounting rules, this debt is not included in the national public debt, valid for compliance with the criteria of the Maastricht Treaty and the Stability and Growth Pact.
46. In the United States, as in the European Union, the new administration is seeking to counter the recession with economic stimulus measures that include a significant commitment to new investment in public infrastructure. The stimulus package provides for the issuance of new types of project bonds, which are accompanied by significant direct tax relief for the net interest accrued on the bonds. For example, the “Recovery Zone Economic Development Bonds” are to be issued to finance public infrastructure projects or the construction of projects that deliver public services, as well as for projects connected with employment growth and career development. The “Qualified Energy Conservation Bonds” provide USD 2.4 billion for projects related to renewable energy and building maintenance to meet energy-efficiency and environmental standards. The new stimulus package also includes project bonds for rail

- transport, as well as USD 1.6 billion in “New Clean Renewable Energy Bonds” to finance biomass and hydroelectric power generation.
47. See http://ec.europa.eu/economy_finance/consultation/index_en.htm
48. International Financial Institutions (IFIs) and/or other Member State banks with a public sector mandate.
49. The Initiative does not intend to increase direct public funding and therefore governments’ indebtedness. Thus, it is not to be confused with what are commonly termed “Eurobonds”.
50. PPP structures are prevalent in transport, as well as increasingly in waste, health, education and other social sectors. Non-PPP project financing is well established in the energy and other utility sectors.
51. PPP structures are prevalent in transport, as well as increasingly in waste, health, education and other social sectors. Non-PPP project financing is well established in the energy and other utility sectors.
52. While Delors was the first to speak of a European investment plan in the communications sector, in research and in the major trans-European networks, as well as of “Union Bonds” as a means of financing such projects, the first proposal to issue such bonds actually dates back to Jean Monnet and the establishment of the ECSC. This is no coincidence, given that redemption of the bonds issued by the ECSC, an institution with legal personality, was backed by taxes on European coal and steel products. Indeed, Article 49 of the Treaty establishing the ECSC states: “The High Authority is empowered to procure the funds necessary to the accomplishment of its mission: by imposing levies on the production of coal and steel; by borrowing.” In the case of European companies, redemption of the European bonds could be directly backed by the rates charged to users for the services provided or by the licensing fees for the management of the infrastructure.
53. For a complete review of Euro Bond proposals see Favero and Missale (2010) among others. Documents, interviews, papers regarding Euro bonds are available at <http://www.astrid-online.it/Dossier--d1/EUROBONDS/Rassegna-s/index.htm>.
54. See Juncker and Tremonti (2010).

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Lessons from the Last Financial Crisis and the Future Role of Institutional Investors

by

Lars Rohde*

The dynamics of the financial crisis were driven by underpricing of risk and lack of transparency, which led to a loss of confidence when the bubble finally burst. Crisis resolution involved massive government interventions that caused a permanent transfer of losses to the public sector as well as sovereign-debt crises that may involve painful solutions. Letting banks fail is a necessary disciplinary factor, but this requires a well-defined “game plan” which did not exist in the crisis. Regulatory reforms underway aim at restoring confidence, but they may hamper the long-term potential of institutional investors. Nevertheless, institutional investors should still be able to provide risk capital – except for perhaps pension funds, which have been weakened by demographic developments. Finally, improving governance and reducing excessive risk-taking are important but challenging tasks. More active and involved shareholders could further these goals, but such participation will be hard to achieve. Therefore, transparent bonus and remuneration plans are perhaps the most important initiatives for preventing future systemic financial crises.

JEL Classification: G01, E6, G1, G2, G3.

Keywords: Financial Crisis, financial reforms, institutional investors, pension funds, long-term investment and saving, corporate governance.

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I. Lessons learned

1. The dynamics of financial crises

Falling risk premiums helped create a financial bubble

During the 15 years prior to the major financial crisis of 2008, the world witnessed a long period of falling risk premiums in the financial markets. Measured risk also declined, and investors seeking higher yields increased their appetite for risk. As reported yields rose, and measured risk fell, bubbles began to form in many markets. This obviously applied to the equities markets, but also, and especially, to the real estate markets. Remarkably enough, this was virtually a global phenomenon.

When the crisis erupted, a lack of transparency led to a loss of confidence

When the asset bubble began to burst, financial institutions worldwide had to concede that the value of loan portfolios was being strongly eroded. The new realisation was that it was hard to identify precisely how the residual risks were distributed. Greater use of financial instruments and the development of sophisticated financial techniques added to the uncertainty and the lack of transparency. Which institutions were left holding the toxic assets? This again led to a fatal negative spiral, with a loss of confidence in the individual financial institutions and the entire market. Liquidity in the markets dried up completely, and on a global scale the first real worldwide crisis in the financial system since the Depression of the 1930s became a reality.

2. Stabilisation phase

Massive support by governments and central banks to resolve the crisis

A general characteristic of this crisis was the massive involvement of governments and central banks. With the exception of Iceland, in no country were systemically important financial institutions allowed to fail. This required massive support from governments and central banks. The methods differed – massive capital injections to major banks and investment banks in the US and the UK, extensive guarantees for all banks' debt in other countries – but the objective and purpose was the same: to protect the viability of the financial system. As a consequence, the risk was absorbed (for a time at any rate) by governments, and the markets were swamped with inexpensive central-bank credit. An ironic aspect is that the crisis of 2008 was in particular caused by excess liquidity and cheap credit, but the solution (at least in the short term) seemed to be even more liquidity and even cheaper credit.

This led to a permanent transfer of losses to the public sector

Restoring of financial confidence led to a permanent transfer of losses to the public sector, as the private sector's risk takers were bought out. In more polemical terms: profits from the excesses of the preceding period were privatised, while the losses were socialised. This is hardly a model that is tenable in the long term. Having said that, there was little inclination among political decision-makers to try out the alternatives: allowing the financial system to fail. The real economy is far too dependent on a well-functioning financial system for that to be allowed to happen.

3. Allowing for a “decent” bank crash

Bank failure is a necessary disciplinary factor

If individual banks, and especially the largest of them, cannot be allowed to fail – and the essence of a market economy is that any privately-owned company must be allowed to go bankrupt – there is no fundamental disciplinary factor in the financial system. If there is an implicit government guarantee for the banks, the taxpayer is left with the tail risk. Bank shareholders and depositors are given a free put option by the State. It is vital to financial stability that this put option is priced, and that the banks and their customers and shareholders come to pay for it. Otherwise, we can sit back and wait for the next bubble to burst.

A well-defined “game plan” is required

The key requirement is that there is a complete, well-defined “game plan”. In a banking crisis, time is even more valuable than money. If a financial crisis is looming, the speed at which the authorities intervene is vital. A clear division of means and roles is just as important. To avoid “moral hazard” it is important that shareholders and other liable capital owners are in the front line when the losses are distributed, but also that major holders of senior debt know and accept the risk of a “hair cut”.

4. Sovereigns

The financial crisis increased fears of a sovereign debt crisis

In several countries, the financial crisis led directly to increased fears of a sovereign debt crisis. Examples are Greece, Ireland and Portugal. In Ireland’s case, a very large and inflated banking sector was fully guaranteed by the Republic of Ireland, and the enormous negative equity in the banking system was thereby “nationalised”. In addition, large public-sector deficits cast doubt on the sustainability of government finances. In the affected countries, this was not only due to the financial crisis and the collapse of the banking system. The spotlight was also turned on the general sustainability of government finances in light of demographic developments that would increase, among other things, future pension-system costs and government expenditure on healthcare.

Painful decisions to deal with unsustainable debt levels may have to be made

The crisis of confidence in sovereign debt becomes especially pressing when it becomes clear that the real interest burden on these sovereigns far exceeds the expected future real growth rate. In such a situation, there is the prospect of an untenable debt collapse. This is the mechanism that has been so destructive for a number of euro-area member States during the past year. In this light, it is an open question whether the traditional means of support from the IMF and the core EU member States are anything more than a postponement of some painful decisions. These decisions can involve restructuring of the debt, or debt rescheduling, either full or partial.

II. Future regulation

Reform initiatives to reduce the risk of future financial crises

After the crisis, a large number of global initiatives have been launched to reduce the risk of a future financial crisis and collapse. The purpose is to make the financial system more resilient and to prevent future financial crises from creating strong negative real-economic consequences. The intention has quite simply been to boost confidence in the financial system. The initiatives include

efforts to establish Basel III, Solvency II, the Frank-Dodd financial reforms in the US, and the EU's regulation of the market for derivative financial instruments.

But new regulation also has costs

The major question, however, is whether these initiatives will function as intended. A general aspect of the regulatory adjustments is higher requirements for capital and capital of better quality. This in itself strengthens the institutions affected, but at the heart of the most recent financial crisis was the collapse of “near-bank” institutions. “Shadow banking” becomes even more attractive when the official banks are subject to tighter capital requirements. Much of the regulation that has already taken place, and expected future regulation, is aimed at “near banking”, but regulation is not without its costs. Higher capital requirements, etc. lead to credit contraction, which in itself has negative consequences for the real economy.

III. Institutional investors' contribution to ensuring growth and financial stability

New regulation also concerns institutional investors

The regulation of institutional investing is currently also subject to considerable changes. The overall trend has been to consider the entire financial system as one single entity, and to treat identical activities in a uniform way, independently of the legal packaging. The principle is that, for example, a loan to a company must be subject to the same capital requirements and valuation, regardless of whether the loan is granted by a life insurance company, a bank, or another financial entity. The objective is naturally to prevent regulatory arbitrage.

A mark-to-market requirement is problematic for certain investors

The Solvency II framework, among other things, entails that all assets and liabilities must be marked to market. In many countries it will be a fundamental break with the past if non-commercial entities, such as pension funds and cooperative societies engaged in life insurance, are also to be subject to mark-to-market regimes. In such cases, the institutional investors' capacity for risk will be solely dependent on the ratio of their liabilities to free reserves/equity, possibly supplemented with backing from external sources – for example company sponsors or the labour-market parties.

Solvency II regulation may lead to short-termism

Critics of the Solvency II regulation regarding institutional investors point out that in this sector, too, this regulation will lead to a lower capacity for risk due to the higher capital requirements. It is also feared that strict capital requirements based solely on market values will lead to “short-termism” and “herd behaviour”.

The new regulation could exacerbate market fluctuations

In my view, this criticism is justified in the sense that external events such as stock-market crashes simultaneously reduce reserves and thereby investors' capacity for risk. Everyone therefore seeks to reduce risk at the same time, thereby exacerbating market volatility. On the other hand, precisely this same eventuality will make it extra attractive to hold surplus reserves in order to cope with increased volatility. In the long term, therefore, higher capital requirements are hardly likely to have any negative impact on either capacity for risk or the scale of market fluctuations.

The alternatives do not seem attractive

The alternatives to solvency-based capital requirements (based on market values) do not seem attractive: The use of “smoothing”, for example, will in practice make it impossible to hedge the liabilities that have been exposed to smoothing as a “smoothed” asset cannot be bought in the market at a “smoothed” price. In the same way, using historical prices, for example, for assets and liabilities would muddy the situation. Using another analogy: this is like switching the light off if you don’t like what you see.

Nevertheless, institutional investors can contribute substantially to future growth

However, even in a mark-to-market regime, institutional investors can contribute substantially to future growth. They can so because, in contrast to banks, they are rarely exposed to the risk of a “run” on the institution. This makes it possible for institutional investors to invest in illiquid assets with a long horizon. As providers of long-term savings, these investors can therefore make a key contribution to restructuring and developing our society – nationally and globally – by investing in sectors with high long-term returns.

Pension systems are weaker today

The fact that pension systems today appear to have weakened globally compared to the 1990s, and are therefore less able to be suppliers of long-term venture capital, is only in small measure due to new regulation. The weakening of pension systems is more due to the fact that, historically, very generous pension commitments have not been supported adequately enough by pension contributions. An increase in life expectancy augments the pressure on pension systems, regardless of whether they are private-sector or public-sector schemes.

Pension risks have been shifted onto individuals

In many countries, the pressure on pension systems has led to the closure of defined-benefit schemes in both the public and private sectors. Instead, the workforce has been offered regular savings schemes, often as fully individualised plans. In general terms, there has been a shift from lifelong pension products to regular savings accounts. This entails the individualisation of both investment and life-expectancy risk. Based on fundamental welfare considerations, the expediency of this can be questioned; in addition, the individualisation of investment decisions weakens pension savings’ ability to support and finance long-term investment in growth and employment.

IV. Corporate governance and stewardship

Atomistic ownership tends to foster short-term and unengaged investors and excessive risk-taking by management

Institutional investors typically invest on behalf of current and future pensioners. They thus hold “fiduciary responsibilities”. For a minority shareholder, acting as a good owner – *i.e.* engaging in overall discussion of appropriate strategies with the company’s top management and influencing the composition of top management – is a “public good”. The individual minority shareholder cannot internalise the possible benefits, as these are enjoyed by all shareholders, while the minority shareholder itself bears all the costs of an activist corporate governance policy. Atomistic ownership of large stock-exchange-listed companies therefore entails the considerable risk that investors will act as short-term, unengaged investors rather than as owners. One consequence can be that large companies without a dominant owner to promote good corporate governance on behalf of all shareholders will in real terms be taken over by managements that act solely in their own interest. This leads to an overwhelming risk of “moral hazard”, whereby top management, via opulent

bonus and remuneration plans, rewards excessive risk-taking and takes over an increasing share of the company's profits.

*Therefore,
transparent bonus
and remuneration
plans are very
important*

In this light, a number of political initiatives at the global level must be welcomed. In addition to higher equity requirements, the requirement for transparent bonus and remuneration plans and prior approval of these plans at the companies' annual shareholder meetings are perhaps the most important initiatives to prevent future systemic financial crises. There is little doubt that excessive risk-taking in the financial sector in the years up to the crisis – in addition to the macroeconomic pro-cyclical excesses – also originated from a failure of governance. In reality, this led to the privatisation of the profits of a small group of players – and the socialisation of the subsequent massive losses. Today, many countries are still struggling with the consequences.

Fostering Long-term Investment and Economic Growth: A Long-term Investor's View

by

Olivier Mareuse*

Active long-term investors are needed for well-functioning financial markets. Long-term investors are also essential for economic growth, as they finance infrastructure and are more likely to become engaged as active shareholders. Since long-term investments are likely to provide higher returns for pensions and long-term savings, they should be able to attract capital from pensions and other long-term savings funds, which are ample due to high savings rates in Europe. But long-term investment should also be encouraged via the regulatory framework and through fiscal incentives. Furthermore, the development of innovative financial instruments will be necessary to foster long-term investment. Finally, co-operation among long-term investors should also help to develop a new “investment culture”.

JEL Classification: E2, E6, G1, G2, G3, H44, H54, H81.

Keywords: Long-term investment and savings, financial regulation, project bonds, fiscal incentives, Long-term Investor's Club

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I. The equilibrium of financial markets requires active, long-term investors

Long-term investment through well-functioning financial markets

As CFO of the Caisse des Dépôts¹ (after being CIO of CNP Assurances²), I do obviously believe in the specific and macroeconomic advantages of long-term investment.

Long-term investment should not be opposed; rather, it should be seen as contributing to the smooth functioning of financial markets. The excessive volatility we have seen in the markets – and in some circumstances, the lack of liquidity – are largely due to the short-term, herd-like behaviour of most investors. Well-functioning financial markets need investors with different views about the actual value of the assets being traded, which requires, to a large extent, that investors also have *different time horizons*. Investors with a long-term horizon consider the intrinsic value of assets, rather than next weeks' market tendency, and are the most likely to act in a counter cyclical way. Therefore, financial markets, often described as short-term oriented, also need long-term investors to be able to arrive at the most appropriate pricing for listed assets.

Up until a few years ago, for instance, when a sharp decrease in equity markets occurred, it was commonly acknowledged that insurance companies would likely step in to buy equities and keep them on their balance sheets, with a view toward long-term returns. Unfortunately, this is no longer the case.

II. Long-term investments are essential for economic growth

1. Long-term investment is needed to finance infrastructure projects

Europe's infrastructure financing needs are substantial

To address such global issues as climate change, the scarcity of resources, urbanisation and demographic growth, there will be a huge need for long-term investment. For example, Europe's infrastructure financing needs for transport, energy and the fight against climate change are estimated to be more than EUR 2 000 billion by 2020.

2. Long-term investors are more likely to be responsible investors

Focus should be on sustainable, long-term growth

Only long-term shareholders are likely to become active shareholders, establishing an ongoing dialogue with the management of the listed companies and promoting best practices in terms of governance, environment, and human resources. In general, long-term shareholders tend to focus on sustainable growth rather than on boosting the share price through financial leverage.

3. Long-term investments are likely to provide higher returns for pensions and long-term savings

High real returns from long-term investing

Interest rates are low in real terms, and inflationary pressures are building up in many areas. At the same time, aging populations in Europe and many other developed economies mean that a higher percentage of the population will be

relying on retirement income and savings. Substantial returns for long-term savings and for pension schemes will therefore be required, and this presupposes investment in riskier assets with good long-term prospects.

III. Long-term savings and resources are relatively abundant in Europe

Savings rates in Europe are high

In general, Europe has relatively high saving rates. In France, for example, the saving rate is 16% of net available income. The main savings vehicle is life insurance policies (EUR 1400 bn), whose average maturity is 10 to 12 years. Even when policyholders have early redemption options, stability prevails and redemption rates tend to be low. The pension fund industry, another source of long-term savings, has even longer investment horizons. France also has specific long-term investors like the *Caisse des Dépôts*, which manages public savings deposits (“*Livret A*”); and legal deposits (private funds protected by law). The role of the financial institutions that gather and manage these various types of savings should be to invest long.

But various constraints decrease investors' capacity for long-term investing

However, according to a recent report (by Oliver Wyman) presented at the Davos Forum, the capacity of major investors to use their assets for long-term investing is dramatically decreasing. In 2009, long-term institutional investors controlled close to half of the world's professionally managed assets – around USD 27 trillion, out of USD 65 trillion. Various constraints on these investors have resulted in them dedicating only 25% of their total assets – USD 6.5 trillion – to long-term investing.

IV. The regulatory framework should specifically address long-term investment

Mark-to-market accounting and prudential rules reduce investors' ability to acquire long-term assets

A combination of mark-to-market accounting and prudential rules which are based on mark-to-market valuations (Solvency II), reduces the ability of investors to endure market volatility, something that is required if they are to invest in assets for the long term. In addition, current rules and regulations imply pro-cyclical behaviour: in periods of market stress, when asset prices are falling, the easiest way for investors to maintain or restore solvency ratios is to sell assets considered risky, often ones with long investment horizons.

The accounting and prudential framework should take into account the particular characteristics of long-term investments; this is already the case when it comes to long-dated government bonds, which benefit from “hold to maturity” accounting and very low capital requirements. Such specific treatment should also apply to investors with stable, long-term liabilities seeking to invest in high-quality infrastructure projects or equities.

V. It is also necessary to develop innovative financial instruments

The launching of project bonds

The issuance of **project bonds** is an example of a specific new financial instrument that would enable markets to play their role more effectively. Since the financial crisis, bank loans have generally become shorter in duration, and the financing of infrastructure projects has become more difficult. Through project bonds, the EU Commission would provide EU support to companies that are

issuing bonds to finance major long-term infrastructure projects. The Commission's key role would be to share risk with the EIB and other financial partners, such as long-term investors, by providing guarantees or loans in support of such bonds. Project bonds would require a specific European guarantee, however, to incentivise long-term investors to commit capital.

Adoption of fiscal incentives

Also needed are **fiscal incentives** to attract domestic and foreign savings. Significant tax incentives would help to attract capital that is currently in domestic and foreign, especially emerging, economies' savings funds to long-term financial instruments. In this context, the US "Build America Bonds" initiative is instructive, with strong fiscal incentives for attracting domestic and foreign savings for the financing of infrastructure, energy, as well as social and urban initiatives.

Equalising the fiscal incentives for issuing debt versus equity may be an approach that Europe can take on as well. Indeed, most tax systems favour debt financing over equity, since interest is deductible against corporate profits, but dividends are taxed. As a consequence, this lowers the after-tax cost of debt-financing compared with equity-financing.

VI. Concluding remark: co-operation among long-term investors is key

Investors should share their experiences

Cooperation among the different categories of long-term investors should be encouraged; investors must communicate with each other, understand their similarities, learn from their respective experiences and work towards stronger partnerships.

Cooperation is the aim of the Long-Term Investors' Club

Cooperation is the aim of the Long-Term Investors' Club set up in 2009 by KfW, *Cassa Depositi e Prestiti* and EIB. This Club now comprises 1,424 financial institutions representing the world's most important economic regions, with a balance sheet of USD 3 trillion. The Long-Term Investors' Club allowed the implementation of partnerships in long-term investment projects, such as the Marguerite and the InfraMed Funds dedicated to infrastructure development in the EU and in the Mediterranean Basin. The Club will shortly be expanding to include other leading emerging countries, such as India and Brazil. Cooperation between the Long-Term Investors' Club and the OECD is crucial for a better understanding of the needs of long-term investors and the development of a new "investment culture".

Notes

1. *Caisse des Dépôts* is a state-owned financial institution in France, which manages savings and legal deposits and has a total balance sheet of 270 bn.
2. *CNP Assurances* is the leading life insurance company in France, with 250 bn under management.

The Contribution of the Asset Management Industry to Long-term Growth

by

Gian Luigi Costanzo*

The global asset management industry was severely hit by the worldwide financial crisis, but has recovered well from the crisis. The resiliency of the asset management industry can be explained by a more diversified industry and investors turning to greater diversification in asset classes. The asset management industry is a vital source of economic growth as intermediary in the savings-investment channel. The industry is also one of the most important providers of liquidity needed to ensure smooth functioning of capital markets and provides the means for its clients to diversify their portfolios and achieve their investment goals. Asset managers should act as the 'stewards' of their clients' interest. But less 'sticky' liabilities tend to create short-termism of asset managers. A sound governance framework, more transparency, better communication with clients and better management of their expectations may be needed to overcome this problem. But clients themselves, at the institutional as well as retail level, will also have to adopt a more long-term view to appropriately evaluate the risk and returns of their portfolios. Vehicles for long-term retail investment need to be developed and support by fiscal and other incentives may be considered.

JEL Classification: G1, G11, G2, G3.

Keywords: asset management, mutual funds, money market funds, retirement saving, long-term investment.

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I. Developments in the global asset management industry

The global asset management industry was severely hit by the worldwide financial crisis

The global asset management industry was severely hit by the worldwide financial crisis in 2008, with all regions suffering a severe contraction in assets. According to EFAMA, the value of assets professionally managed in Europe suffered a fall of 21%, from EUR 13.6 trillion at end 2007 to EUR 10.8 trillion at end 2008. Thanks to the stock market rally and the recovery of net inflows into UCITS, the value of assets under management (AuM) bounced back in 2009 to an estimated EUR 12.8 trillion at end 2009.

In relation to GDP, total AuM in Europe is estimated to have reached 100% at end 2009 from 80% at end 2008. This percentage is an average hiding a wide dispersion of situations across Europe: the AuM/GDP ratio was well above the European average in three countries: UK (209%), Belgium (136%) and France (131%), where clearly asset management plays a relatively more relevant role in matching the needs of savers and investors, both in the domestic market and capturing the international flows of capital.

2010 has been a good year for fund and asset managers

2010 has been a good year for fund and asset managers. In 2010 the European investment fund industry bounced back to the asset level reached before the global financial crisis. The recovery benefited all categories of long-term funds, notwithstanding the unprecedented crisis that hit the euro area.

Investors are turning to greater diversification in asset classes to protect their portfolios from market movements and generate higher returns

The resiliency of the asset management industry can be explained by the wide range of funds following different types of investment strategies on offer: investors can shift their portfolio between fund categories according to changes in the global economic outlook and the perceived investment risks. For example, the sustained sovereign debt crisis in the euro area led to outflows from government bond funds in December, whereas corporate bond and equity funds benefited from an encouraging economic outlook for 2011. Investors are turning to greater diversification in asset classes to protect their portfolios from market movements and generate higher returns. The investable universe that once centred around two asset classes – equities and bonds – has been expanded to include new strategies and asset classes, including real estate, hedge funds, private equity, currencies, commodities, natural resources, infrastructure, and even intangibles (e.g., intellectual property rights). The only period when diversification has not helped was in the aftermath of the Lehman crisis, when correlation amongst most asset classes shot up and most investment strategies could not protect investors from suffering heavy losses. In this context, such concepts as the core-satellite approach and benchmarking lost relevance.

With asset allocation re-established as the most important factor explaining returns, asset allocation products have shown strong growth. Investment products with an element of active asset allocation are now being engineered both for defined-contribution plan members and for retail investors. Lifestyle funds are one example. Finally, an increasingly large number of new UCITS funds are adopting “absolute return” strategies quite similar to those applied by the hedge funds: although these so called NEWCITS funds have not yet been thoroughly tested during a severe downturn – and concerns have been raised about their massive use of swaps, derivatives and leverage as well as of “custom-

made” eligible assets – they are attracting interest both from institutional investors and from high net worth individuals.

Box 1. Investment funds: selected developments

Investment Funds assets growth and net sales in 2010 – key data:

- **Increase in investment fund assets:** investment fund assets in Europe increased by 13.7 per cent in 2010, from EUR 7 061 billion at end-2009 to EUR 8 025 billion at end-2010.
- **Sustained demand for both UCITS and non-UCITS:** UCITS registered net inflows of EUR 166 billion in 2010, compared to EUR 150 billion in 2009. This result was achieved despite outflows of EUR 126 billion from money market funds.
- **Strong shift towards long-term UCITS:** total net sales of long-term UCITS (UCITS excluding money market funds) reached EUR 292 billion in 2010, compared to about EUR 195 billion in 2009.

Confirming Investment Funds strong growth over the last decade:

- UCITS and non-UCITS assets at end 2000 stood at EUR 4 560 billion. Total assets reached EUR 8 200 billion at their peak at end June 2007 before the financial crisis started to unfold. The value of investment fund assets tumbled to almost EUR 6 trillion in early 2009, before recovering to EUR 8 025 billion at end 2010.

II. Developments in the European asset management industry

Investment funds represent approximately 50% of total AuM at end 2008

Looking again at the European asset management industry as a whole, investment funds represent approximately 50% of total AuM at end-2008, whereas discretionary mandates account for the remaining half. Typically, asset managers receive mandates from institutional investors and high-net-worth individuals, whereas investment funds serve both the retail and institutional markets.

Institutional clients represent the dominant segment of the European asset management industry

Institutional clients represent the dominant segment of the European asset management industry, accounting for around two thirds of total AuM in Europe. They dominate the asset management landscape in the UK, France, Germany, Portugal, Hungary and the Netherlands, reflecting the ability of these countries to attract institutional mandates from two key institutional client categories, insurance companies and pension funds. Although these investors continue to manage part of their assets in-house, increasingly many of them rely on the expertise of third-party asset managers. In addition, asset managers serve other institutional clients by managing financial reserves held by non-financial companies, banks, government, local authorities, endowments and others. Many of these clients invest through a combination of investment funds and discretionary mandates.

Many institutional clients provide intermediary services for households

It is also important to note that many of the institutional clients of the industry provide intermediary services for households. For example, apart from direct investment by households in asset management products, households also account for a significant share of the institutional client segments through their ownership of unit linked products offered by insurance companies, or defined

contribution schemes offered by pension funds and others. Moreover, retail investors increasingly access investment funds through platforms, funds of funds and similar approaches that are considered as institutional business. This is an important reason why institutional investors represent the largest client category of the European asset management industry.

The border between different asset management product types is blurred

Finally, the border between different asset management product types is blurred. Apart from the frequent allocation of discretionary mandates to investment funds, certain investment funds display similar characteristics as discretionary mandates (for instance, *Spezialfonds* in Germany). In France, the large degree of institutional clients is partly due to the popularity of unit-linked and other wrapper products containing asset management solutions offered to retail clients via intermediaries, as well as the important role played by money market funds in cash management of many French corporations.

Vice versa, discretionary mandates may also be retail oriented (like for instance in Italy) and mimic the investment strategies and structures of investment funds. Thus, product types with similar properties may be categorized differently, although differing primarily in terms of the wrapper used for their distribution.

In order to create a level playing field, the same distribution standards should apply across all retail investment product categories

Different investment product categories, *i.e.* different “wrappers”, might have to submit to different transparency and selling rules. The resulting distorted competition hampers investors’ ability to compare alternative investment options and weakens their position with both distributors and product providers. In order to create a level playing field, the same distribution standards, including in particular transparency rules for the products and appropriateness rules for the clients, should apply across all retail investment product categories. In this context we should support the EU initiative on Packaged Retail Investment Products (PRIP). PRIP’s objective is “to introduce a horizontal approach that will provide a coherent basis for the regulation of mandatory disclosures and selling practices at European level, irrespective of how the product is packaged or sold”.

In order to establish an effective level playing field, the scope of PRIP should be extended to capture the full universe of substitute investment products. This could eliminate existing inequalities and thus improve comparability across product categories.

III. Asset management to foster economic growth

Asset management is a vital source of economic growth

Asset management is a vital source of economic growth. It provides a link between investors seeking appropriate savings vehicles and the financing needs of the real economy.

...and offers a crucial contribution to the European economy

Asset management offers a crucial contribution to the European economy: total investment fund assets represented 66% of the European Union’s GDP at end-2010 whereas total assets professionally managed amount to more than 100% of EU GDP. This confirms the important contribution of investment funds to the European economy, as financial vehicles raising capital from retail and

institutional investors, and providing funding to other sectors (monetary financial institutions, non-financial corporations and government agencies).

The European asset management industry fulfils three essential functions for the European economy

The European asset management industry fulfils three essential functions for the European economy:

Firstly, it channels capital from where it is in surplus to where it is in short supply. By providing equity capital in both primary (IPOs and private placements) and secondary markets, as well as credit to corporations and financial institutions – directly via corporate bonds or indirectly via money markets – and finally by helping fund government deficits, asset managers are fuelling the real economy and represent an essential link in the financial market chain.

Secondly, the industry is one of the most important providers of the liquidity needed to ensure soundly functioning capital markets.

Thirdly, it gives its clients access to a range of instruments and markets to diversify their portfolios and achieve their investment goals.

In properly pursuing their mandate, asset managers should stimulate overall economic development by continuously monitoring developments in industries, countries and regions; by identifying companies with the best prospects of successfully implementing novel innovations, processes and strategies; and by allocating financial resources to those most promising. Responsible ownership in equity (and possibly also corporate bond) investment is increasingly becoming part of the fiduciary duty of asset managers, consultants, trustees and asset owners, even though there is still a lot of room for improvement in this area.

Asset managers should act as the “stewards” of their clients’ interest

Asset managers should act as the “stewards” of their clients’ interest. Their value proposition must be to enable their clients to reach their investment objectives and to increase their financial prosperity. The property of the assets remains with the client, i.e. they are not on the balance sheet of the asset managers. The asset managers are, however, in charge of the assets managed and accountable to the clients for those assets. Still, the asset managers act in an “agency” capacity to manage assets at the request of the “principal”, i.e. the client, in accordance with the terms of the agency agreement. Therefore it is very important that the terms of the agency agreement are properly specified and targeted to achieve the asset owners’ objectives, which is often quite difficult for institutional investors and even more so where retail investors are involved.

Less ‘sticky’ liabilities might lead to excessive short-termism of asset managers

In particular, as opposed to pension or life insurance funds, mutual funds’ liabilities (and, more in general, liabilities of asset managers) are less “sticky”, i.e. clients can withdraw their money on (almost) daily notice. This might lead to excessive “short termism” from asset managers as well as “herd” behavior, following the well known statement that “it is better to be wrong with the crowd than to take the risk of being right with a happy few”. In order to be able to face volatile flows of capital into and out of their funds, often due to short term over- or underperformance of a given benchmark, asset managers need to keep a close eye on “liquidity” of their investments, thus foregoing opportunities that might arise in less liquid – but potentially more profitable – areas of the market.

Fund managers depend on the quality of advice to end investors

Finally we should not overlook the role and relevance of the distribution channels linking asset managers to final retail clients: when dealing – directly or indirectly – with retail clients, fund managers are always dependent on the quality and independence of advice given to the end investor at the point of sales by distributors.

IV. Challenges facing the European mutual fund market

Industry shortcomings are increasingly being voiced

The asset management industry has seen tremendous growth over the past ten years. However, the sustainability of this success is under question and industry shortcomings are increasingly being voiced by regulators, investors and even the industry players themselves.

Spillover effect from the crisis

Surveys among investors have shown that the asset management industry has become increasingly distant from the consumers of its products over the past few years. Even though asset managers were not at the center of recent turmoil, did not take extravagant bonuses, and on the whole, did not blow up, there has been a tremendous spillover effect from other areas of the financial sector more negatively affected by the crisis.

Regaining investors' trust by more transparency, more communication and better management of expectations

After the market crash of 2008, the biggest challenge confronting everyone in the asset management industry is to regain the trust of the investor. This effort will require more transparency, more communication with investors (especially about risk), and better management of expectations than is currently done by the asset management industry. Asset managers will have to redefine their offering, aligning promises with their ability to deliver. They will likely play a bigger role in asset allocation – advising institutional investors and engineering products for retail investors – and in risk and liquidity management. But it is clear that also asset owners – institutional and retail, the latter through the distribution networks that service them – will have to adopt a more long-term view, to appropriately measure the returns of their portfolios, but also the associated risks, and thus properly evaluate the value added by their asset managers.

Well-educated investors need sound governance framework

In order to ensure the sustainability of the industry's value proposition, we need well-educated investors who receive appropriate advice, with access to an industry with a sound governance framework and which provides them the right product at the right price and with the right level of transparency.

V. Difficult time for money market funds

In 2010 investors shifted away assets from money market funds

Very low short-term interest rates, competition from banks seeking to strengthen their balance sheets by increasing the share of the deposits and encouraging economic outlook convinced investors in 2010 to shift assets away from money market funds.

Money market funds are vital for capital markets

Money market funds came to life in the 1970s, as banks were forbidden to reflect the high inflation rates of the time in what they paid depositors. They have since become an important part of the “shadow” banking system, being vital for the smooth functioning of capital markets, as they are the repository for

a lot of the short-term paper issued by corporations and, even more, by other financial institutions. On the other hand, investors and corporations are sitting on a lot of cash, and still value money market funds for their stability, diversity of counterparties, credit analysis and liquidity, while the yield is often considered less important.

Perceived need to regulate these shadow banks

Though regulators' actions in the US and Europe have made matters clearer and safer for investors, the risks have not gone away, especially for money market funds that do not mark to market their assets on a daily basis. The highly respected Lex column of the Financial Times has suggested that these money market funds are "too big to fail" and that, if anything threatens them, the Government will have to step in. Its conclusion was that these shadow banks need to be regulated just as tightly as banks are.

Though regulation has reduced some risks, but others have increased

Though regulation has reduced some risks, other risks have increased in their place. Corporations are less inclined to issue the very short-term commercial paper that the funds need and their place has been taken by much more volatile short term bank debt. With fewer issuers, the money market funds are over-exposed to some counterparties, with financial institutions high among the list. Also, the money market funds industry has become more concentrated, with the top ten funds commanding 75% of the total in the US. The rating agency Moody's feels that the parent companies of these funds are much less likely to come to their rescue in a future crisis. Furthermore, in an attempt to pay their way, some money market funds are taking on more risk by moving their investments from Treasury paper to debt issued by corporations, by banks and even by less creditworthy sovereign issuers.

The probability of a run might have become smaller, but it has not disappeared, and the systemic danger to the financial system is still around.

VI. The need to manage retirement provisions

Ageing and increased longevity are posing problems for pay-as-you-go pension schemes

The greying of Europe, coupled with the increased longevity of the population, is posing a problem to pay-as-you-go pension schemes. Today the State pension of one retiree is paid for with the taxes of four workers. By 2050 a retiree will be supported by just two workers. The situation is even worse since State coffers have been raided by bank bail outs and people are living on pensions for considerably longer than when the state pension scheme was first thought up.

European governments are reacting to this issue by shifting the responsibility of retirement planning to the working-age individual.

Retirement saving products must allow for steady income flow after the accumulation phase and safeguard against

This, however, creates a new challenge for the person who now has to make investment decisions for his/her own long-term financial well-being. These decisions need to take into account the savings required to meet the longer period of retirement due to the increase in life expectancy, as well as consider the risk of investment and inflation. Therefore the ability of asset managers to better manage risk and offer some degree of downside protection is becoming increasingly important to individual investors: products must be designed, not

investment risk

only to save for retirement, but also to allow for steady income flow after the accumulation phase and safeguard the investor against the risk of having insufficient cash flows in old age.

The retirement wave is fuelling demand for investment products that offer yield and protection against various risks

The need to shift the offering from investment products for accumulating wealth to products that offer yield and protection against various risks has been identified as a major trend also in the United States, where an estimated 77 million Baby Boomers will be retiring shortly. Using data from the U.S. Census Bureau and a 2004 survey of consumer finances, McKinsey & Company (2006) forecasted that by 2010 almost two-thirds of all investable assets held by U.S. investors would be controlled by retirees or near-retirees. According to McKinsey, its affluent consumer survey showed that the retirement wave is fueling demand for investment products that mitigate various risks: as asset managers move from offering products to offering solutions, they will become more knowledgeable about these risks and will work to improve their risk management systems.

In countries with funded pensions, pension funds assets constitute a substantial source of institutional money

In Europe the importance of pension fund assets varies across countries. Whereas they account for less than 10% of total institutional AuM in France and Italy, they represent the largest type of institutional mandates in the UK and Hungary. These differences are largely determined by the nature of the state pension system. In countries with tradition of relying on funded pensions, pension funds assets have accumulated over time to form a substantial source of institutional money. By way of illustration, pension fund assets as a share of GDP totaled 79% in the UK in 2007, compared to 1% in France, 3% in Italy and 5% in Germany.

VII. Investing for the long term

Investors can hardly differentiate between funds that are suitable for the long-term or those that have a short-term investment approach

Investment funds were originally designed to target long-term investors, but along with the increasing sophistication of the market, various investment fund strategies have evolved that pursue not only long-term, but also short-term trading strategies. Nevertheless most funds are still communicated and labelled as being suitable for all investors, ranging from the man in the street to high net worth or to institutional, including asset allocators. Investors can hardly differentiate between funds that are suitable for the long-term or those that have a short-term investment approach. The importance of aligning investor interests, not only as to asset allocation but also to his/her objectives and time horizon, has become evident during the recent crisis; during which the short-term liquidity needs of certain investors conflicted with the long-term investment horizon of others resulting in some significant issues for certain funds. Volatility in asset flows (e.g., the difference between gross and net sales, or shifts from asset management products to bank deposits) has reached a level during the crisis that is fundamentally at odds with the long-term nature of most asset management products. This has meant that many investors have withdrawn assets prematurely, thus cementing losses and missing the benefits of subsequent recoveries as well as forcing sales of the funds' assets at distressed prices, to the detriment of long term fund holders. This raises questions as to whether the forces at work that drive individuals' investment decisions are optimally structured and regulated. It also poses a challenge for asset managers because, rather than being able to manage a steady long term asset base, they need to

additionally cope with sometimes extreme volatility of flows and are therefore forced to keep unnecessarily high levels of cash and invest only in the most liquid asset classes.

The goal should be to manage an objective not a strategy or a single asset class

The crisis has also demonstrated that funds that are restricted by their investment strategies to have a minimum or maximum allocation within an asset class are robbed of the ability to act more flexibly, especially in times of crisis when rigid strategies can be disadvantageous for the investor and active asset allocation can play a key role in generating returns for institutional and individual investors alike. A fund's goal should be to manage an objective not a strategy or a single asset class.

Long-term vehicles should be developed to meet the investor's financial objectives

Long-term vehicles should be developed to meet the investor's financial objectives rather than to adhere to a fixed strategy such as a fund limited to a country or industry. The fund industry, when servicing long-term financial needs especially in the space of retirement planning, should shift focus from benchmarks to investors' time and risk objectives in constructing retirement eligible products. Such vehicles could be used either as building-blocks or have built-in solutions (like lifestyle profiles) for investors looking to plan for their old-age financial security.

Vehicles designed for the long-term should offer liquidity designed with the long-term investor in mind

For vehicles categorised as long-term, the need for daily liquidity, as provided for within the major UCITS, is not required and represents a significant additional cost – and arguably a risk – for investors holding for the long-term. Vehicles designed for the long-term should not only be permitted, but should be required to offer liquidity designed with the long-term investor in mind. This could be accomplished through various measures such as managed redemption programs, swing price mechanisms or limitation of redemption possibilities over certain time periods. The current blurring within the UCITS world of vehicles accommodating short and long-term needs should be eliminated or at least managed for the benefit of the long-term investor.

Disclosure should be designed for the long-term investor

Transparency within the UCITS world remains extremely high in comparison with other vehicles on offer. Vehicles classed as long-term must all have the equivalent levels of disclosure but the type of disclosure should be designed for the long-term investor. For example, daily price publication or monthly fact sheets with benchmark performance indicators are arguably less relevant for products with a specific end objective rather than periodic (say quarterly) reporting on the performance vs. objective, together with any changes in the underlying risk features of the product.

Need to align investor and asset manager interests by proper incentives

Finally, there is a need to align investor and asset manager interests: in order to align the interests of asset managers and investors the industry must be properly incentivised to deliver retirement products of quality. Incentives for retirement savings products should be linked to the risk-return objectives within the investor timeframe ("objective fees"). If providers are able to construct such fee schemes linked to the achievement of the objectives rather than simply the managing of assets, then we could arrive at a remuneration model that is both in the interests of investors and providers alike.

Market for long-term funds is missing

The implication of all this is that there is a large missing market in the funds space in Europe: the market for funds that are designed for long-term investors and are managed, measured and regulated in such a way that encourages them to maximise long-term absolute returns.

Managers will be judged on longer and more appropriate holding periods

The managers of these “long term” funds will adopt longer term investment policies, trusting that they will be judged on longer and more appropriate holding periods and, not being exposed to excessive out- or inflows, will exploit all the opportunities in the capital market, also those with lower liquidity and longer payoffs. Moreover, they will be more inclined to actively engage with the companies they invest in and assess also the long term risks (environmental, social, etc.) of their investments.

Benefits might justify special fiscal treatment

The benefits of these “long-term” funds, both for investors and for the financing of the economy, might justify special fiscal treatment, with tax benefits for the unit holder increasing the longer the holding period (not just in one fund, since this might reduce competition amongst asset managers, but taking into consideration the holding period in the specific family of products, aimed at long-term investment).

VIII. Conclusions

To summarise and conclude, three challenges should be borne in mind:

- First, **short-termism**, especially in behaviour and regulation, is a major threat to sound practice, value added and stability overall.
- Second, strengthen the **duty to act in the best interest of the client**, both at the production and at the distribution level, in order to re-build investor trust in the wider financial services sector and especially in the asset management industry.
- Third, improve on the one hand the **quality and transparency of the AM products** and on the other the **financial capabilities of advisors and investors** so as to achieve the proper match between investors’ needs/objectives/investment horizons and the fund’s investment strategy and expected risk-adjusted results.

Infrastructure Needs and Pension Investments: Creating the Perfect Match

by

Frederic Ottesen*

The life insurance and pensions sector manages large funds with a truly long time horizon. These investors therefore naturally seek long-dated assets to match their liabilities. Real assets or real cash flows are preferred in order to hedge against inflation, which is particularly relevant for pension funds in order to assure a decent purchasing power for their clients' retirement income. Many countries have the daunting tasks of refurbishing and expanding infrastructure, maintaining and expanding public real estate – and doing this in an environmentally friendly manner. Well-conceived infrastructure investments promote productivity and efficiency in both the public and private sector and foster economic – potentially also “green” – growth. Large amounts of capital are needed. Many nations cannot tap the private capital markets as easily as before. Infrastructure investments could be the “perfect match” for a portion of pension savings. Therefore, the link between the capital at hand and its accessibility for infrastructure investments needs to be improved, via regulation, co-operation and communication that foster public-private partnerships, as well as government leadership.

JEL Classification: G11, G18, G22, G23, G3, H54.

Keywords: infrastructure investment, long-term investment and saving, pension funds, institutional investors.

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Frederic Ottesen is Senior Vice President, IAM, Storebrand Asset Management. This article is based on a keynote speech delivered by the author at the OECD High-Level Financial Roundtable on Fostering Long-Term Investment and Economic Growth on 7 April 2011. This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein are those of the author and do not necessarily reflect the official views of the Organisation or of the governments of its member countries. The author would like to thank Per Sandberg of Accenture Norway for helping make this publication possible.

I. Introduction

Tapping pension funds for long-term infrastructure investments

A vast amount of new infrastructure must be built, rebuilt, and retrofitted over the next four decades. Tapping into the investment potential of pension funds would help provide the needed capital, and the long investment horizon should suit pension funds well.

First, infrastructure investment is needed because the global population is expected to rise to around 9 billion by 2050, and almost all of this population increase will be in the cities of the developing world. Many of these cities contain vast slums and shantytowns of self-built homes; they have never been “modernised” in terms of transport, energy, water and communications systems. Many of their people are very vulnerable to the weather disasters that are expected to accompany a changing climate.

Second, most developed and developing countries have not kept up with infrastructure maintenance over the past few decades, and much stock is deteriorating. For example, a 2009 report by the American Society of Civil Engineers gave US infrastructure a failing grade and estimated \$2.2 trillion would need to be spent over the next five years to bring it up to an acceptable level.¹

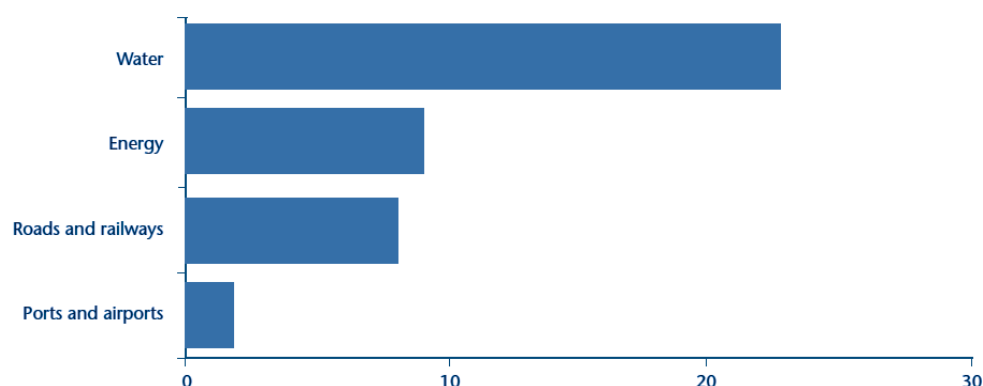
New technology will be required

Third, much new technology requires new infrastructure, and current societal challenges require much new technology. For instance, mitigating climate change calls for low-carbon or no-carbon energy and transport systems. Yet scientists warn that global society has already committed itself to major climate change and the sea-level rise and increased weather disasters associated with it. Thus, much infrastructure will need to be moved or strengthened. Water systems must be rebuilt and/or moved as water availability changes.

As Figure 1 suggests, at least USD 40 trillion will be needed for infrastructure investments globally in the coming 20 years for urban infrastructure alone.

Figure 1. Significant infrastructure investment needs

Investment requirements for urban infrastructure to 2030, in USD trillion



Source: Booz Allen Hamilton, *Strategy & Business*, no. 46, 2007 (from Booz Allen Hamilton, Global Infrastructure Partners, World Energy Outlook, OECD, Boeing, Drewry Shipping Consultants, U.S. Department of Transportation).

II. The perfect match

Tremendous business opportunity in the move toward a more sustainable world

It is widely agreed that the bulk of the investment to be made in buildings and physical infrastructure over the next 40 years will come from the private sector. A 2010 report by the World Business Council for Sustainable Development (WBCSD) found tremendous business opportunity in the move toward a more sustainable world, if business can get away from present business-as-usual approaches “and do what business does best: innovate, adapt, collaborate and execute,” including new types of collaborations with government.²

Call for new government/business collaborations

Given that USD 40 trillion does not seem a business-as-usual sort of figure, this paper suggests some innovations; it also calls for new government/business collaborations that foster the financing of new investment with monies held by the life insurance and pension sector.

Investment horizon of life insurance and pensions sector matches the infrastructure timescale

The life insurance and pension sector manages trillions of euros, dollars, pounds, etc. with the sort of long time horizon that suites the timescale required for steadily rebuilding infrastructure. After 10, 20 or even 50 years, the majority of pension and life-insurance funds are to be distributed as retirement income to the elderly. For a significant part of these funds, this sector naturally seeks long-dated assets to match its liabilities. These should be income-generating assets where the revenue stream is generated over a long period of time, as can be the case with infrastructure.

It would seem logical that the pension industry should – and sometimes it does – prefer real assets or real cash flows in order to assure a decent purchasing power for the millions of people who will have to rely on pensions sourced from it for a significant part of their retirement income. The industry does prefer a controlled-risk profile so that it, and those depending on it for their future wellbeing, can be assured that sufficient money will be available when the pensions are to be distributed.

Governments, on the other hand, have much more complex and diverse challenges to manage, including the daunting task of refurbishing and expanding infrastructure, and maintaining and expanding the public real estate, all done in an environmentally and socially responsible manner.

Infrastructure investments can promote economic growth, but capital is scarce

Properly done, infrastructure investments promote productivity and efficiency in both the public and private sectors and foster economic growth, while managing various environmental challenges. Trillions of any currency are needed; capital is scarce, and not all nations can tap the financial markets as easily as before the recent recession. However, the economic life of much of this infrastructure is usually on the order of several decades. Much of it generates a fairly stable, often inflation-linked income.

Infrastructure investments can be a perfect match for pension savings

Thus in theory, infrastructure investments are the perfect match to pension savings. However, in practice, the links between pension savings and such investments remain fragile and under-developed, and may even be moving in the wrong direction. This paper examines ways these links can be improved, but first it takes a look at the realities of the life insurance and pensions industry.

III. The life and pensions sector

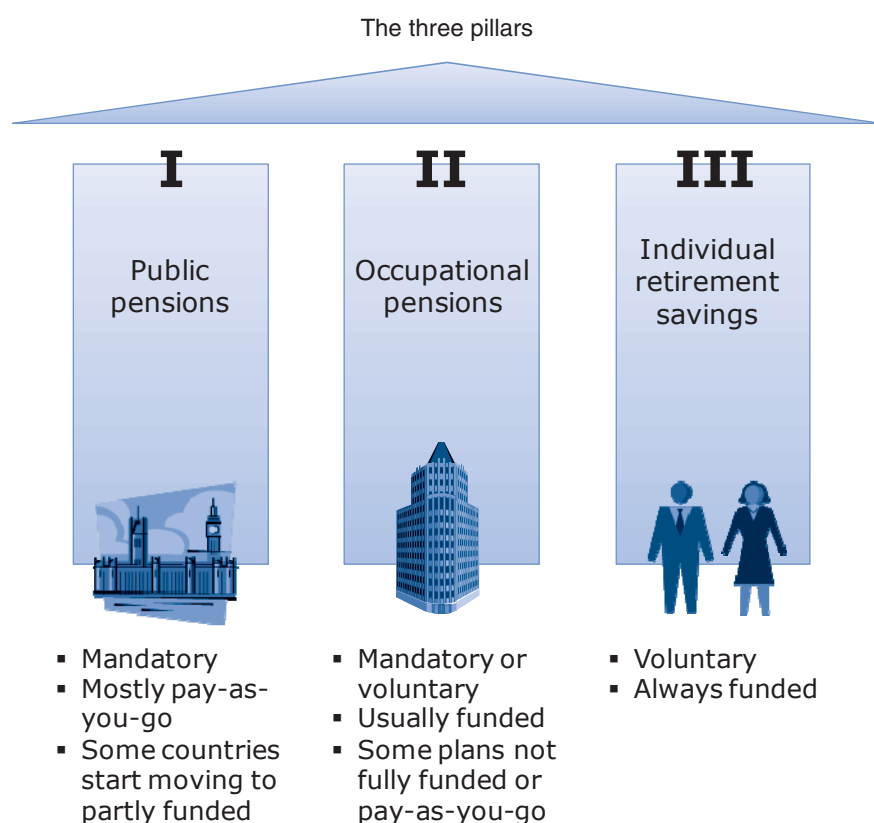
There is a very large pool of accumulated funds seeking high returns

Only funded pension plans have investable capital

The life insurance and pensions sector is in most countries characterised by growth, competition, large volumes of funds, and much detailed regulation. As more people have had the opportunity to save for their old age, or their employers have done so on their behalf – progressively so after World War II – there is a very large pool of accumulated funds seeking as high returns as possible, with controlled risk profiles.

Figure 2 describes the three pillars of most pension systems. Public pensions are usually unfunded, but not always. Only the funded portions tend to be included in pension statistics, as only these plans have investable capital. Occupational pensions are usually funded, but not always, while individual retirement savings are always funded, but may be accumulated through a format or in products not counted as “pension capital.”

Figure 2. Characteristics of the life insurance and pension sector



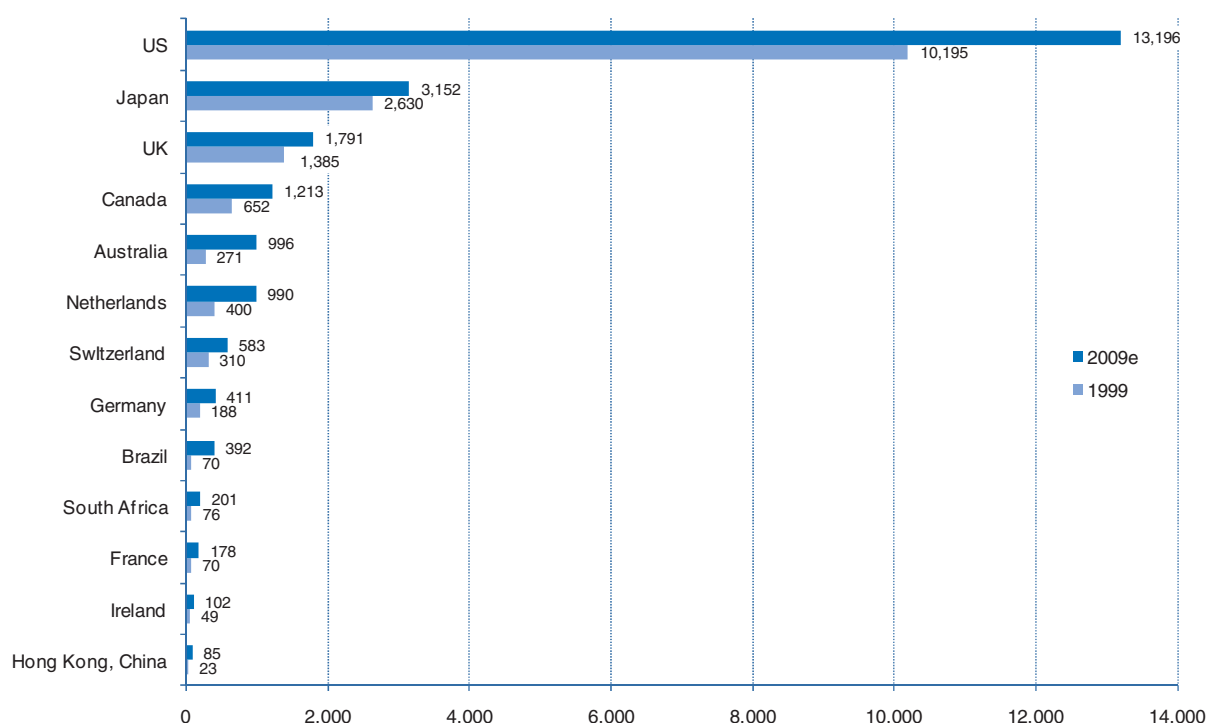
Source: Storebrand.

In an occupational pension plan, the average employee is about 40 years old, will retire in 20-25 years, and will receive payments for 20-25 years thereafter. The investment horizon for such plans is therefore intrinsically long, even after a plan becomes mature.

Figure 3 highlights the amount of pension assets, per-country accumulation, always with the caveat that comparison is difficult. The study that generated this figure looked at 13 countries, and found a total of some USD 23 trillion, about 70% of the GDP of the countries covered. The US is dominant, with other large OECD countries also toward the top of the list.

Figure 3. Global pension assets

Absolute and evolution 1999-2009, in USD billion



Source: Towers Watson, 2010 Global Pension Study, January 2010, page 12.

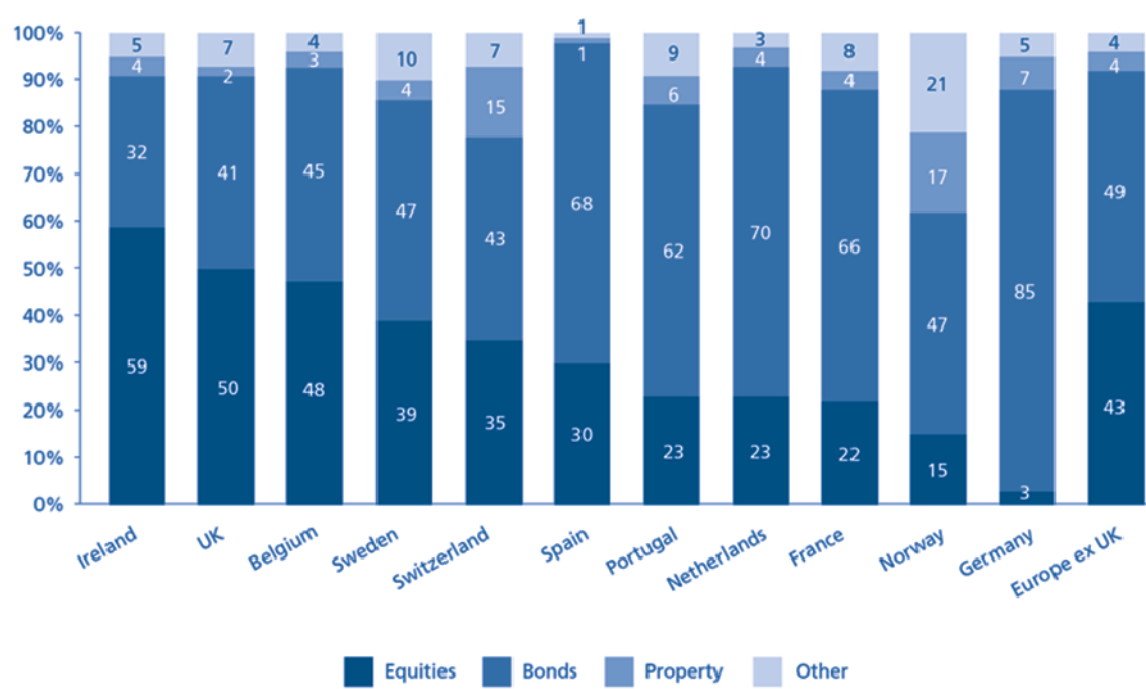
The investment profile of each pension plan is tied to a risk framework

Figure 4 shows that pension assets tend to be well-diversified over a number of broad asset classes. Internal guidelines and strict regulations ensure that no single risk becomes too large. The investment profile of each pension plan is usually tied to a risk budget or a risk framework in order to ensure that the entity will survive even the harshest of twists and turns that can reasonably be expected in the financial markets (the so-called *stress tests*).

Regulators and others have increasingly paid more attention to liability driven investments

In countries such as the UK and Ireland, strong equity allocations remain the norm, and they have been even higher in the past. These investments are expected to post higher returns over time than less-risky investments. They should therefore, over time, provide a higher pension for the beneficiaries or a less-costly pension plan for the sponsor. But the ups and downs of the equity markets can be severe, and they can continue for long periods of time. Therefore, regulators and others have increasingly paid more attention to aligning the characteristics of pension liabilities with the profile of the investment assets, an approach summed up in the term *liability driven investments*.

Figure 4. Asset class distribution in the life insurance and pensions sector



Source: Mercer, Asset Allocation survey and market profiles, European institutional market place overview, November 2010, page 5.

The majority of these liabilities are very interest-rate sensitive

After years of debate, most industry experts, academics, and regulators agree that liabilities can and shall be valued simply by discounting the cash flow of future pension payments. As the majority of these liabilities will be retained for a long period of time before being disbursed as pension benefits, they “belong” on the truly long end of the yield curve. Hence, their value is very sensitive to changes in interest rate levels, as well as to other changes in the yield curve. A sensitivity of 1:10 or 1:15 is quite common. As the discount rate decreases, the value – or the “burden” – of the pension liability rises. For example, a one percentage point decrease in the yield curve – and hence in the discount rate – increases the value of the pension liability by 10-15%.

Few investments can match this sensitivity

A significant fall in interest rates can have a dramatic effect on the sector. During the recession of 2008, the sector experienced about a 30% increase in the value of pension liabilities, caused by a 2 to 3 percentage point decline in long-term interest rates. Few investments, except long, liquid government bonds, can match a 30% increase in value over such a short period, and during a period of significant market turmoil.

Infrastructure deserves a higher standing in pension portfolios

Given that equities and other volatile investments raise problems for pension funds, and that truly long-dated bonds and other long-dated assets are few, infrastructure investments surely deserve a higher standing in the portfolio of any well-managed, properly diversified pension fund.

IV. Funding infrastructure

Infrastructure has many of the characteristics sought by pension fund managers

Public infrastructure and other public physical assets have many of the characteristics sought by pension fund managers. The economic life of the investments and the corresponding cash flows they generate – or can generate – are long. The quality of the payers of the cash flows is high, and if necessary, the recipients could have recourse to the physical entity. As noted earlier, huge amounts must be invested in the coming decades in urban water, energy and transport systems, but new investments will also be needed in rural areas to improve agriculture, provide it with water and protect it from extreme weather conditions.

Much of the investment is needed in the developing world

There is also the challenge that much of the investment will be needed in the developing world, while most of the pension capital to date has accumulated in the OECD economies. Thus, insurance asset managers will need to find ways to invest in public infrastructure in countries that have diverging regulations and risk factors.³

Infrastructure projects have operational risks

Another issue is that the construction period for infrastructure projects carries operational risks: cost overruns, technical difficulties, natural disasters, etc. Construction companies should deal with these risks, not the pension providers. Pension providers step in – or scale up – their investments when this risk is covered or when the construction period is over and the operating period has started.

Infrastructure and other commercial real estate raise environmental issues

Infrastructure and other commercial real estate raise environmental issues of all sorts, not least the fact that about 40% of primary energy use worldwide occurs in residential and commercial buildings, and more buildings are to be built over the next 30 years than have been built up to now. Barriers to the construction of “green buildings” are legion. Work by the WBCSD found that most developers do not understand how inexpensive it is to build energy efficient buildings.⁴ Also, incentives are often skewed, with developers encouraged to install the cheapest, least-efficient heating and air-conditioning systems, as the higher costs of operating these systems is usually passed along to buyers or renters. Also, the cost of ecosystem services remains outside of all accounts, from those of construction companies to those of nations.

What can be done to reduce energy use

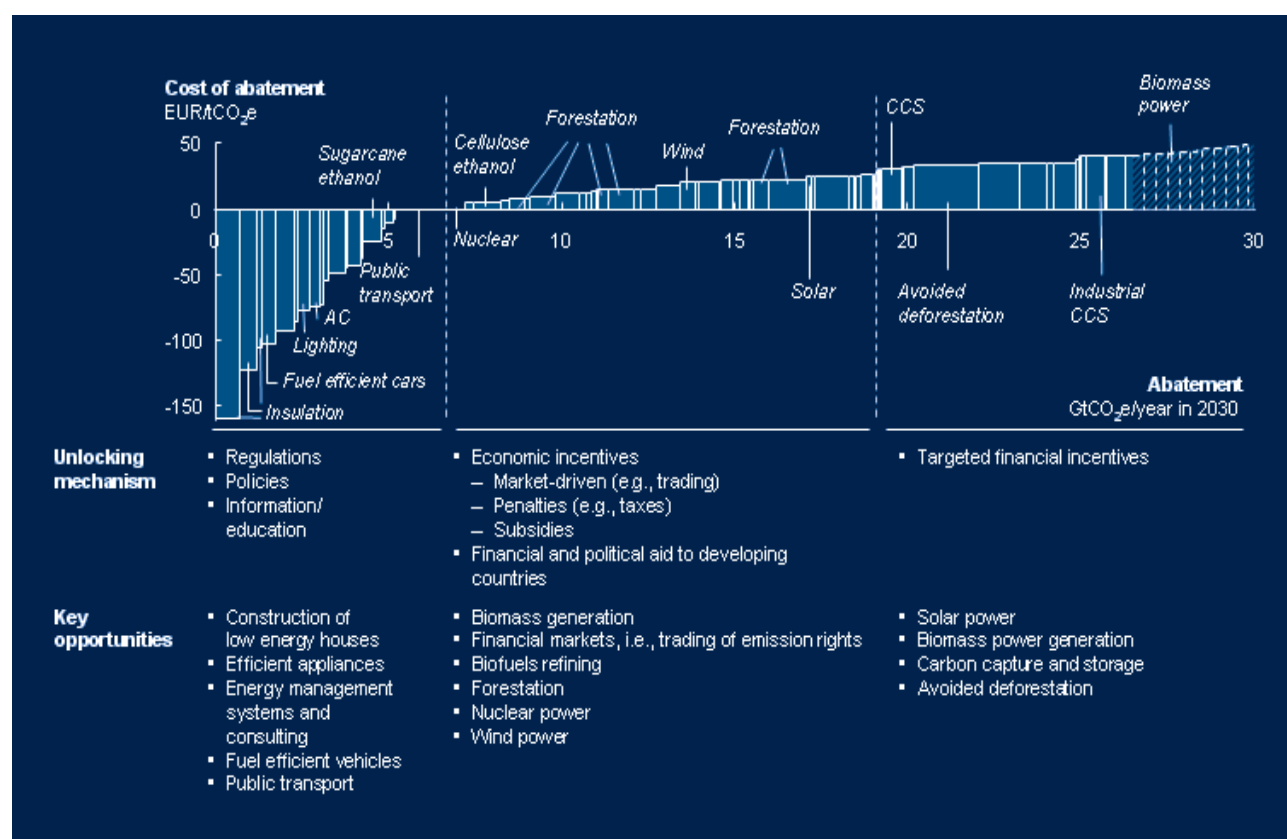
The WBCSD estimated that energy use in buildings could be cut 60% globally by 2050 if six major recommendations are followed:

- Strengthen building codes and energy labelling for increased transparency.
- Use subsidies and price signals to incentivise energy-efficient investments.
- Encourage integrated design approaches and innovations.
- Develop and use advanced technology to enable energy-saving behaviour.
- Develop workforce capacity for energy saving.
- Mobilise for an energy-aware culture.

Technology for low-carbon energy efficiency largely exists and can be used to save money

Not only does the necessary technology largely exist for low-carbon energy efficiency, but using it can save money. Below is the well-known but somewhat controversial map of carbon abatement opportunities from a report by the McKinsey Global Institute.⁵ Activities on the left-hand side of the curve are expected to have higher incomes than costs, with current known technologies in areas such as insulation, lightning and air conditioning. Governments need to impose stricter regulations and building codes on all new entities to be built, and after some time extend the restrictions to all existing physical stock. Technologies will have the time needed to move down their efficiency curves and make the cost of environmental upgrades affordable for the existing stock. One can imagine buildings needing an environmental certificate before titles can be transferred.

Figure 5. Investment opportunities from climate change as identified by analysing the CO₂ abatement cost curve



Source: McKinsey&Company, Impact of the financial crisis on carbon economics, 2010.

Investments in new technology are risky

It is also true that direct investment in innovative, early stage technology is risky and must be treated as such. Public subsidies, therefore, are often used to encourage new technologies.

Public guarantees to attract private capital

There is a long tradition of public bodies guaranteeing a certain risk level for an infrastructure project; with that guarantee in place, capital providers such as pension funds can scale up their investment so the infrastructure can be built.

World Bank agreement as example

In June 2011, the World Bank signed an agreement with the mayors of 40 of the world's biggest cities, in both developed and developing countries, to work on technical and financial assistance for projects to minimise the effects of climate change. World Bank President Robert Zoellick said that the deal would give mayors' access to the Bank's climate investment funds, totalling USD 6.4 billion in 2010, and he hoped this money could attract as much as USD 50 billion in private capital. The deal would also provide standard approaches to minimising climate risk and standard ways of measuring urban greenhouse gas emissions.⁶

Mandatory contributions by the buyers of housing infrastructure is another approach

Another approach, one that may be particularly appealing to the pension sector, is to require mandatory contributions at the time of new construction, for apartments, for example. The purchasers of the new dwellings would have to provide a mandatory contribution for their housing infrastructure, and pay a certain ongoing fee thereafter. The remaining part of the capital could come from capital providers such as pension funds, which would then be entitled to the ongoing periodic payments. Pension managers could then add to the size of the total investment, perhaps making possible the construction of new sewage or clean water systems.

V. Toward a more perfect match

What keeps pension fund money away from infrastructure investments?

Structured deals that shorten the investment horizon of infrastructure investments limit the participation of pension funds

One impediment is that the investment banks and others structuring the infrastructure deals tend to shorten the investment horizon of infrastructure investments so that they do not facilitate access to truly long cash flows. For example, this is seen in the United States, where many infrastructure investments come to market in the legal format of a fund – often a dated fund (one with a specific time horizon). When structured this way, the investor gets the upside and downside of valuation changes, but does not get the benefit of the long-term cash flows provided by the infrastructure. Packaging the investment this way makes it compete in terms of asset allocation with private equity, not with corporate bonds, as it should. Pension capital can only participate as small partners in such transaction formats.

Solvency II to come into effect in Europe

In Europe, the regulatory regime of Solvency II is expected to come into effect on 1 January 2013. This is a new set of regulatory requirements for insurance firms that operate in the European Union; it sets up a single market in insurance and pension supervision while also improving consumer protection in case of insurance company or pension provider bankruptcies. The framework directive is in place; the Implementing Measures are about to be settled; and the more detailed Level Three Regulations are being worked out in parallel.

*Solvency II
penalises
infrastructure
investments*

However, the regulatory details of Solvency II require that a significant part of insurance industry assets be invested in domestic-currency government bonds. That is because only government bonds are recognised as having a value change profile resembling that of insurers' liabilities. Corporate bonds are penalised significantly (through the need for significant capital to support the investment), and an even tougher capital requirement is placed on equity investments and the like. If infrastructure investments are categorised as "private equity", regulations require an excessive amount of capital to cover the relatively moderate risk of the infrastructure investment; the moderate returns typical of infrastructure investments are simply not high enough to support the unreasonably high capital requirements. However, if infrastructure investments were classified similarly to high-quality corporate bonds for regulatory purposes, then the capital required to back the investment would be much lower, and much more money could be invested. The modest returns would then be sufficient to offset the modest capital requirements. This is currently not the case.

*Should regulation
be this rigid?*

For example, the capital requirements for investing in the long-term bonds of government-controlled entities, such as Infrastructure Ontario in Canada or Statnett in Norway, are much higher than for the corresponding government bonds of these countries. In this context, only supranational organisations like the International Finance Corporation or the World Bank can match a government issuer. Should regulation be this rigid?

*Lengthening the
regulatory horizon
for capital
efficiency would
help*

The economic life span of the physical infrastructure is often 40-60 years, but the capital efficiency of the entities borrowing funds for these investments is often measured on much shorter time spans. The fact that these institutions typically issue debt for shorter time horizons than the economic life of the underlying asset means that refinancing is required. Lengthening the regulatory horizon for capital efficiency would help. And access to the underlying asset also makes the investment opportunity more attractive for pension capital.

*Capital
requirements for
infrastructure
investments
should take better
account of
underlying assets*

If debt – for example in the form of bonds – is issued by government-controlled entities, like Infrastructure Ontario or the Norwegian power grid provider Statnett, then a formal credit rating is the basis for assigning how much capital is needed to support the purchase of bonds issued by these organisations. Mechanisms need to be developed to acknowledge that these institutions have access to the underlying asset (as in a covered bond); as a result, they should be able to finance their infrastructure activity with much lower capital burden for the pension investor.

*Something
fundamentally
wrong in current
approaches to
valuation*

The bottom line is that there is something fundamentally wrong in how pension liabilities are valued. Pension liabilities are to be paid out decades from now, yet they are valued based on the prevailing spot curve for essentially government bonds or swap quotations on any given day, and this is the basis for determining whether an institution is sufficiently solvent. During the recession, many entities in the pension and insurance sector felt they were solvent at breakfast, insolvent at lunch, but solvent again at close of business, or only a few days later.

Smoothing mechanisms so that long-term liabilities could better match longer-term, high quality investments

Assessing the value of truly long-term liabilities should require the acceptance of a variety of stabilising or smoothing mechanisms that would enable the participation of the long-term investors that governments are seeking. Perhaps the value-change profile of liabilities needs to move a bit more slowly; and with some careful consideration, longer-term, high-quality assets such as infrastructure investments could be valued through a mark-to-model system so that their profile could more closely match that of the liabilities.

This would be a significant step forward in enabling pension providers to act as long-term investors, absorb long-term risk, and even have the potential to act counter-cyclically when the next crisis hits the markets.

“Regulated Asset Base” model to encourage infrastructure investment

Martin Stanley similarly argues in this issue of *Financial Market Trends*⁷ that infrastructure can be a good investment for pension funds. However, encouraging such investment would require governments to promote a “Regulated Asset Base” model to improve capital expenditure and to avoid undue solvency rules and other regulatory obstacles to long-term investment. He further maintains that governments should avoid crowding out private-sector investment, confining interventions to projects where public risk-sharing is necessary, and refrain from making frequent short-term changes to the regulatory framework.

Securitisation of social infrastructure

There are good examples out there that can be built upon. Britain has a long tradition of securitising social infrastructure, whereby the riskier parts are treated as such and the less risky, the majority of the funds, are issued as high-quality bonds.

Communication is important to promote public-private partnerships

There is too little communication and co-operation between public regulators and finance ministry officials on the one hand, and the pensions and insurance sector on the other. Communication is important, because the problems in so-called public-private partnerships (PPPs) for infrastructure tend to be more psychological than logical, in the sense that government officials and business people usually have radically different mindsets. Communication can bring them closer together so that effective cooperation can follow. Interaction is especially important between the leading entities in the public or private sectors because progress is best made at this level. There is a vast difference of mindsets between leaders and laggards in these issues.

Infrastructure Ontario as example

Infrastructure Ontario, a “crown agency” (government organisation) that operates at arm’s length from the government, was established in 2005 to – among other things – facilitate such communication, creating consortia to design, build, finance and maintain government buildings, roads and transit systems. It has “closed” on 29 projects – that is, raised the money and begun construction – and has completed about a dozen.⁸

A growing number of pension funds have been investing in PPPs

Infrastructure Ontario, modelled on the British public-private partnership approach, allows consortia to bid on highly detailed, fixed-price, date-certain projects, transfers virtually all risks to the winning consortium, and then allows it to raise the capital required, the capital usually being about 90% debt and 10% equity. The consortium is then paid annual service payments for the next 30

years or so. Pension funds are usually looking for higher returns than the 11% these projects usually earn, but over the past year or so a growing number of pension funds – both public sector and private companies – have been investing in such projects to manage their portfolios and because of the long-term guaranteed returns. However, the new interest shown by the pension funds is largely because Infrastructure Ontario has been communicating with them.

Norway recently passed legislation targeting investments in infrastructure

Norway passed legislation in December 2010 allowing a separate allocation for direct investments in physical infrastructure of national importance. The investments must yield a long, stable, and predictable cash flow. The regulatory details have yet to be worked out, but a strong political signal has been sent.

Co-operation, coordination and government leadership are required

The examples of progress suggest that a more perfect match can be created, but it may require co-operative efforts and coordination between public bodies, and between those public bodies and the private sector, and even among businesses – rarely, if ever, seen before. It will also require that governments demonstrate leadership and establish guiding principles, that they let the market mechanisms work within the guidelines established, and that they encourage the more effective use of existing technologies while stimulating the development of new technologies.

Rebuilding the infrastructure of our civilization over the coming four decades will require a great deal of new thinking, investing, regulating, and doing business. The opportunity to use the wealth of pension funds as part of these innovative approaches must not be missed.

Notes

1. American Society of Civil Engineers (2009).
2. World Business Council for Sustainable Development (2010).
3. This paper does not presume to offer an answer to that issue.
4. World Business Council for Sustainable Development (2009).
5. McKinsey Global Institute (2008).
6. Barrionuevo (2011).
7. Martin Stanley is Global Head of Macquarie Infrastructure & Real Assets, and Senior Managing Director, Macquarie Group; see his article “Investing in Infrastructure: Getting the Conditions Right” in this issue of *Financial Market Trends*.
8. Pers. Comm. with Paulette Den Elzen of Infrastructure Ontario, June 6, 2011.

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Investing in Infrastructure: Getting the Conditions Right

by

Martin Stanley*

Maintaining and building new infrastructure that delivers agglomerative benefits is crucial for promoting sustainable economic growth. Capital needs for infrastructure investment are massive. This capital could be sourced especially from pension funds and other institutional investors for whom infrastructure funds are attractive investment vehicles. But in order to mobilise such private capital, the public sector needs to provide the right framework, e.g. by promoting a “Regulated Asset Base” model to improve capital expenditure, by avoiding undue solvency rules and other regulatory obstacles to long-term investment, and by closing the knowledge gap with regard to infrastructure investments. Governments should also avoid crowding out private sector investment, confining interventions to projects where public risk sharing is necessary, and refrain from making frequent short-term changes to the regulatory framework.

JEL Classification: E2, G1, G2, G3, H44, H54, H81.

Keywords: Long-term investment, infrastructure, Regulated Asset Base model

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I. Introduction

The OECD has identified an important theme: investing for the long-term future, which has been central to Macquarie's Infrastructure and Real Assets (or MIRA) business for close to twenty years.

Development of infrastructure as an investment class is important to tap a pool of savings

MIRA's role in the development of infrastructure as an investment class comes from a practical solution that arose during a period of financial difficulty in Australia. Recession, and the consequent difficulty of finding funding for infrastructure, coincided with the growing pool of savings in Australia being accumulated as part of compulsory employee retirement savings schemes.

Macquarie recognised that infrastructure was an excellent match for long term institutional investors, mobilised capital from these pension funds, and used the combined funds to invest in roads and other infrastructure companies initially in Australia and then subsequently around the world. MIRA now manages more than 100 infrastructure businesses in over 40 different investment vehicles, with assets under management of around USD 95 billion.

According to the annual Towers Watson Survey, MIRA is by far the biggest global infrastructure fund investor worldwide, but we are not alone. We now have quite a few competitors. That is because there is an appetite among institutional investors for infrastructure, and because, like any good idea, it gets replicated. Around the world, we invest in water and energy utilities, road networks, ports, airports, renewable energy, telecommunications and social infrastructure.

Regulatory and investment framework to support infrastructure investments

This note sets out how to mobilise more institutional equity into infrastructure, building on this growing story. We need to build on it, to help bridge the infrastructure funding gap between OECD governments' aspirations for investment in infrastructure to drive economic growth; and the pressures on many government balance sheets following the recent economic crisis. This note's central theme is that if the regulatory and investment framework is right, more institutional money can be invested in infrastructure to deliver the higher levels of capital expenditure needed in the sector globally.

II. Better infrastructure

Investment in infrastructure underpins growth

Why do we need more and sustained investment in infrastructure? The answer is that the current overriding policy priority for OECD economies is the promotion of sustainable economic growth, and infrastructure renewal and new build is at the heart of economic growth. As well as being a direct contributor to GDP in its own right, infrastructure spending underpins investment across the economy.

...and delivers agglomerative benefits...

The renewal of economic infrastructure delivers agglomerative benefits that can accelerate regional economic development and underpin economic and industrial clusters. Good infrastructure is vital for the economic as well as

physical growth of cities. Infrastructure is essential for the clustering of professional services and other business sectors in modern cities: transporting people to and from work; enhancing the exchange of information within different economic clusters; allowing new office and building developments; reducing transportation costs through concentration of population; and underpinning all of the above, helping make cities effective environments, and so attracting mobile global talent to live there. Rural communities become more connected, allowing labour and capital to become more mobile and hence allowing for economic growth in the regions.

...for example in London

Last year this author chaired a Commission on the future of London's infrastructure.¹ The Commission's report highlighted some startling statistics about the productivity gains from this agglomeration effect in London. Inner London has an average Gross Value Added per head that is 2.8 times the UK average. And most industry clusters are around a quarter to a third more productive in London compared to the UK average for that industry. None of that can be achieved or sustained without high quality infrastructure.

III. Pension funds, insurance companies and infrastructure

Pension funds are a major source for infrastructure capital

The bulk of the capital that Macquarie has historically invested in infrastructure has been sourced from the global pension fund market. So why are pension funds and insurance companies and infrastructure assets a good match? Fundamentally, because they are all *long-term* businesses.

Infrastructure typically provides low risk regular revenue, often inflation-linked

Infrastructure businesses provide essential services to the community or economy. They typically are relatively low-risk and low-volatility, with regular, long-term revenue streams. As a result, many are regulated, either formally by economic and standards regulators, or indirectly by competition authorities. They have a high proportion of fixed assets and a stable competitive base. Revenues are often inflation-linked directly or indirectly, which is attractive to pension funds whose liabilities are also inflation-linked. Today, these characteristics are particularly appealing when many other fixed-income investments, such as government debt, are paying historically low yields in most countries. Infrastructure funds are attractive investment vehicles for pension funds and other institutional investors, providing diversified portfolios of infrastructure businesses.

Pension funds and insurance companies are well-placed to invest for the long term

Pension funds and insurance companies are better placed than most investors to invest for the long term, especially the larger pension funds, although trustees are not immune from the pressure of short-term and near-term economic cycles. Macquarie's investments in the sector are typically long-term. This allows us, as investment professionals, to take a long view of the companies in which we invest, which is good for those infrastructure companies. We are comfortable with the businesses in which we invest undertaking long-term capital expenditure because we, and they, will be there to see things through to the end of the investment cycle.

Regulation should be supportive

This is very different from the traditional private equity approach where investments are made with the intention of selling them, or "flipping" them,

following a short period of ownership. Of course, this type of investment rightly has its place in a fund manager's portfolio, but it is very wrong to group infrastructure fund investments and private equity fund assets in the same bucket for evaluation and regulation purposes.

Pension funds are trusted partners

There is also an attractive symmetry in citizens' pension contributions being used to finance the infrastructure that underpins the jobs of tomorrow. Pension funds are correctly seen by governments as trusted partners and socially responsible. MIRA has found time and again that when we have purchased a nationally important piece of infrastructure in a jurisdiction that is new to us, the public authorities are reassured not only by Macquarie's reputation as an active and responsible investment manager, but that we are managing the investment on behalf of long-term institutional investors.

IV. The funding gap

Infrastructure investment has been lower than required

Infrastructure investment is expensive, and there is a backlog of ageing assets in many advanced OECD economies that need renewal. The OECD's own excellent Futures Infrastructure Project, on which Macquarie has been very pleased to partner, has set out the scale of the funding challenge. The OECD's 2007 report, *Infrastructure to 2030*, estimated that around USD 50 trillion would be needed worldwide in the period to 2030.² But economic investment has been running at lower levels than this rate in many economies. In the UK, for example, the national infrastructure plan suggests increasing spending in the economy on infrastructure from a historic average of around £30 billion a year³ to £40 billion annually.

The private sector will have to fill a large capital expenditure funding gap

Given the state of the public finances in many countries, it is predominantly the private sector that will have to fill this large capital expenditure funding gap. In 2009, the value of assets in institutional funds was some USD 65 trillion globally. Compulsory national or regional pension schemes, in particular, have the potential to accumulate large amounts of capital quickly. If the public sector creates a supportive investment framework the private sector can do a great deal more to fill the gap.

...but to do so the right framework is needed

The objective must be, first, to facilitate greater and better capital expenditure in infrastructure networks and assets by the owners of those infrastructure businesses. And second, to avoid putting unnecessary barriers in the way of pension funds and other private institutions seeking to invest more in the infrastructure sector.

V. Getting the framework right for capital expenditure

Introducing balance sheet accounting is important

One of the reasons that there is a funding gap is historic underinvestment by the public sector. Many public sector organisations and enterprises treat both operating expenditure and capital expenditure as fungible cash and do not have a balance sheet for their assets. So when budgets are tight and political pressures high these organisations will be tempted to cut capital expenditure first. That is made much easier when there is no balance sheet to reference the

value of the asset base and the declining value of that asset base as it depreciates. That is bad for future generations. Infrastructure is asset heavy and long-term so having a balance sheet that values the asset base is particularly important compared with other kinds of enterprises.

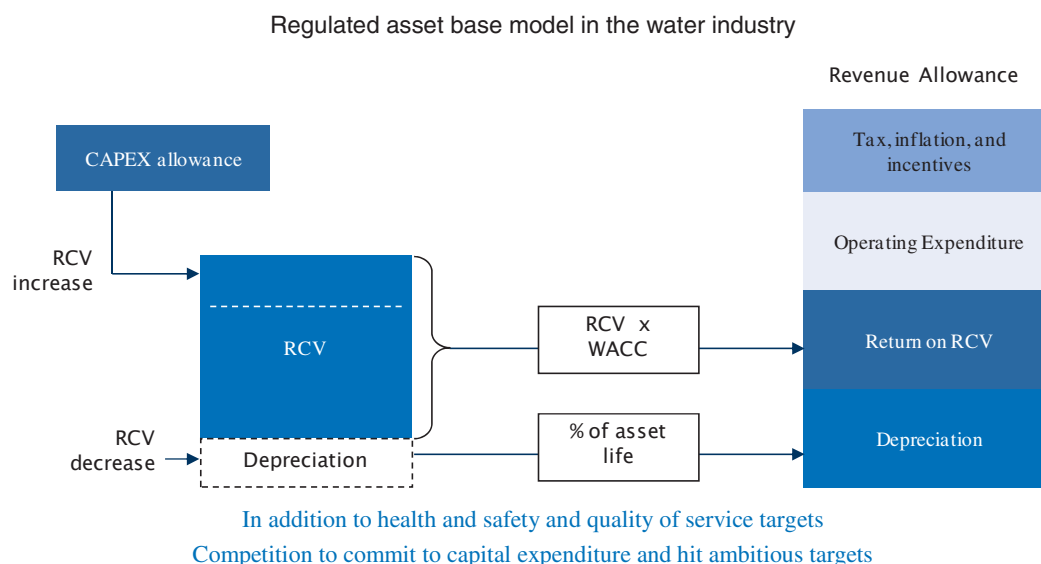
London underground as example

The history of the London underground system is a prime example. Decades of underinvestment are only recently being put right, at great expense. Blacksmiths are still required to repair some items on the network. The London First Infrastructure Commission Report recommended to the Mayor and UK Ministers that the London Underground in future should be funded on the basis of a proper balance sheet. The Underground remains in public ownership. But whether infrastructure is in the public or private sector, it needs a balance sheet and transparency regarding assets and costs. For a public transport asset, however owned, there needs to be a clear understanding of the potential trade-offs between spending on running costs now, upgrading ageing assets, fare subsidies, and so on. A balance sheet also makes unjustified expenditure more visible and so easier to bear down on.

“Regulated Asset Base” model enhances benefits

The other benefit of a balance sheet is that combined with regulation, it can form a secure basis for determining returns to financial investors who need certainty if they are to invest in an asset either as equity or debt. We have found that the use of a “Regulated Asset Base” or “RAB” model is a smart way to do this, while protecting consumer interests (Figure 1).

Figure 1. Notion of Regulated Asset Base has driven UK infrastructure investment



Source: Macquarie Infrastructure and Real Assets (MIRA).

The fundamentals are that a RAB is created in a sector or company, and accounted for, and future capital spent once completed is added to the RAB, increasing the company’s “Regulated Asset Value” or RAV, increasing with inflation. The regulator awards a return on the RAV based on a “Weighted Average Cost of Capital”. The regulator typically has a legal duty to finance the infrastructure company’s functions by these means.

The RAB model is not confined to the UK, although it started there. For example, many European airports have a RAB-based framework, with prices set based on cost allowances, including capital expenditure. And the French toll road networks have regulated price increases subject to a capital expenditure requirement, which helps align business goals with wider public needs. We have invested in a number of these assets, not least because there is in place an understandable asset-based regulatory model that works.

VI. Getting the framework right for institutional equity

Second, a plea: we must avoid creating unnecessary barriers to mobilising more institutional equity if we are to provide firepower for the capital expenditure required by infrastructure networks.

*Need to mobilise
long-term
institutional capital*

There is capacity for more long-term institutional capital to be invested in infrastructure. In the UK, for instance, the level of investment is estimated to be less than 1% of pension fund assets, compared with 8% to 15% in some Australian and Canadian funds.

*Understanding
infrastructure funds
and the
“alternative”
category; there is a
knowledge gap to be
overcome*

Let us not close off the opportunity. As an investment asset class, infrastructure funds are not yet as well-understood and well-known as corporate or government debt or a basket of equities. They are bracketed as an “alternative” investment, but that “alternative” category contains significant variations – hedge funds and private equity are “alternatives”, too, but have very different investment characteristics relative to infrastructure funds. Not all institutional investors, particularly smaller pension funds, are familiar with infrastructure as an asset class. That knowledge gap can be overcome – and the OECD’s current work in this area is playing a valuable role in that regard.

*The implementation
of capital adequacy
regulations should
recognise the
relatively lower
risks of
infrastructure funds*

But it is also important that policymakers take account of the differences among “alternatives” while formulating regulation, particularly in implementing capital-adequacy regulation in the banking and insurance sectors. Under the Solvency II framework infrastructure fund investments seem likely to face capital charges at the same level as hedge funds, private equity and “other equity”. Solvency II is, of course, a complex and wide-ranging package and the treatment of infrastructure funds is only one aspect of it. But as they develop the final implementation of the overall package this year, policy makers should be strongly encouraged to look hard at finding a way for regulators and insurance companies to recognise the underlying relatively low risks of infrastructure funds compared with some other investments, particularly infrastructure funds where the manager takes a long-term and active interest in the management of the infrastructure assets in the fund. Disincentivising insurance companies from investing in infrastructure funds through such regulation would be something of a public policy own goal.

*Governments
should not crowd
out private sector
investment*

One final point: in looking at interventions such as publicly-owned infrastructure banks, governments must take special care to avoid crowding out private sector investment. The fact is that if private investors believe they will be competing with public sector capital for infrastructure assets, this will

overall reduce the appetite of private sector investors to participate in the market. Any such public sector interventions should be confined to those projects where the risks – perhaps regarding planning or other consents – are such that only the public sector can realistically manage them without crowding out the private sector.

Frequent short-term changes to the regulatory and tax framework should be avoided

The much more powerful way to deliver sustained infrastructure investment is to get the regulatory framework right; and then for governments to avoid the temptation to make frequent short-term changes to the regulatory framework or introduce ad hoc taxation that undermines confidence on the part of investors – as unfortunately we have seen recently in some well-publicised renewable energy schemes in Europe.

VII. Conclusion

So, in conclusion, infrastructure investment drives wider economic growth. Long-term institutional money is a great match for infrastructure assets and it can help bridge the infrastructure-funding gap. But we need stable regulatory frameworks, based on balance sheets or asset bases, to give investors the certainty they need. Further, we need governments and policy makers to focus on creating the right framework required for private sector investors to participate in funding the infrastructure gap, rather than seeking to find partial public-sector funding solutions that will merely discourage the private sector. And finally, we should seek in wider solvency regulation to facilitate, not disincentivise, a greater mobilisation of pension and insurance fund capital towards investment in infrastructure.

Notes

1. *World Class Infrastructure for a World Class City*, London First, www.londonfirst.co.uk
2. OECD Infrastructure to 2030 programme, www.oecd.org/departement/0,3355,en_2649_36240452_1_1_1_1_1,00.html
3. March Budget 2010, HM Treasury, UK Government.

How to Foster Investments in Long-Term Assets such as Infrastructure

by
Thierry Déau*

Mobilising private sector funding is essential in bridging the infrastructure funding gap. This can be done by appropriate regulation, targeted public financial support, and active involvement by institutional investors. Creating an appropriate policy framework and lifting regulatory constraints on long-term investments will foster financial stability of retirement savings systems and enable the development of strategic infrastructure projects that contribute to long-term growth. As capital markets and bank funding have dried up as sources of infrastructure financing after the global financial crisis, finding alternative long-term debt sources is critical. Private infrastructure financing can be promoted by targeted public measures and by building an infrastructure management culture amongst asset managers. Infrastructure investments also require long-term policy planning, with long-term strategic policy frameworks that exceed political cycles and are built on wide political consensus. Stable and accessible programmes of infrastructure projects and public-private partnerships (PPPs) are key in attracting private sector investors, complemented by adequate regulation.

JEL Classification: E2, G1, G2, G3, H44, H54, H81.

Keywords: Long-term investment, infrastructure funds, public private partnership (PPP)

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Thierry Déau is Founder and Chief Executive Officer of Meridiam Infrastructure. This article is based on a keynote speech delivered by the author at the OECD High-Level Financial Roundtable on Fostering Long-Term Investment and Economic Growth on 7 April 2011. This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein are those of the author and do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

I. Introduction

Mobilising private sector funding is essential

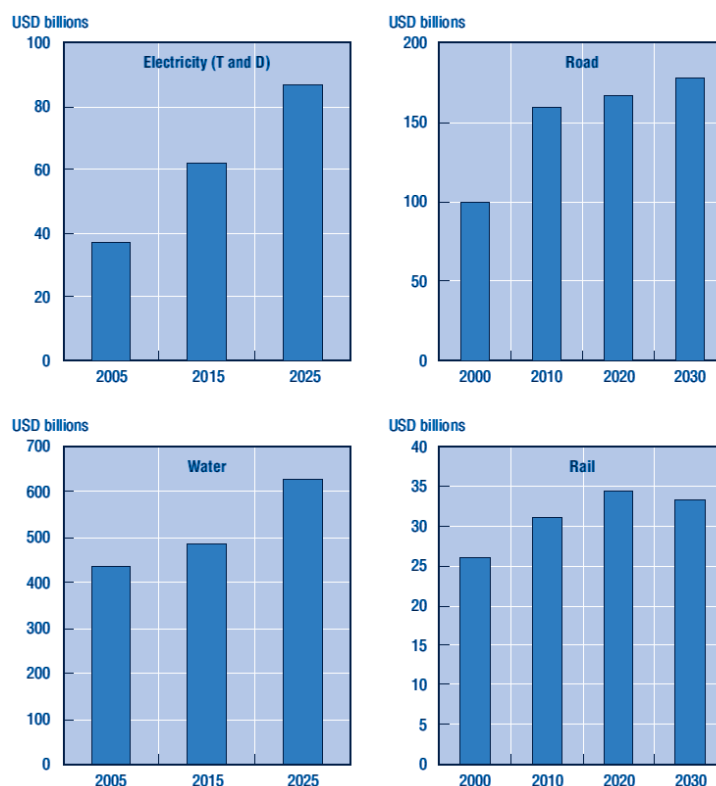
Mobilising private sector funding is an essential activity in bridging the infrastructure funding gap generated by the dramatic increase of infrastructure investment needs (Figure 1) at a time when most major OECD countries' governments have to manage heavy debt burdens (Figure 2).

OECD governments can foster investments in long-term assets

Building on its extensive experience as a long term equity investor in greenfield public private partnership (PPP) infrastructure projects in Europe and North America, it is Meridiam's¹ conviction that OECD governments can foster investments in long-term assets such as infrastructure through undertaking, in a timely manner, the following key actions:

- Align financial regulation and infrastructure policy objectives.
- Implement targeted public financial support for strategic projects.
- Promote active involvement in the management of infrastructure investments by institutional investors.
- Create a stable but demanding regulatory framework for project procurement that takes in account optimum risk transfer and availability of funding.

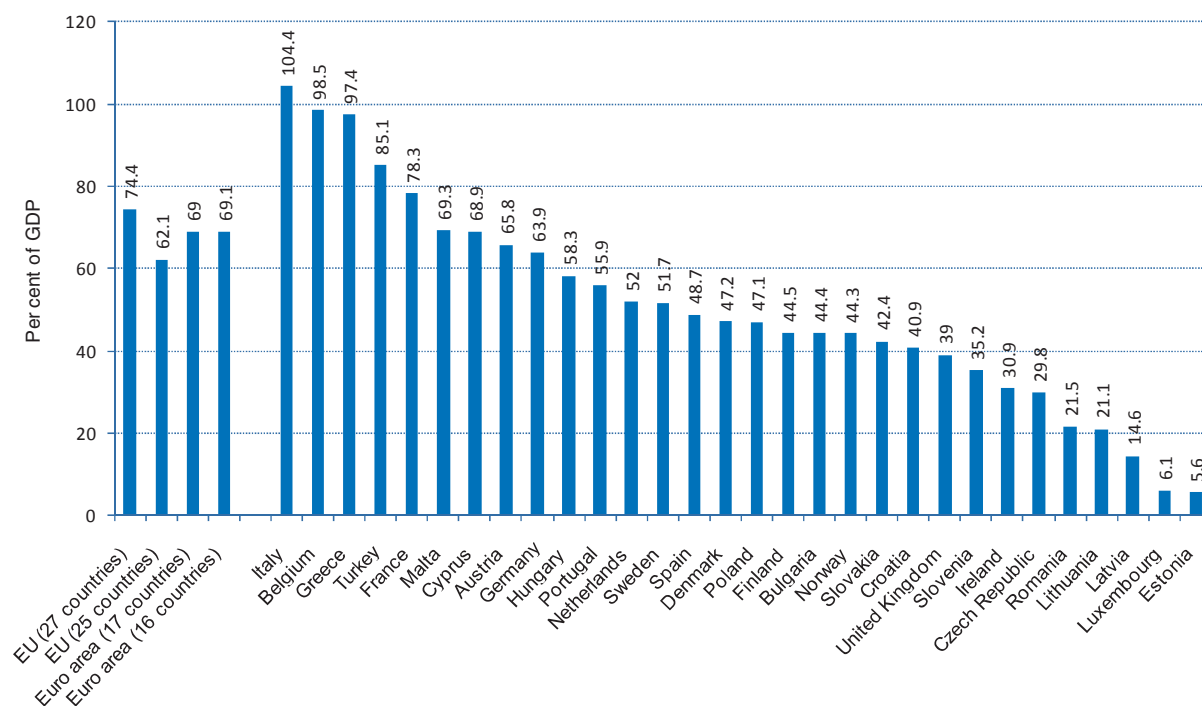
Figure 1. Infrastructure investment needs in OECD countries



Source: OECD (2007), *Infrastructure to 2030, Volume 2: Mapping Policy for Electricity, Water and Transport*.

Figure 2. EU Member State's Debt to GDP in 2009

General government consolidated gross debt in per cent of GDP



Source: Eurostat.

II. Align financial regulation and infrastructure policy objectives

Institutional investors' have ample funds

According to the OECD, the main institutional investors in the OECD (largely pension funds, insurance companies and mutual funds) held funds valued in excess of USD 65 trillion at the end of 2009, an amount commensurate to infrastructure needs.

Many of them are natural long-term investors

Among these investors, some are 'natural' long-term investors, having a requirement to match their liabilities to long term assets. For instance, pension funds start collecting contributions when individuals enter the workforce and pay benefits with the assets accumulated thirty to forty years later. Life insurers also clearly belong to this category of natural long-term investors.

But they need to be encouraged by a policy framework for long-term investment, leading to more sustainable retirement savings systems and long-term growth

These investors should be encouraged by a carefully designed policy framework to take advantage of long-term investments such as infrastructure that can notably provide inflation-linked and stable cash flows. The implementation of such a strategic framework could generate a 'double benefit' for governments, fostering financial stability for retirement savings systems, which would rely more on 'tangible' assets, and enabling the development of strategic infrastructure projects contributing to long term growth. Indeed a virtuous circle could be created whereby investments are made by local pension funds into infrastructure that would benefit the community, and at the same time generate returns that will fund the pension payments of future generations.

However, financial regulatory frameworks prevent this

However, financial regulatory frameworks, often designed without taking into account the specificities of the infrastructure sector, prevent this theoretical match from being realised in practice:

- In several OECD countries, quantitative constraints on asset allocation of institutional investors (for instance maximum or minimum limits per basket of heterogeneous asset classes which include infrastructure assets or even exclusion of certain asset classes as eligible assets) are still in place. For example, a strict limit of 5% on illiquid assets (regardless of the class) applies to national pension plans in Sweden.
- Liquidity requirements for institutional investors' assets, such as exclusion or limitation of assets that are not listed and traded on an organized security exchange, also strongly penalize infrastructure assets.
- Last but not least, the financial regulation of several OECD countries, notably in continental Europe, does not provide for capital investment vehicles with a sufficient lifetime to implement long-term equity investment in infrastructure projects with a tenor superior to 20 years. French regulations for example make it difficult to set a vehicle with a maturity longer than 15 years.

Infrastructure is disadvantaged as alternative asset

Due to these inadequate frameworks, the unlisted infrastructure asset class notably has to compete with 'exotic' or alternative asset classes such as hedge funds and at the end of the day only a small part of long term savings can be invested in infrastructure.

The mark-to-market approach and solvency regulations impede long-term investments

Other features of 'modern' regulation tend to prompt institutional investors to make short-term investments and thus penalise long-term investments. Use of mark-to-market valuation of assets and liabilities introduce notably artificial cyclical moves in long term assets even if the economic fundamentals of these assets have remained unchanged. Whilst it is important to agree on adequate measure of valuations, the mark-to-market approach could be detrimental to the perception long term assets. Solvency regulations (e.g. Solvency II in Europe) may also lead insurers to lower exposure to less liquid long term assets such as infrastructure assets.

III. Implement targeted public financial support for strategic projects

Before the crisis, project debt...

Before the so-called 'Global Financial Crisis', the route to raise project debt was relatively straightforward:

...was easily available from capital markets...

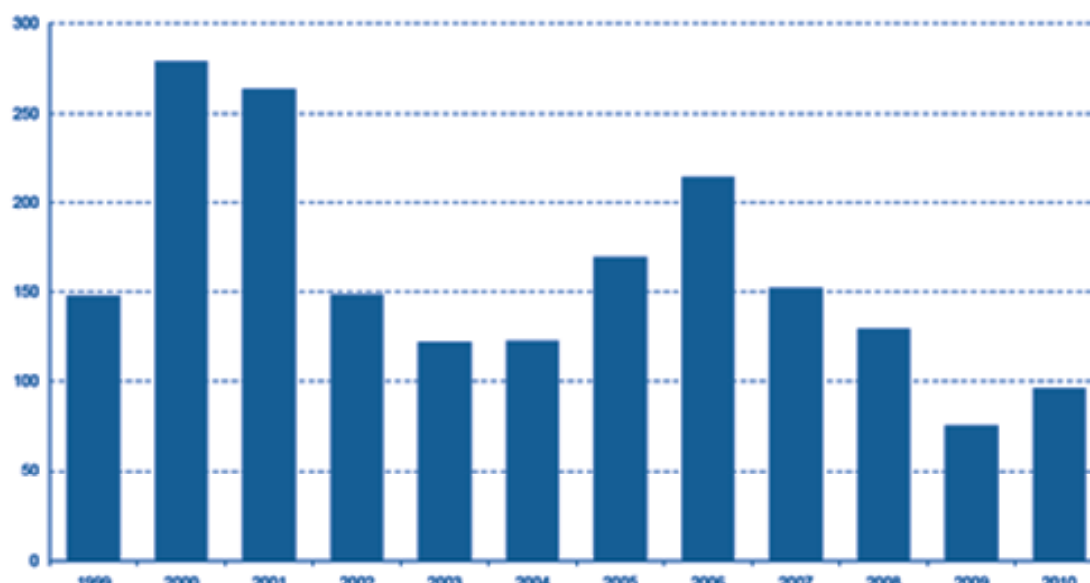
- Capital markets were a significant source of debt funding. European capital markets were notably active, in particular the UK, thanks to the credit enhancement packages provided by the monoline insurance companies. The dramatic rating weakening of these entities as a result of the GFC led nevertheless to a disappearance of such capital market funds as 'wraps' or insurance could no longer be provided.

...and banks, but these sources of long-term lending are now constrained

- Bank funding was abundant with notably the provision of sculpted loans tailored for each project, with notably very long term tenors and low margins. Nevertheless, in the aftermath of the GFC abundant and flexible long term bank loans may belong to the past due both to the severe reduction of the interbank liquidity, an increase in the cost of interbank lending and the expectation of the change to banking regulation in respect of the use of capital as part of the introduction of Basel III rules. Against this background, the banking sector is likely to become increasingly constrained in relation to the continuing provision of long-term debt. Additionally, as the bank market has declined overall, the potential for syndication of loans has reduced significantly, thus resulting in a reduction in the overall amount each bank may fund and causing further problems in fundraising for projects as Figure 3 illustrates.

Figure 3. Average mandated lead arranger (MLA) ticket per deal

EMEA Top 10 MLA: Average Ticket per Deal in USD million



Source: PFI.

Finding alternative sources is critical

Therefore, finding alternative long-term debt sources is critical, both in terms of amounts, maturity and pricing conditions.

Targeted public measures can support private infrastructure financing, like the ...

Some OECD countries have implemented targeted actions that played a key positive role for infrastructure financing in this framework. In the United States, the access to capital markets for infrastructure projects has for instance been favored by a comprehensive federal program:

- Implementation of the Transportation Infrastructure Finance and Innovation Act (TIFIA), which is a credit programme offering three distinct types of financial assistance (direct loans, loan guarantees and standby lines of credit);

- Tax exemption up to USD 15 billion across the USA for private activity bonds (PAB).

...TIFIA credit programme...

The TIFIA credit programme managed by the Department of Transport offers:

- Secured direct loan – Maximum term of 35 years from substantial completion, with repayments starting no later than 5 years after substantial completion. This allows for ramp-up, particularly in toll-road projects;
- Loan guarantee – guarantees a project sponsor's repayments to a non-Federal lender. Loan repayments to lenders must commence no later than 5 years after substantial completion of project;
- Standby line of credit – contingent loan available for draws as needed for up to 10 years after substantial completion of project.

...and the PABs programme

The PABs programme aims at providing low-cost financing to projects with private involvement to increase private sector investment in U.S. transportation infrastructure. In present value terms, the Federal tax-exemption subsidy for PABs could represent approximately a 15–20 percent reduction in the underlying cost of the borrowed funds.

Thanks to the utilisation of both elements of this funding support package, Meridiam recently raised long-term Project Bonds for two key projects for the Dallas Metropolis in achieving their congestion management objectives (Figure 4).

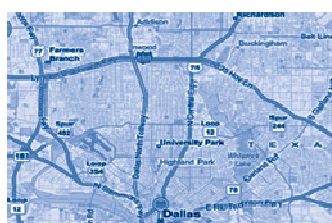
Figure 4. Two key projects for the Dallas Metropolis



NORTH TARRANT EXPRESS MOTORWAY (Texas) 52 years

Construction and management of 21,4 km length sections of the NTE motorway on Dallas – Fort Worth axe. Original financing by TIFIA and PABs bonds raised on the market.

- Revenue generation: users paid tolls
- Total project cost: \$2 billion
- Total debt raised: \$400 million (rating BBB-/Baa3, max maturity 30 years)



IH-635 (LBJ) Managed Lanes (Texas) 52 years

Construction and management of 20.8 km length sections of the primary circumferential roadway in Dallas within the Dallas-Forth Worth International Airport area. Original financing by TIFIA and PABs bonds raised on the market.

- Revenue generation: users paid tolls
- Total project cost: \$2.7 billion
- Total debt raised: \$606 million (rating BBB-/Baa3, max maturity 30 years)

Source: Meridiam Infrastructure.

*...matching
investors' need for
stable cash flows*

These US experiences show that targeted financial support by the public sector can facilitate access to long-term debt for projects through the matching of long-term investors looking for stable cash flows and long-term assets such as infrastructure projects.

*The EIB supports
infrastructure in
Europe*

The European Investment Bank has also been supporting infrastructure for a much longer term and brought banks to adapt their lending capacity to more optimal maturities. It has recently launched jointly with the European Commission a consultation regarding an instrument aiming at facilitating the access to project bonds by institutional investors.

*Other examples
show that adapted
procurement
processes are
critical to the
realisation of bond
financing*

These examples, as well as the project Meridian closed in Canada in the early part of 2010 through the capital markets by completing a bond financing of a major healthcare PPP project, the “Centre de Recherche du Centre Hospitalier de l'Université de Montreal” (CRCHUM) project, also stresses the fact that adapted procurement processes are critical to the realisation of bond financing. In Texas, the procurement process notably left a significant period of time (12 to 18 months) between commercial and financial close to ensure best market conditions available for capital market usage. Moreover, a protection of the private partner against any variation of the risk-free interest rate for 360 days after concession contract signing was granted by the public authority. These features enabled flexibility to be created in the timetable for financial close that allowed the project company to take advantage of the optimum market conditions over this period.

IV. Promote active involvement in the management of infrastructure investments by institutional investors

*Developing the
right culture is
essential*

Developing an infrastructure management culture amongst asset managers, investors and also the public sector will be essential in order to ensure that these entities obtain the best value from infrastructure investment.

*Infrastructure
assets require a
whole life costing
approach*

Infrastructure assets require a whole life costing approach to provide best value to the public. Both public and private sectors would benefit from adopting such approach. The public sector often under the pressure of short democratic mandates tends to favor construction of new facility as a goal and does not always plan the budget for the up keeping and the maintenance of the asset. This results in a severe degradation of the level of service to the public over the years and a significant loss of capital at the end of a 20 to 30-year period. Infrastructure investment is about asset preservation.

*An infrastructure
asset should not be
seen as a “financial
line” but an
industrial challenge
to be managed*

Specific skills are indeed needed to invest in these less liquid, longer term assets. One of the most important is the appreciation that an infrastructure asset is not a “financial line” but an industrial challenge to be managed. The original concept behind infrastructure investment was that ‘infracos’ would be created – that is dedicated and focused companies holding investment over the lifetime of the asset. In the early days of infrastructure investment financial investors, in particular, looked to shorten the period of investment, and to flip the asset for a quick return. There were few attempts to foster a business culture – this is now changing as a greater understanding of the nature of infrastructure

investing has evolved and as longer term investors have come to the fore. Creating and supporting this business culture is critical.

OECD could contribute to building this culture

To contribute to the building of this culture, leading multilateral institutions, such as the OECD, can play a key role in educating the financial community in infrastructure sector challenges and specificities (e.g. EIB or EBRD already “sponsor” infrastructure funds, EIB sponsors with the EU Commission the European Center for PPP Expertise to serve the 27 member states).

Incentives should focus on asset preservation and development

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

V. Create a stable but demanding regulatory framework for project procurement that takes in account optimum risk transfer and availability of funding

Infrastructure investments require long-term policy planning and stability

Due to the duration of the underlying assets, infrastructure investments require long-term policy planning. Stable and accessible programmes of infrastructure projects and public-private partnerships (PPPs) are notably key in attracting private sector investors who must invest development funds up front in order to secure such projects and can make informed choices about the geography of the projects they choose to follow.

Development of national long-term strategic policy frameworks for key infrastructure sectors, whose duration shall exceed political cycles, building, when possible, on wide political consensus, is highly desirable. This environment should be stable to maintain a high level of credibility of government commitments and build investors’ confidence.

This framework can be optimised through adequate regulation, perhaps including lock-up periods

Such a long-term and stable framework does not mean that the participation of the private sector cannot be optimised through adequate regulation. Certain changes to current arrangements in relation to the involvement of the private sector may be considered so that there is a balance between them and the stability of the public programme. For example, in certain countries allowances were made for investors to join and depart from projects at times of their choosing – this has caused a short-termist approach and has been counter to the concept of the creation of ‘infracos’ whose development requires commitment for a significant period of time. Additionally, longer term investors identified at the outset of this paper have a vested interest in long-term involvement in a project. Such investors’ interests are more aligned with public partners. Consequently consideration should be given to the introduction of lock-up periods for equity providers in PPP contracts to enable stable companies to be created by committed investors.

Benchmarking or market testing

There has been concern that long term fixed contracts between public and private sectors do not allow for value for money, as they are not able to take

procedures could be introduced

account of any changes in the cost of services over time – consideration should also be given to regulation introducing benchmarking or market testing procedures throughout the life of a project, and more generally a demanding regulatory framework at project level, should ensure that projects remain cost-effective.

VI. Conclusion

Recent developments in the infrastructure sector are positive

Despite the hurdles created by inadequate regulations or the lack of incentives, a certain degree of optimism can be derived from the recent developments in the infrastructure sector. Long-term investors whether from Canada or Australia have led the way to greater involvement in the sector and they are now followed by investors from around the globe including sovereign funds. The GFC, if disastrous for the economy, has had the merit of making credible the players of the market who have promoted a long-term approach to infrastructure as well as a better alignment of interests between the real source of long-term capital represented by pension funds, those would deliver infrastructure and the community that will benefit from it.

Note

1. Meridiam Infrastructure is a leading fund manager developing exclusively 25 year maturity infrastructure funds with 1.5 billion of assets under management (as of 31 march 2011) dedicated to the development, construction and management of public services infrastructure in OECD countries (Europe and North America) and the European Union.

Creating a Better Business Environment for Financing Business, Innovation and Green Growth

by

Richard Pelly and Helmut Krämer-Eis^{*}

Modern economies are increasingly reliant on innovation to improve their competitiveness and generate growth. However, the financing of innovation in Europe exhibits weaknesses that have been exacerbated by the recent economic and financial crisis, and which could have a material adverse impact on economic growth if left unchecked.

This paper explains the European Investment Bank Group's role in creating a better environment for financing business, innovation and green growth. It briefly presents to the reader the current challenges, both in relation to the availability of equity financing for earlier-stage business, innovation and green growth, but also the stark evidence of a continuing gap in bank lending. Moreover, it provides examples of ways that the financing of innovation can be improved against the backdrop of a flexible, business-oriented EU framework.

JEL Classification: E2, G1, G2, G3, H44, H54, H81.

Keywords: Long-term investment, business and innovation financing, project bonds, intellectual property financing, risk-sharing, public guarantees.

*

Richard Pelly is Chief Executive and Helmut Krämer-Eis is Head of Research & Market Analysis of the European Investment Fund. This article is based on a keynote speech delivered by Richard Pelly at the OECD High-Level Financial Roundtable on *Fostering Long-Term Investment and Economic Growth* on 7 April 2011. This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein are those of the authors and do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

I. Introduction

Innovation is essential for growth

Growth in modern economies is based on efforts to increase productivity through innovation, and innovation is an essential precondition for technological and structural changes, as well as a contributor to growth and competitiveness.

Innovation needs to be managed based on long-term decisions

Innovation management means not only the operational control of processes, but also the strategic management of a firm. A fundamental component of strategic innovation management is the long-term decision to innovate, which is accompanied by the need to establish structures and resources for the acquisition of technology.

Financing restrictions hamper innovation

The latest Community Innovation Survey shows that in the EU27, 52% of enterprises in industry and services reported innovation activity (between 2006 and 2008). The highest levels of reported innovation were in Germany (80%) and Luxembourg (65%), and the lowest in Latvia (24%) and Poland (28%).¹ Often, firms reported having ideas for technically feasible and customer-demanded innovation but that they lacked the resources to implement them; hence, financing restrictions are reducing innovation activities at the firm level.

This is also confirmed by empirical studies. For example, the European Commission (EC) in 2009 consulted more than 1,000 enterprises and 430 innovation intermediaries with the result that two main factors were seen as hampering innovation activities in enterprises: (1) lack of access to financing (70%); and (2) innovation costs that are too high (65%).² As a consequence, many firms have to rely on internal funding. The level and availability of internal funding, however, depends not only on the firm itself, but also on the business environment. Hence, policies aiming to boost growth must look beyond pure financial support to the entire business-enabling framework, including well-functioning labour, product and financial markets (in this context, aspects of the European Small Business Act are highly relevant).

In addition to internal funding, external finance (equity and debt) is also very important for companies seeking to commercially exploit new ideas, technologies, inventions or other scientific or market knowledge. However, the markets for external equity and debt financing are facing many challenges; in the following section, we take a general look at equity financing.³

II. A challenging environment – the VC market in Europe⁴

Lifecycle of innovative enterprises

A number of stages can be identified in the lifecycle of innovative enterprises:

- Pre-seed stage, encompassing initial research and development;
- Seed stage, covering the establishment of the enterprise;
- Start-up stage, covering development of the product;

- Early growth stage, covering small scale commercialisation and scalability studies;
- Expansion stage.

J-curve cash flow and business risk require seed-stage firms to rely on internal funds or venture capital

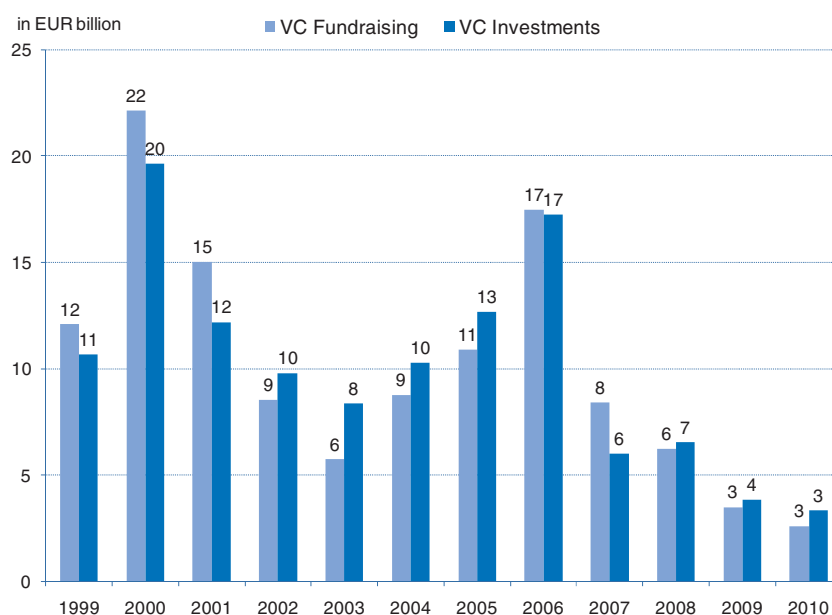
The cash flow of an innovative enterprise typically follows a so-called J-curve: negative cash flows during the seed and startup stages, with cash flows becoming positive at the early growth stage. Debt financing, which requires guaranteed regular repayments, is often not suitable for young, innovative enterprises, since they tend to have prolonged negative cash flows, a high risk level associated with their activities, and a preponderance of intangible assets.

Instead, such enterprises, at least in their early, “seed” stage, have tended to rely on financing from the founder’s own funds, and funds from family and friends. However, the extensive pre-revenue costs associated with innovative products mean that this source of funding is quickly exhausted, if available at all. As a result, alternative financing is often sought, usually in the form of equity finance. This tends to be provided in the form of venture capital (VC) – either formally by seed funds or venture capital funds, or informally by business angels. As a rule of thumb, these three VC categories tend to invest in the following ranges:

- Business Angels: from EUR 15 000 to EUR 400 000;
- Seed capital funds: from EUR 200 000 to EUR 1m;
- Venture capital funds: traditionally EUR 1-5m.

Venture capital investment has always been characterised by a pattern of boom and bust, as Figure 1 demonstrates.

Figure 1. VC funds raised/invested in Europe



Source: EIF, based on data from EVCA/PEREP_Analytics.

Venture capital investment has been characterised by a pattern of boom and bust

Demonstrated good returns in the venture-capital industry throughout the 1990s (particularly in the US), combined with technological innovation (particularly in the IT sector) led to a flood of capital flowing into the venture capital industry in Europe. However, this resulted in many new, inexperienced VC funds being financed, and many poor investments being made at inflated prices. Nowhere is this more evident than in the spike during 2000, at the time of the dot.com boom; during the ensuing bust, the amount of funds raised fell dramatically, which clearly affected the ability of VC funds to invest. Similarly, there was a general buildup in funds raised and investment in the years preceding the 2008 financial crisis. This occurred in spite of the relatively poor returns achieved by the VC industry during that period.

The global financial crisis has tightened financing conditions

The global financial crisis affected both the supply and demand sides of the financing equation. On the demand side, the crisis has had a severe adverse impact on access to financing by small business, with access to credit tightening across the board. Survey evidence suggests that this has led to increased demand for equity financing by enterprises that would have used debt issuance in the past. This has resulted in even more competition for limited business angel and venture capital funds. On the supply side, rather than making new investments, funds and business angels have focused on maintaining the health of their existing portfolio companies and ensuring they have enough capital to do follow-up financing of existing investments.

The supply side has been further affected by the fact that there are fewer funds available. Venture capital funds have struggled to raise funds because their limited partnership (LP) investors have also been affected by the crisis.

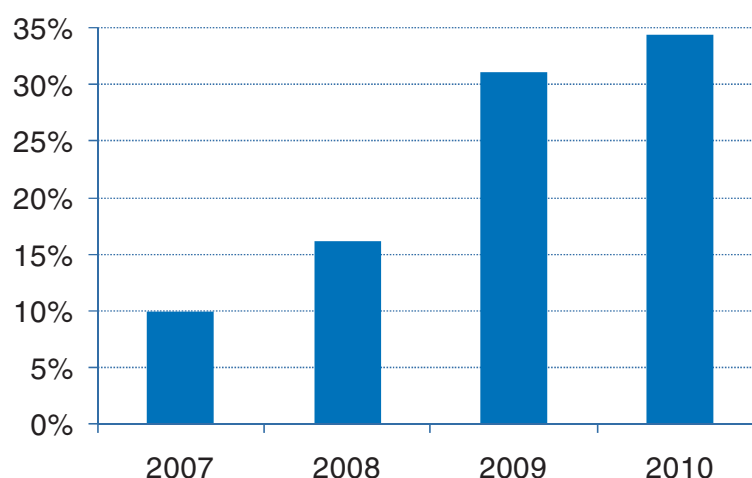
The equity gap for riskier, early stage financing is being closed by public funds

The crisis has also led to a structural change in the supply of VC funds. VC funds with money to invest have become less willing to take on the risk of early-stage innovative enterprises, being deterred in these uncertain economic times by the liability of having to supply the multiple rounds of financing often required by such enterprises. The bulk of venture capital (around 70%) is now allocated to early-growth or expansion-phase companies, which are less risky. As a consequence, venture investments have migrated towards the EUR 3m to EUR 5m range, giving rise to a growing equity gap in the EUR 1m-EUR 3m range, which policy makers are increasingly having to try to fill with public funds.

Public funds have assumed increased importance in the early-stage sector during the current economic climate. Government agencies (including the European Investment Fund) provided more than 30% of the funds raised by VC funds (from identifiable sources in Europe) during 2009 and 2010 (Figure 2). The overall increase is partly the result of declining overall fundraising; however, the absolute contribution of government agencies has increased by almost 80% over the past three years.⁵

Economic uncertainty has led to an impasse

As a result of these supply and demand factors, financing activity has been subdued. Economic uncertainty has also meant that the valuation of enterprises has become more difficult, and this has led to an impasse between investors and entrepreneurs, unable to agree on valuations. Even those funds with money to invest have struggled to find appropriate new ventures.

Figure 2. Share of government agencies in total “known” VC funds raised

Source: EIF, based on data from EVCA/PEREP_Analytics.

III. The EIB Group and its efforts to create a better financing environment

The EIB and EIF play an important role in the financing of businesses, innovation and green growth

The European Investment Bank Group (EIB Group) is the European Union's financing institution; it plays an important role in the long-term financing of businesses, innovation and green growth. (Shareholders are the 27 Member States of the Union, whose Finance Ministers comprise the EIB's Board of Governors).

The EIB Group consists of the European Investment Bank (EIB) and the European Investment Fund (EIF), which joined forces in 2000 to mobilise financial support for European Union (EU) objectives. Founded in 1994, the EIF is the EIB Group's specialist provider of risk financing for small and medium-sized enterprises (SMEs) across Europe. The EIF is owned by the EIB, the EC and a wide range of public and private banks and financial institutions. The EIF does not provide financing to SMEs directly but via a wide range of financial institutions, banks and venture capital funds involved in SME funding. By providing support and guarantees for SME financing, the EIF promotes the implementation of European policies, notably in the field of entrepreneurship, technology, innovation, growth, employment and regional development.

The classic lifecycle graph (Figure 3) outlines the existing areas of intervention by the EIB Group in the financing of growth businesses, innovation and sustainability. Early stage SME financing is undertaken by the EIF (marked in light blue), while the EIB (marked in dark blue) is very active in funding later-stage companies and projects.

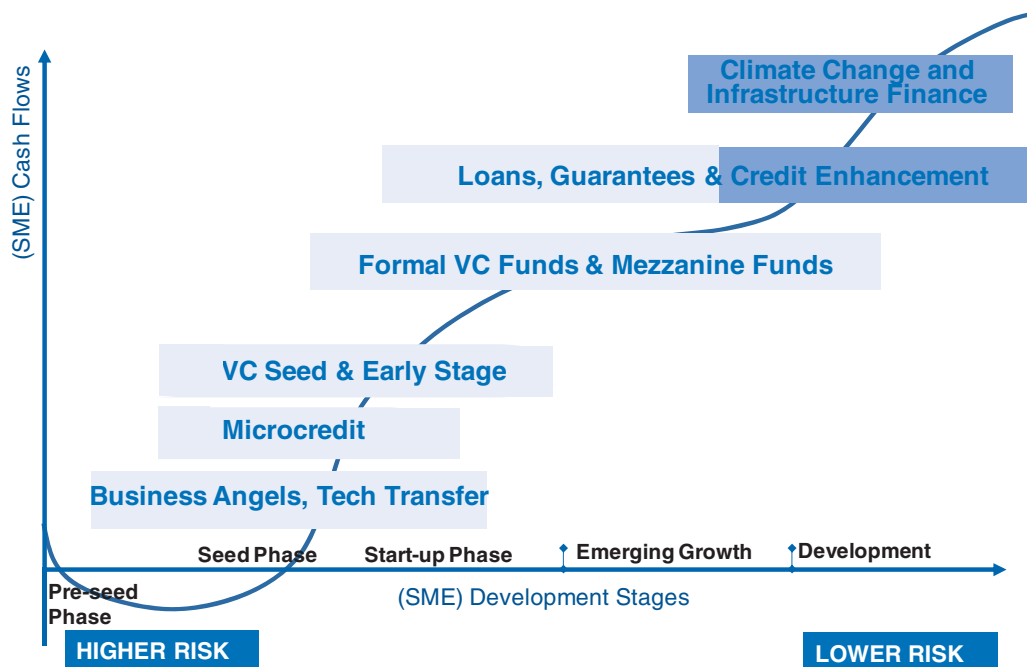
As guarantor and credit enhancer of loan and leasing portfolios, the EIF is a catalyst for

As a Fund of Funds and as guarantor and credit enhancer of loan and leasing portfolios, the EIF relies on a mix of European resources, own capital and Member state budgets to share risk and catalyse private sector funds and banks to increase their investments into high-growth and technology driven enterprises, providing a wide range of financing solutions. All of the EIF work

*private sector
funding*

is done by a team of over 200 professionals (100% policy driven but 100% market oriented).⁶

Figure 3. The EIB Group's product range for financing business, innovation, and green growth



Source: EIF.

*The public sector
has an important
role to play in
improving the
business
environment*

It is well-recognised that government and public institutions play a very important role in creating a better environment for financing business, innovation and green growth. In this context, the 2010 OECD study “What Government Can do to Make a Difference” makes it clear that the EIB Group needs to promote a wide range of financing options: “public initiatives to support SME growth and especially innovation are often centred on improving SMEs investment readiness (to access equity financing). It would be equally important, however, to encourage credit readiness.”⁷

*The EIB Group is
developing the next
generation of PPP
models*

The EIB Group, in very close collaboration with the European Commission and with a network of other International Financial Institutions, is working intensively on a new generation of financial instruments designed to meet the challenges that we have briefly summarised above. The work is ongoing and will be completed later in 2011, in line with the timing of the European Council’s and European Parliament’s decision-making sessions. Here, we outline our current thinking on this effort and some of the early proposals. The key ingredients for success are the following:

- The transformation of a significant percentage of national and EU budgets from grants and subsidies into revolving financial instruments, invested by market-oriented professionals. Future models of public financing intervention must also involve a better combination of grants, equity co-investments, loans, guarantees and fiscal incentives.

- The structuring of those financial interventions to reflect the risk profile and potential return – financial, social and environmental.
- Public budgets to stimulate growth should be used to catalyse private sector investment. This is the next generation of PPPs (Public Private Partnerships). It is worth noting the “State of the Union” speech by US President Barack Obama in January 2011, in which he specifically underscored the importance of catalysing national priorities via public funding and extensive PPP in order to out-innovate, out-educate and out-build the rest of the world.

To further illustrate these ingredients for success we show three concrete examples of initiatives that are in the early stage of their development but that show the path creating a better financing environment.

1. Project Bonds

Unprecedented investment will be needed in Europe's infrastructure

Over the next decade, unprecedented investment in Europe's transport, energy (both renewable and conventional), information and communication networks will be needed. Preliminary estimates point to investment needs of between EUR 1.5 trillion and EUR 2 trillion. From now until 2020, EUR 500bn is estimated to be needed for the implementation of the Trans-European Transport Network (TEN-T) programme. In the energy sector, public and private entities in the Member States will need to spend around EUR 400bn on distribution networks and smart grids, another EUR 200bn on transmission networks and storage, as well as EUR 500bn to upgrade and build new-generation capacity between now and 2020. Last, but not least, it is estimated that between EUR 38-58bn and EUR 181-268bn capital investments are required to achieve the Commission's broadband targets.

Tapping capital markets has become difficult after the financial crisis

Capital market issuance of long-term debt for the financing of greenfield infrastructure projects (Project Bonds) has come to a virtual halt as a result of the financial crisis. During the construction phase, in particular, such projects are considered low investment-grade at best. Only upon completion of construction and the confirmation of operating results, can the risk profile edge up into the higher investment-grade category. Long-term investors, notably pension funds and insurers, lack the appetite for low investment-grade risk, however. Most of them do not have the specialist expertise required to structure projects and carry out the resulting analytical and administrative follow-up. (In the past, such tasks were performed by monoline insurers; coupled with the credit enhancement of the underlying Project Bonds, this type of debt had become acceptable to institutional investors.) Long-term liquidity that used to be provided by banks has also declined significantly, as banks have become increasingly concerned about their own balance sheets and capital position. The EIB has stepped in to provide some of the missing liquidity. In order, however, to address the huge infrastructure needs, the return of the capital markets as a provider of long-term financing is essential.

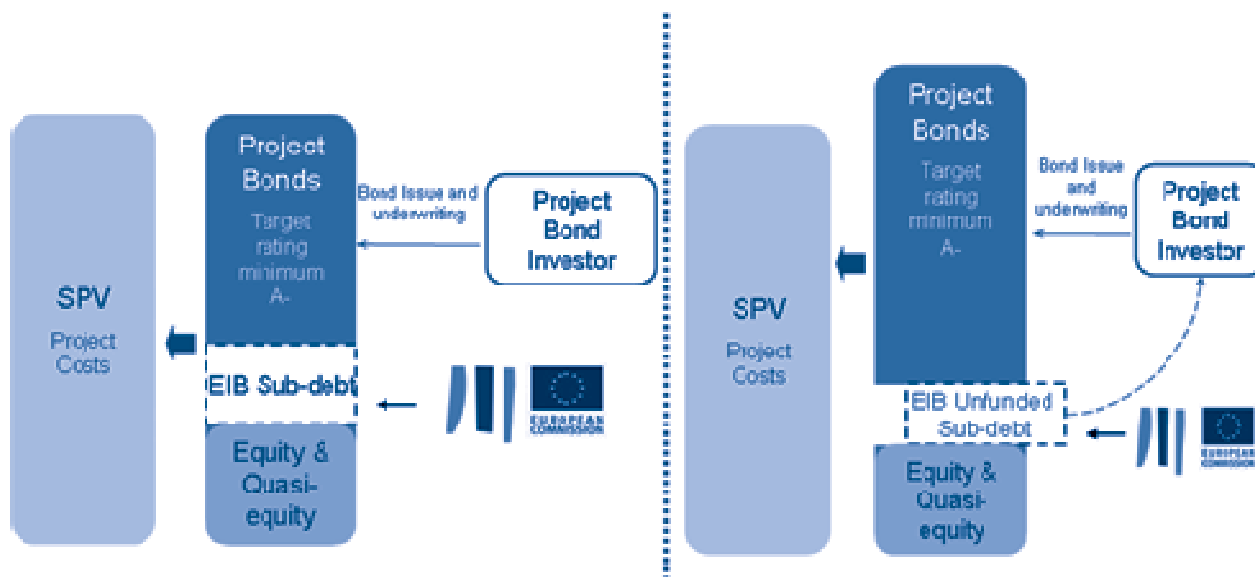
The credit enhancement of

The Project Bond initiative will use EU funds to attract additional private-sector financing for individual infrastructure projects via the issuance of

Project Bonds is intended to attract private sector financing

subordinated debt, based on unfunded or funded credit enhancement techniques (Figure 4). The principal idea behind Project Bonds is to provide EU support for project companies issuing bonds to finance large-scale infrastructure projects. The EC's key role will be risk-sharing with the EIB (or other financing partners), enabling it to provide guarantees or loans to support such bonds. To achieve this goal, no bond issuance will be required by Member State governments, the EU or the EIB.

Figure 4. Project Bonds



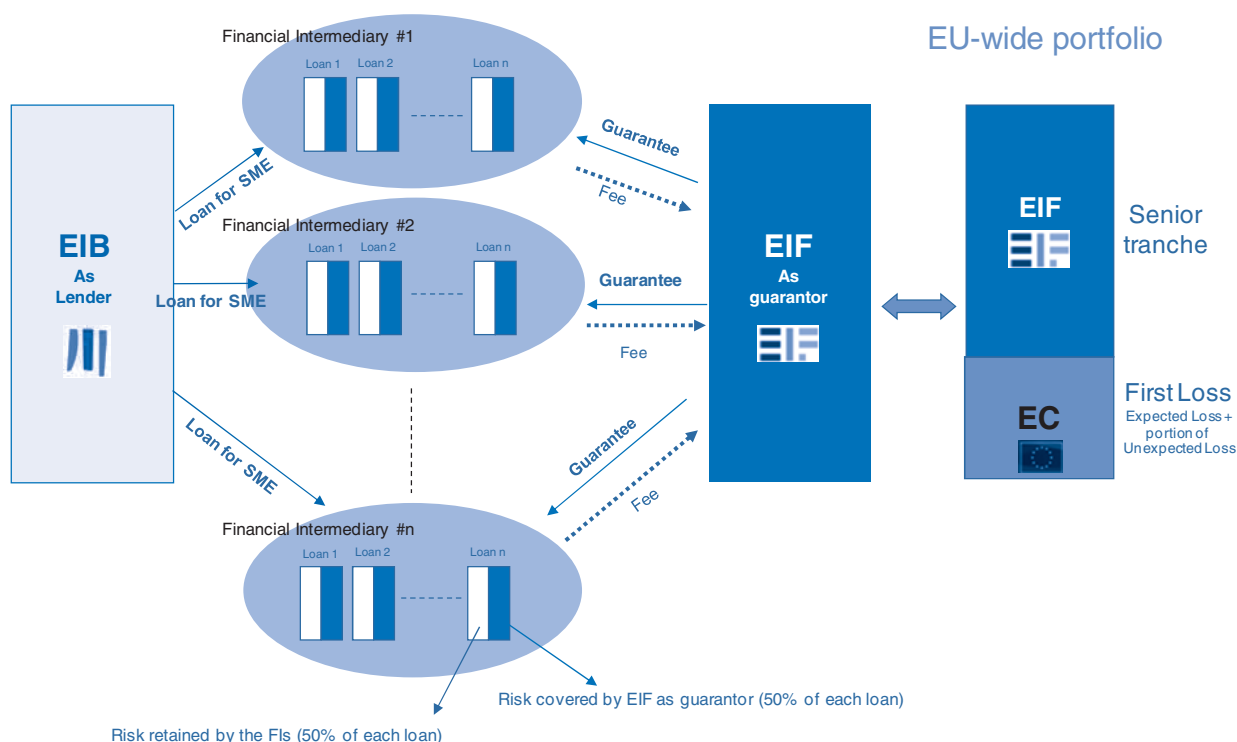
Source: EIB Group.

2. Risk sharing for innovation

Risk sharing in order to extend financing to small, innovative firms

A second initiative is risk-sharing instruments that support innovation: The objective here is to incentivise banks and other financial intermediaries to extend financing primarily to SMEs, but also to smaller mid-caps with significant research, development and innovation activities, through effective portfolio credit-risk transfer (via a guarantee). Figure 5 provides a diagrammed overview of the idea.

The aggregation of sub-portfolios at a European level would allow for diversification (EU-added value) that would otherwise have been unattainable at the national level, in addition to the EIF's usual risk-taking. The guarantees provided by the EIF through such instruments would provide significant economic-risk coverage for the participating financial institutions.

Figure 5. Basic structure of risk-sharing products to support innovation

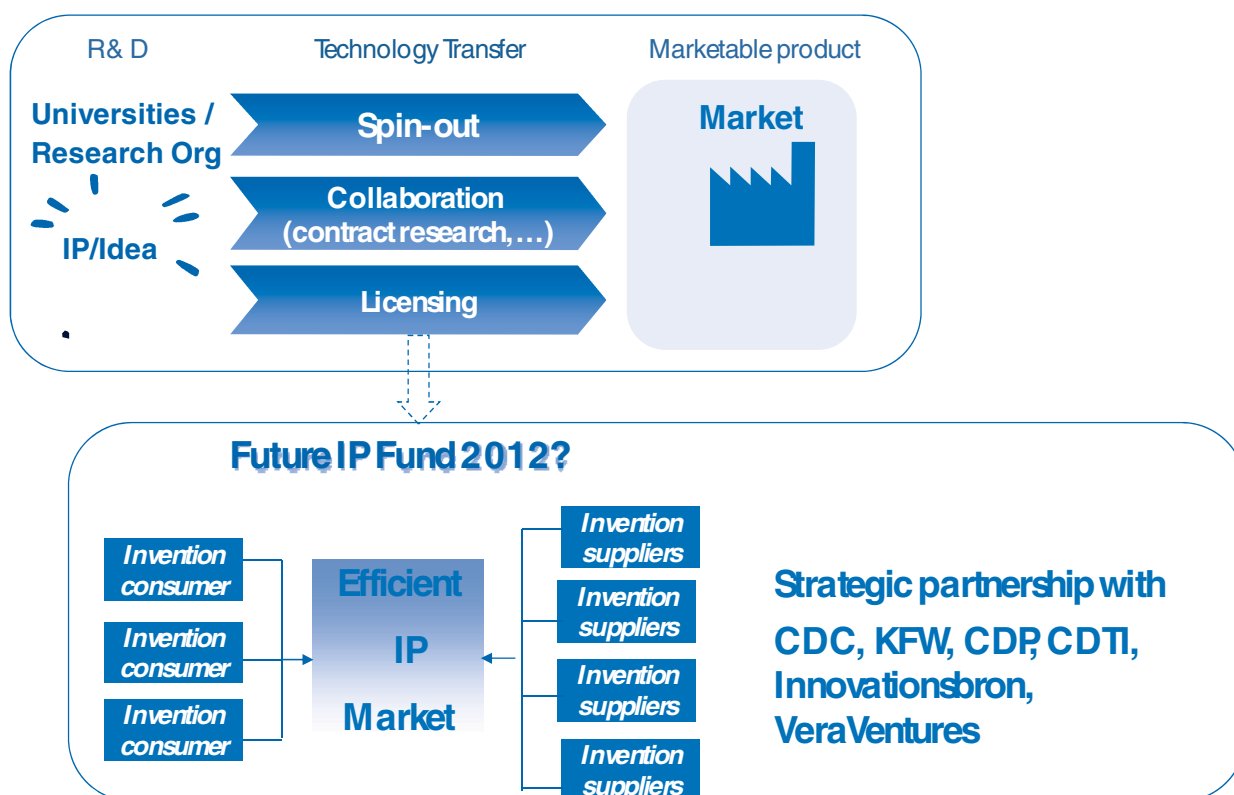
Source: EIF.

3. Intellectual Property (IP) Financing

The strategic partnership investment fund should act as catalyst for the European IP market

During the past several years, the EIF's Technology Transfer (TT) activities have supported the commercialisation of research innovations. A third initiative, which we exemplify below, is related to these TT and IPR (Intellectual Property Rights) activities. The idea is the creation of a strategic partnership⁸ to fund IP and to play a catalytic role in the European IP market at a crucial time in its development. The IP fund would provide European universities, research laboratories, innovative SMEs and corporations a viable mechanism for monetising their inventions. The design of the IP fund is based on the assumption that by gathering a large number of patents it will be possible to establish IP clusters, which are increasingly necessary for large companies as well as SMEs developing innovative products and services. The IP fund will invest in patents, often by licensing the IP as well as the right to sub-license, while in other cases it will acquire the IP outright. The fund would then regroup patents in clusters and license these to end users, possibly with a focus on allowing SMEs access to the IP, and where appropriate, act as an efficient channel for EU research to reach the marketplace.

Figure 6. Diagram of EIF's TT and IP activities



Source: EIF.

IV. Concluding remarks

To conclude: we have shown that the financing of business, innovation and green growth faces significant challenges in regard to accessing venture and equity capital, but also in regard to debt financing.

Financing growth with public support to crowd-in private capital via new products and instruments

In this context, public financing is very important, but it is just as important to realise that public support alone cannot be the only solution – it needs to play a catalytic role to attract private financing and to crowd-in private investors. Moreover, public financial support cannot remove the risk associated with innovation activity at the firm level – and it should not attempt to do so; however, public financing can be used to make the innovation phase more attractive to private investors. Innovation takes place in markets, and the market participants know best where the needs are and where technological developments are leading.

There is intensive collaboration between the EIB Group and the European Commission regarding the design of financing products and instruments in context of the Europe 2020 strategy. Moreover, there is intensive co-operation between the EIB Group, Member States, and national operators in order to achieve subsidiarity, on the one hand, and European Added Value on the other.

The bottom line: we need innovative solutions to finance innovation

In order to create a better environment for financing business, innovation and green growth, there need to be new breakthroughs and demand-driven approaches – keeping in mind that it is impossible to design “catch all” instruments. We could even say we need innovative solutions to finance innovation (in the sense of Peter Drucker that innovation is the change that creates a new dimension of performance).

In this article, we exemplified three different approaches targeting project finance, SMEs’ innovation activities, and Intellectual Property; all of them require significant financial engineering and are important steps toward moving away from grant-driven support.

Notes

1. Eurostat (2010).
2. European Commission (2009).
3. For the sake of example, we briefly focus here on financing issues in Private Equity/Venture Capital. As mentioned earlier, there are also many financing issues in regard to the debt market (drop in loan growth to the private sector by banks, the tightening of lending conditions, etc), which we cannot cover here in detail. For detailed information see for example the ECB’s bank-lending surveys (<http://www.ecb.int/stats/money/surveys/lend/html/index.en.html>) or ECB (2011).
4. This section is based on Kelly (2011).
5. The EIF plays a crucial role in the European VC market; it provided around 8% of total VC funding, and 37% of the funding provided by government agencies in 2009.
6. In this article, we cannot provide an overall picture of all the financing solutions of the EIB Group (and the related impact); hence, we refer the reader to the respective web pages for more detailed information: www.eib.org and www.eif.org. An overview of the SME-related activities of the EIB Group can also be found in United Nations (2011).
7. OECD (2010), p. 36.
8. Currently, the members of the partnership are CDC (France), CDP (Italy), CDTI (Spain), EIB Group, Innovationsbron (Sweden), KfW (Germany), VeraVentures (Finland).

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Financing Future Growth: The Need for Financial Innovations

by

Zvi Bodie and Marie Brière*

Attracting long-term investors from the private sector or in public-private partnerships for stable long-term investment in the innovative sectors and industries needed to generate sustained growth is crucial. Long-term investors want assets that generate regular cash flows, often linked to inflation. While equities seem today less appropriate for long-term investors' needs, particularly in the context of the recent regulatory changes, inflation-linked bonds, very-long dated conventional bonds, project bonds or specific derivatives better meet their requirements. It seems highly likely that the expansion and increasing regulation of long-term investors in both developed and emerging countries will trigger the development of new financial instruments compatible with long-term investment. While long-term investors are the natural sources of growth financing, they are not necessarily capable of assuming all the associated risks. Establishing and/or developing national or supranational institutions that can partly assume or at least structure some of these risks and thus offer end-investors the products they need is therefore essential. Strict regulation of the new markets arising from this process will also be vital.

JEL Classification: G1, G2, G3.

Keywords: Long-term investment, asset management, financial innovation.

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I. Wanted: long-term investors to finance growth

Attracting long-term investors from the private sector or in public-private partnerships

It is hard to see how stable and sustained growth can be obtained without long-term investment in the innovative sectors and industries needed for the future, such as technology, the environment and renewable energy. But where is that investment to come from? The answer necessarily differs from one country to another. In a great many countries, especially in the developed world, severe constraints on public spending that have worsened since the crisis prevent governments from undertaking such investment on their own. Hence the importance of attracting long-term investors from the private sector or in public-private partnerships. In other countries, many in emerging regions, governments do have enough financial leeway to invest and are actually doing so, notably via sovereign wealth funds (SWFs).

Long-term investors want assets that generate regular cash flows, often linked to inflation

Either way, the investors who today are capable of making a long-term commitment – whether public or private – are characterised either by very long-dated liabilities (e.g. insurance companies, pension funds and some SWFs¹) or by an absence of short-term financing needs (in theory, the case for many SWFs²). If we are serious about getting long-term investors to finance growth, we need investment products that meet their requirements. But what are those requirements? Leaving SWFs to one side – their constraints are usually less demanding – long-term investors such as pension funds, insurance companies and even households clearly want assets that generate regular cash flows, often linked to inflation.

Recent regulatory changes strongly reinforce these needs, making long term investors very sensitive to short term losses

Recent regulatory changes in the form of IFRS and Solvency II are reinforcing these needs, as they oblige pension funds and insurance companies to match their liabilities with their asset portfolio on a marked-to-market basis (Blome *et al.*, 2007). This means they have to adopt asset-liability management strategies, often with a fairly long duration. In practical terms, this matching process may involve using a fixed income portfolio (with all the difficulties that implies, as it is not always easy to find appropriate bonds to cover very long-dated liabilities³), derivatives, or a mixture of the two. The concept of using fair value to measure assets and liabilities while integrating all their risk factors is obviously a significant advance in these investors' balance sheet management. But it is not without problems of its own that can actually hamper long-term investment. Quarterly or semi-annual analysis of the market values of assets and liabilities makes no distinction between short-term and long-term investment; it can force investors to rebalance their portfolios in a procyclical manner to meet their regulatory requirements, when their long-term objectives ought to permit purchases of less liquid risky assets. In practice, therefore, even long-term investors become highly sensitive to short-term losses. If we consider that their main distinguishing feature should be their ability to hold on to assets for a longer period than other market participants, and even play a countercyclical role during crisis periods, we clearly see the need to reflect on less severe constraints compatible with these characteristics.

II. Creating instruments better suited to long-term investors

Equities are less appropriate for long-term investors' needs

In the circumstances just described, all assets whose future cash flows are highly uncertain (equities in particular) are much less appropriate for long-term investors' needs. They offer little protection against inflation risk (Bodie 1976, Erb *et al.* 1995, Ang *et al.* 2011) and are extremely risky even in the very long term (witness the vigorous debate on time diversification, set out by Samuelson, 1994). Long-term investors' requirements are mainly concentrated in long duration assets generating fixed cash flows, and that usually cover inflation risk. So what instruments need to be developed?

Inflation-linked bonds, very-long dated conventional bonds, project bonds or derivatives could meet long-term investors' needs

The inflation-linked bond market is an obvious candidate, fulfilling the needs of many long term investors (Barnes *et al.* (2010)). Limited essentially to government issuers at the moment, it could be extended to corporates as well. De Jong (2003) has shown that many pension funds have had to invest in equities because of a lack of liquidity on inflation-linked, markets which are often far too small to meet these investors' requirements (even if liquidity conditions tended to increase in the past few years, Brière and Signori, 2009). A second candidate would be very-long dated conventional bonds. Most bonds available on the market have maturities of shorter than 30 years, and of these issues the majority are dated shorter than 10 years. An alternative to very long-term issuance would be a derivatives market able to match certain liabilities, hence the CME's 2009 initiative in favour of an 'ultra T-bond future overlay', aimed explicitly at the longer duration of pension funds' liabilities. A 'project bond' market designed to finance very long-term infrastructure and other projects could also be developed. Ever since the financial crisis, private companies have struggled to arrange traditional investment projects financed by banks and insured by monolines, as they now look too risky for many investors. International institutions such as the European Investment Bank have a key role to play in overcoming this difficulty, as they can structure or bear part of the product risk offered to long-term investors and thereby offer them a more acceptable investment solution. Currently limited mainly to infrastructure, this market could be extended to other research and innovation-based projects.

Asset Managers should also make better distinction between funds offered to long-term or short-term investors

For their part, asset managers offer very few funds specially designed for long-term investors, and little distinction is made between investors' investment horizons. The liquidity requirements of short-term investors, who can withdraw from a fund at any time, may penalise longer-term investors, who are not subject to these constraints and may be able to forego daily liquidity. A clearer separation between the types of funds on offer could take better account of long-term investors' needs.

The growth of long-term investors may trigger financial innovations, but some public risk sharing and strict regulation will be required

In the 1970s and 1980s, pension funds' requirements were the driving force behind a large number of financial innovations and new products, such as zero-coupon bonds, inflation-linked bonds and certain derivatives (Bodie 1991). It seems highly likely today that the expansion and increasing regulation of long-term investors in both developed and emerging countries will trigger a similar response. But while long-term investors are the natural sources of growth financing, we should bear in mind that they are not necessarily capable of assuming all the associated risks. Establishing and/or developing national or supranational institutions that can partly assume or at least structure some of

these risks and thus offer end-investors the products they need is therefore essential. Strict regulation of the new markets arising from this process will also be vital.

Notes

1. We could add households to this list, as increasing longevity and changes in the population pyramid are creating problems for pay-as-you-go pension systems. To an increasing extent, individuals are going to have to make long-term investment choices that generate regular cash flows over a lengthy retirement period in order to make up for inadequate state pension schemes.
2. Although short-term financing requirements may appear during crises, when the government may requisition these funds' assets to finance short-term debt (Bodie and Brière, 2011).
3. Note also that many insurance companies' liabilities include embedded options that cannot be hedged with a pure bond portfolio.

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Promoting Longer-Term Investment by Institutional Investors: Selected Issues and Policies

by

Raffaele Della Croce, Fiona Stewart and Juan Yermo*

Institutional investors in OECD countries held over USD 65 trillion in assets at the end of 2009, and they are growing fast in emerging economies where Sovereign Wealth Funds still predominate as source of long-term capital. Concerns about short-termism and corporate governance have led to calls for more “responsible” and longer-term investment, especially by institutional investors that manage retirement savings. Long-term investors could provide benefits by acting counter-cyclically, engaging as active shareholders, considering environmental and other longer-term risks and by financing long-term, productive activities that support sustainable growth. This requires transformational change in investor behavior, i.e. a new “investment culture”, and various major policy initiatives. This article has been designed to stimulate discussion on the benefits of long-term investing for growth, sustainable development and financial stability, and regulatory and other barriers that impede such investment. Drawing on existing OECD work and guidelines, it also puts forward tentative policy proposals to encourage long-term investing, thus preparing the ground for further analysis and data collection to be undertaken by the OECD in this area.

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

Keywords: institutional investors, pension funds, life insurance, sovereign wealth funds, long-term investment, infrastructure, corporate governance , financial stability

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Raffaele Della Croce, Fiona Stewart and Juan Yermo are economist and principal economists, respectively, in the Financial Affairs Division of the OECD Directorate for Financial and Enterprise Affairs. A previous version of this article has been released as a discussion note prepared for the Eurofi G20 high-level seminar on the benefits and challenges of a long term perspective in financial activities, held in Paris on 17 February 2011, and served as background note for the at the OECD High-Level Financial Roundtable on *Fostering Long-Term Investment and Economic Growth* on 7 April 2011. This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein are those of the authors and do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

Executive Summary

*OECD
institutional
investors held
over USD 65 tn in
2009*

The main institutional investors in the OECD area – pension funds, insurance companies and mutual funds – held over USD 65 trillion at the end of 2009. Emerging economies generally face an even greater opportunity to develop their institutional investors sectors as, with a few exceptions, their financial systems are largely bank-based. The main institutional investors in these countries are Sovereign Wealth Funds, which held over USD 4 trillion at the end of 2009.

*Institutional
investors are
transforming
financial
systems...*

The growing influence of institutional investors has brought a transformational change in financial systems. Traditionally, these investors – and, in particular, pension funds, life insurers and mutual funds that operate in retirement savings systems – have been seen as sources of long-term capital with investment portfolios built around the two main asset classes (bonds and equities) and an investment horizon tied to the often long-term nature of their liabilities. Institutional investors also reduce reliance on the banking system, acting as shock absorbers at times of financial distress. In addition, the growth of these institutions has contributed to the development of capital markets, providing financing to companies and governments and helping to develop mechanisms for corporate control and risk management.

*...but there are
growing signs of
short-termism*

Despite this generally rosy picture, these supposedly long-term institutional investors are also recurrently being labelled as “short-termist”. Signs of such growing short-termism include the fact that investment holding periods are declining and that allocations to less liquid, long-term assets such as infrastructure and venture capital are generally very low and are being overtaken in importance by allocations to hedge funds and other high frequency traders. Other related concerns over the behaviour of institutional investors are their herd-like mentality which may sometimes feed asset price bubbles and their tendency to being “asleep at the wheel”, failing to exercise a voice in corporate governance.

*Features and
benefits of longer-
term investment
include:*

These concerns have led to calls for more “responsible” and longer-term investment among institutional investors, in particular pension funds, life insurers and mutual funds that operate in retirement savings arrangements. Such investment would share the following features and benefits:

*Patient,
counter-
cyclical capital*

- *More patient capital that acts in a counter-cyclical manner.* Given their long-term liabilities, institutional investors should in principle be concerned with long-term investment performance, providing and monitoring investment mandates that reflect such an investment horizon and holding onto their shares for long periods. They should also act in a counter-cyclical manner, continuing to invest in riskier assets and even seeking new investment opportunities at times of market weakness. By the same token, they should normally rebalance their portfolios when asset price bubbles develop, reducing exposure to such asset classes. Through such investment strategies institutional investors can promote financial stability, helping to correct speculative excesses and providing a buffer during a financial crisis.

*Engaged
capital*

- *An ongoing, direct engagement as shareholders and consideration of environmental and other longer-term risks in investment and risk management strategies.* Acting as responsible asset owners would ensure a better monitoring of company management, aligning the company managers’ incentives with the longer term interests of the company, and reducing the scope for corporate malfeasance and excessive leverage and other forms of unwarranted risk exposure among corporations. Responsible investors should also ensure that

they understand and integrate appropriately environmental risks, such as climate change, in their investment and risk management strategies, promoting long-term risk management in the companies that they invest in.

Productive capital

- *A more active role in the financing of long-term, productive activities that support sustainable growth, such as cleaner energy, infrastructure projects, and venture capital.* Such investments can drive competitiveness and support economic growth by increasing private and public sector productivity, reducing business costs, diversifying means of production and creating jobs. While investment in listed equities and corporate bonds already achieves some of this goal, unlisted, long-term investments such as infrastructure can avoid some of the pitfalls of the short-termism prevalent in public markets.

Policies needed to encourage long-term investing include:

Moving from the current mindset to a longer-term investment environment requires a transformational change in investor behaviour, that is, a new “*investment culture*”. The market, by its nature, is unlikely to deliver such a change. Hence, major policy initiatives in a variety of areas are needed. The report highlights the following:

Reforming the regulatory framework

- *Reforming the regulatory framework for institutional investors:* policymakers need to promote greater professionalism and expertise in the governance of institutional investors. Collaboration and resource pooling can also be encouraged in order to create institutions of sufficient scale that can implement a broader investment strategy and more effective risk management systems that take into account long-term risks. Regulators also need to address the bias for pro-cyclicality and short-term risk management goals in solvency and funding regulations, and relax quantitative investment restrictions to allow institutional investors to invest in less liquid, long-term assets.

Encouraging active shareholders

- *Encouraging institutional investors to be active shareholders:* policymakers should remove regulatory barriers to allow institutional investors to engage in active share ownership. They can also reduce the burden of active engagement (particularly for smaller investors) by encouraging collaboration via investor groups and can support national or international codes of good practice and issue guidance themselves of how they expect institutional investors to behave. In order to ‘nudge’ investors to follow such guidance, supervisors can shift the focus on their investigations, enquiring as to the turnover of funds, the length of mandates given to external managers, how fees are structured, and voting behaviour.

Supportive policy planning

- *Designing policy frameworks that are supportive of long-term investing:* the general investment policy environment for long-term investments often lacks transparency and stability. Government support, such as long-term policy planning, tax incentives and risk transfer mechanisms may be required to engage investors in less liquid, long term investments such as infrastructure and venture capital.

Addressing knowledge gaps and behavioural biases

- *Addressing knowledge gaps and behavioural biases:* retail investors need support to help them meet their long-term investment goals. Regulators should also become better acquainted with long-term risks and new financial instruments. In order to achieve these objectives, governments and other stakeholders should support information collection, public awareness and financial education campaigns that promote long-term investment and risk management.

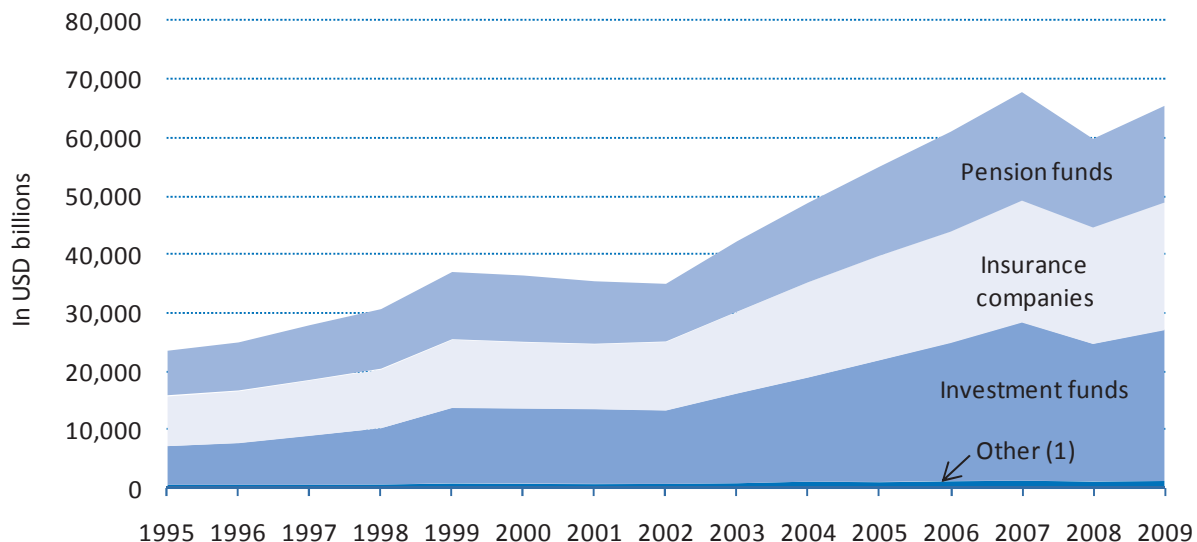
I. Benefits of long-term institutional investors

The expansion of institutional investors is set to continue

The main institutional investors in the OECD, pension funds, insurance companies and mutual funds, held over US\$65 trillion at the end of 2009 (see Figure 1).¹ Despite the recent financial crisis, the prospect for future growth is unabated, especially in countries where private pensions and insurance markets are still small in relation to the size of their economies. Emerging economies generally face an even greater opportunity to develop their institutional investors sectors as, with few exceptions, their financial systems are largely bank-based. The main institutional investors in these countries are Sovereign Wealth Funds, which held over US\$4 trillion at the end of 2009. Whether the growth of pension funds materialises also in these countries will depend on some key policy decisions, such as the establishment of a national pension system with a strong funded component, which is nowadays a common feature in most OECD countries.

Figure 1. Assets held by institutional investors in the OECD area

In USD billion, 1995-2009



(1) Other forms of institutional savings include foundations and endowment funds, non-pension fund money managed by banks, private investment partnership and other forms of institutional investors.

Source: OECD Global Pension Statistics and Institutional Investors databases, and OECD estimates.

Some, like pension funds and life insurers, are in principle natural long-term investors

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

made, further increasing the duration of pension fund liabilities. Life insurers also tend to have long-term liabilities, especially major providers of annuities and similar retirement products. The corresponding long-term investment horizon in principle allows such investors to take advantage of any ‘illiquidity’ premium which long-term investments such as infrastructure and venture capital should deliver. Holding investments over the longer term can also reduce turnover within portfolios and thereby costs; this being an important consideration for pension funds since a 1% charge over 40 years can reduce eventual pension income by around 20%.

Their growth has contributed to capital market development

Institutional investors also reduce reliance on the banking system, acting as shock absorbers at times of financial distress. The growth of these institutions has also contributed to the development of capital markets, providing financing to companies and governments and helping to develop mechanisms for corporate control and risk management. At the same time, individual investors have been able to pool their savings in products where investment risks can be diversified and insurance products that protect them from a variety of life related and property risks.²

Yet, they are often labelled as short-termist

Despite this generally rosy picture, these supposedly long-term institutional investors are also recurrently being labelled as “short-termist”, of feeding asset price bubbles with a herd-like mentality and of being “asleep at the wheel” as company managers abuse their power to the detriment of shareholders. One key feature of institutional investors – especially the smaller ones – is that they rely on asset management firms for a large part of their investments. Such a trend has been intensified in recent years with the move to increase exposure to so-called alternative investments, such as hedge funds and private equity funds. Control over external asset managers is often focused on short-term performance monitoring, leaving day-to-day investment decisions in the hands of professionals who may not always have the best interest of the ultimate asset owners in mind.

Long-term investing involves...

These concerns have led to calls for more “responsible” and longer-term investment among institutional investors, in particular pension funds, life insurers and mutual funds that operate in retirement savings arrangements. Such investment would share the following features and benefits, which are described in detail in Section II:

...patient capital

- *More patient capital that acts in a counter-cyclical manner.* Given their long-term liabilities, institutional investors should in principle be concerned with long-term investment performance, providing and monitoring investment mandates that reflect such an investment horizon and holding to their shares for long periods. They should also act in a counter-cyclical manner, continuing to invest in riskier assets and even seeking new investment opportunities at times of market weakness. By the same token, they should normally rebalance their portfolios when asset price bubbles develop, reducing exposure to such asset classes. Through such investment strategies institutional investors can promote financial stability, helping to correct speculative excesses and providing a buffer during a financial crisis.

...engaged capital

- *An ongoing, direct engagement as shareholders and consideration of environmental and other longer-term risks in investment and risk management strategies.* Acting as responsible asset owners would ensure a better monitoring of company management, aligning the company managers' incentives with the longer term interests of the company, and reducing the scope for corporate malfeasance and excessive leverage and other forms of unwarranted risk exposure among corporations. Responsible investors should also ensure that they understand and integrate appropriately environmental risks, such as climate change, in their investment and risk management strategies, promoting long-term risk management in the companies that they invest in.

...productive capital

- *A more active role in the financing of long-term, productive activities that support sustainable growth, such as cleaner energy, infrastructure projects, and venture capital.* Such investments can drive competitiveness and support economic growth by increasing private and public sector productivity, reducing business costs, diversifying means of production and creating jobs. While investment in listed equities and corporate bonds already achieves some of this goal, unlisted, long-term investments in infrastructure, low carbon projects and venture capital can avoid some of the pitfalls of the short-termism prevalent in public markets.

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

II. Barriers to institutional investors acting over the long-term

1. The investment management process

Changes in the strategic asset allocation process...

Institutional investors generally rely on a strategic investment allocation that ensures regular flows to different asset classes and hence a certain stability in the allocation of capital. From a performance perspective, the strategic allocation is the most important decision for investors and needs to be reviewed regularly, usually once a year. Changes in the strategic allocation, however, will normally be less frequent than that. Some investors also engage in ongoing, short-term departures from such allocations, making so-called tactical bets, in order to attempt to benefit from what are perceived as mispricing of assets relative to fundamentals. Such differences in investment activity also apply at the level of individual securities, with one passive strategy involving index-tracking and the other – active – involving security selection and market timing.

...are leading to indexing and hedge fund investment

Following the crisis, many institutional investors have become dissatisfied with the traditional, strategic approach to investing – which tends to have involved closet ‘index’ investing but with ‘active’ management charges. This explains the growing interest in hedge funds, which by construction rely on

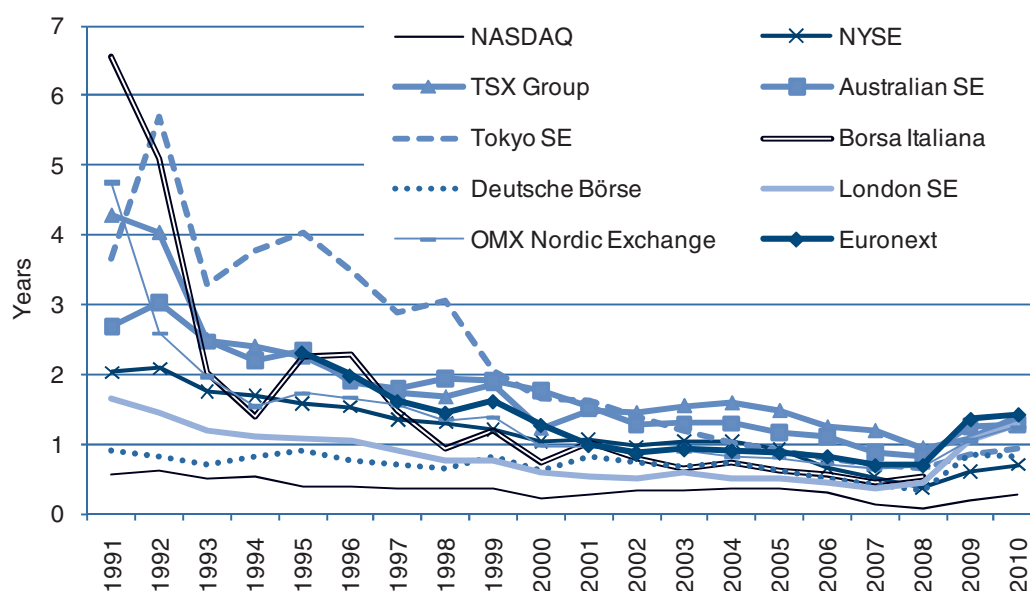
tactical, active investment management to try to deliver genuine ‘alpha’ returns, or performance over and above an index. At the same time, investors are making greater use of passive investment for the more traditional parts of their portfolios, capturing market index returns at low cost. In their current form, neither style is conducive to long-term, active, responsible share ownership on the part of institutional investors.

...which results in declining holding periods

One result of this trend is the declining investment holding period observed in the last few decades in most OECD stock markets, which has gone hand in hand with the growing market presence of institutional investors.³ As shown in Figure 2, the average holding period has fallen between one and three years in selected OECD stock exchanges over the last twenty years. Looking further back, the drop is even greater. For instance, in the 1980s, the average holding period in the New York stock exchange was over 5 years, compared to 5 months today.

While such trend is partly accounted by the growing role of some niche investors, such as hedge funds, there is evidence that even supposedly long-term investors such as pension funds end up having portfolio turnover much greater than originally intended.⁴ Furthermore, pension funds are gradually becoming the most important investors in hedge funds, so they also contribute indirectly to the rapid increase in the frequency of trading observed in recent years.

Figure 2. Average Holding Period - Selected Exchanges



Note: Average holding periods are calculated as market capitalisation (average between two end-of-year data) divided by the value of share trading. Data for Borsa Italiana end in 2009 after its merger with London SE to form the London Stock Exchange Group; from 2010, London SE data are consolidated into London SE Group after merger with Borsa Italiana in 2010.

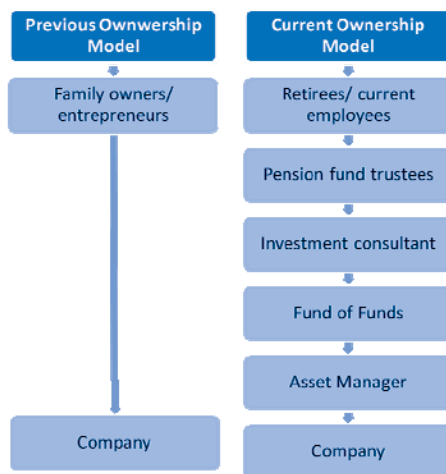
Source: OECD, World Federation of Exchanges (2010a,b).

Agency problems are one cause of short-termism

There is a variety of reasons for this growing short-termism in investment management. For insurers, increasing competition, demutualisation and the consequent investor pressure are key factors leading them to focus on short-term

profitability and investment returns. For pension funds, the cause is primarily an agency problem.⁵ Because of their lack of in-house expertise, most pension funds - the main exceptions being some of the larger ones - rely on external asset managers and consultants for much of their investment activity. However, poorly governed institutions do not make good monitors of third parties. Pension funds may therefore be failing to direct and oversee external managers effectively and look after the long-term interests of their beneficiaries. A stylised representation of the investment management process is shown in Figure 3, which compares the traditional asset ownership model of capitalism based around family ownership and entrepreneurs with the modern version with a myriad of management layers each involving some form of delegation and hence of potential agency problems.

Figure 3. Asset ownership and management models



Source: Wong (2010).

Performance evaluations and mandates are generally short-term based

External asset managers generally have mandates no longer than three years and ongoing performance evaluations. In-house managers at pension funds and other institutional investors also have performance-based remuneration that is often based on short time periods. As a result there is pressure to take short-term risks in order to beat market benchmarks and peers. If such bets pay off, managers may be rewarded with extensions of their mandates and higher remuneration.⁶

Securities lending contributes to short-termism

Institutional investors also contribute indirectly to short-termism via some common investment activities, such as securities lending, where the funds' securities are lent to other investors, often hedge funds, who use them to support their trading strategies, sometimes to take bets against those same shares that they have borrowed.⁷ Managers of Exchange Trade Funds (ETFs), products increasingly used by institutional investors for passive investment, also rely on securities lending to achieve low fees. Investors may therefore be inadvertently contributing to speculative trading activities in the very securities that they own.

Insufficient investor oversight over portfolio turnover and costs

Compounding this problem, some institutional investors may be dedicating insufficient attention to issues such as portfolio turnover or costs, failing to provide clear guidelines to their managers about the investment horizon and how that fits into the process from the outset. Short-termism is reinforced by

behavioural factors, such a general tendency among investors to focus on recent past performance as a proxy for future performance. This “recency bias”, which is well-documented in the behavioural finance literature, continues despite the many caveats and warnings in the asset managers’ marketing brochures. Given the complexity of investing, uncertainty over the future, and the difficulty in discerning useful information from noise, investors often rely on such heuristics or rules of thumb for their investment decisions.

Regulations may have intensified the short-term bias

Regulations sometimes also exacerbate the focus on short-term performance, especially when assets and liabilities are valued referencing market prices. Quantitative, risk-based funding regulations are used in combination with mark-to-market valuations for pension funds’ balance sheets in some countries such as Denmark, Finland and the Netherlands. All three countries experienced instances of pro-cyclicality in pension fund investments during the 2008 financial crisis. While in Denmark and Finland regulatory changes were made to avoid fire sales of equities, mortgage bonds and other securities, pension funds in the Netherlands fell into a vicious circle as a result of the use of the spot swap curve to value their liabilities. Their heavy demand for long-term swaps put downward pressure on the long swap rate, which further intensified this demand.⁸ Given the growing trend towards market consistent valuations (driven by, among other factors, a need for greater transparency over risk exposures), there may be a need for longer funding recovery periods to avoid such situations in the future.

Similar concerns have also been raised that the introduction of Solvency II for insurers in the European Union – expected in 2013 - could heighten the procyclical nature of investment strategies among these institutions. However, various measures have been taken that should help mitigate these potential effects, including a dampener on equity risk (Pillar I) that was introduced precisely to avoid that insurers divest of equities in times of crises. Solvency II is also likely to have an impact on insurers’ strategic asset allocation, though there are different opinions on the ultimate direction of the impact. Some long-term assets like long-term government bonds should become more attractive, while others such as infrastructure and other less liquid long-term assets may be penalised.

2. Lack of corporate engagement and the management of long-term risks

Institutional investors are critical players in corporate governance

The 2004 revision of the *OECD Principles of Corporate Governance*⁹ outline the importance of institutional investors as active shareholders:

“The effectiveness and credibility of the entire corporate governance system and company oversight will, therefore, to a large extent depend on institutional investors that can make informed use of their shareholder rights and effectively exercise their ownership functions in companies in which they invest.”

The OECD Principles of Corporate Governance call

While the OECD Principles “do not seek to prescribe the optimal degree of investor activism,” they nevertheless suggest that many investors are likely to conclude in considering the costs and benefits of exercising their ownership rights that positive financial returns and growth can be obtained by undertaking a

*for active
ownership*

reasonable amount of analysis and by using their rights (Principle II.F).¹⁰

Given institutional shareholders are now the main owners of shares in many equity markets, with pension funds playing a major role, this oversight role is increasingly important. Hence, in the wake of the economic and financial crisis of 2008/2009, *attention* has turned to how effective these shareholders were in overseeing the boards of the companies they invest in.

Part of the post-mortem on the crisis has focused on the failure of such shareholders – the ultimate overseers of financial firms – to prevent some of the most glaring corporate governance failures (from excessive risk concentration and high leverage to misaligned salary incentives). To quote the Dutch Minister of Finance: “*We cannot avoid asking ourselves what you, shareholders, have done to prevent and manage the crisis. Unfortunately, and I know you don’t like to hear this, the answer is almost nothing.*”¹¹ Lord Myners, author of a previous review of institutional investors and corporate governance in the UK, has voiced similar opinions.¹²

The OECD’s review of corporate governance and the financial crisis¹³ identified the lack of active participation on the part of institutional investors at a key weakness in the global system of corporate governance. The OECD’s paper concludes that, aside from some impediments still existing in some markets – such as share blocking, taxation issues etc. – shareholders have been largely passive and reactionary in exercising their rights, in many cases voting in a mechanical manner relying on proxy voting advisers and generally failing to challenge boards in sufficient number to make a difference.

*Consideration of
ESG factors is also
increasingly called
for*

A related aspect of engagement is the extent to which institutional investors consider long-term risks in their investment strategies, in particular environmental factors. While there has been much interest in “responsible investment” in recent years by pension funds and other institutional investors, most are far from fully and comprehensively integrating environmental, social and governance (ESG) factors in their investment strategies. At the international level, the drive for responsible investment has been led by organisations such as the OECD with the Guidelines for Multinational Enterprises and the UNEP Finance Initiative, which helped develop the UN Principles for Responsible Investment. The incorporation of ESG factors in investment strategies is supported by the Global Reporting Initiative, which has developed standards for company reporting in this area. Some regulators have introduced requirements for institutional investors to disclose whether ESG risks are considered in the investment strategy, but no regulator has gone as far as actively requiring their integration in risk management strategies. Similarly, risk rating agencies are only slowly waking up to the importance of these risks for companies’ financial health.

3. Problems with investment in less liquid, long-term assets

*In principle,
institutional
investors should*

In principle the long-term investment horizon of pension funds and other institutional investors should make them natural investors in less liquid, long-term assets such as infrastructure and venture capital, sectors which have a clear,

be natural investors in infrastructure and venture, but allocations are generally low

positive impact on economic development and growth. Pension funds and other institutional investors are active in the venture capital market, particularly in the United States, while in Europe and other regions, institutional investors tend to focus more on later stage financing deals and buy-out funds. Interest in infrastructure as a distinct asset class is more recent, with the most experienced investors in this area (those based in Australia and Canada) starting operations about ten years ago. This slower take-off of infrastructure as an investment is largely due to the fact that this sector has relied mainly on public sources of financing. However, there is an expectation that future infrastructure investments will rely to a much greater extent on the private sector.

The OECD general definition of infrastructure is the system of public works in a country, state or region, including roads, utility lines and public buildings. Infrastructures are not an end in themselves. Rather, they are a means for ensuring the delivery of goods and services that promote prosperity and growth and contribute to quality of life, including the social well-being, health and safety of citizens, and the quality of their environments.¹⁴

The OECD report on Infrastructure to 2030 published in 2006/2007, estimated global infrastructure requirements to 2030 to be in the order of US\$ 50 trillion. It is estimated that adapting to and mitigating the effects of climate change over the next 40 years to 2050 will require around USD 45 trillion or around USD 1trillion a year.¹⁵

Private financing of infrastructure needs will be increasingly required

In many countries such levels of investment cannot be financed by the public pursue alone. The impact of the financial crisis exacerbated the situation leading countries with fiscal deficits and high debt levels to announce austerity packages. Also, traditional sources of private capital such as banks have restrained credit growth since the financial crisis and may be further constrained in the coming years when new regulations (Basel III) take effect. The result has been a widespread recognition of a significant infrastructure gap and the need to explore alternatives to traditional provision of assets.

Pension funds are increasingly looking at infrastructure to diversify their portfolios. Infrastructure investments are expected to produce predictable, inflation adjusted and stable cash flows over the long term, matching their existing liabilities and reducing their portfolio volatility. Pension funds and other institutional investors are also creating discussion fora and investment partnerships to foster investments in clean energy and climate change mitigation and adaption.¹⁶

Despite these apparent links, so far institutional investment in infrastructure has been limited. It has been estimated that less than 1% of pension funds worldwide are invested in infrastructure projects, excluding indirect investment in infrastructure via the equity of listed utility companies and infrastructure companies.¹⁷

Some regulations discourage such long-term

In addition to the standard difficulties of any novel asset class, there are a variety of obstacles impeding greater involvement by institutional investors in the financing of infrastructure and clean energy projects.

investments

- First, the investment regulations of institutional investors sometimes discourage allocations to unlisted instruments, which is often the most efficient and longer-term way to invest in such asset classes.
- Second, investor capability may be thwarted by governance weaknesses and insufficient scale to engage in such investments.
- Third, the general investment policy framework in the country may not be conducive to the development of opportunities in this realm. For instance, public private partnerships in the infrastructure sector have been concentrated in a few countries such as the United Kingdom.

Venture capital is another potential source

Another sector that in principle should appeal to long-term investors is venture capital. The financing of new ventures is an inherently high risk activity, but diversification can be used effectively to improve the risk-return trade-off for institutional investors. Venture capital is an essential source of finance for creating and ensuring economic growth and innovation. Various research studies clearly show how venture capital can transform innovations into broadly-based economic gains and societal benefits. For example, it is estimated that almost 20% of US GDP is generated by companies built by venture capital such as Intel, Apple and Google.

Since the crash of the technology bubble, following numerous years of disappointing returns many investors exited the industry leading some to claim that the venture capital model is broken. However, given the total impact venture capital could make on long-term economic growth, governments still consider the development of venture capital as a policy priority.

III. Main policy actions to promote long-term investments

1. Reforming the regulatory framework for institutional investors

Regulatory reform can contribute to changing the rules of the game, facilitating a transition to a financial system where institutional investors and the asset management industry on which they depend operate on a longer-term basis.

Build the expertise – the investor capability

- *Build the expertise – the investor capability:* Informed, knowledgeable investors are the basis for good governance and a proper alignment of incentives. Raising the bar of governance among institutions such as pension funds is essential to create the right incentives among asset managers to better look after the long-term interest of beneficiaries. Investing in less liquid, longer term asset such as infrastructure and venture capital calls for specific skills and appropriate staff in place at all levels – from fund managers to trustees. Although investors often use specialist consultants, they still require a good understanding of the products in which they invest and an effective system to monitor the strategies and activities of their asset managers. This is even more the case if investors want to follow the direct investment route (or invest in new-build projects). Relevant international guidance in this regard

include the *OECD Guidelines for Pension Fund Governance*.

Foster collaborative strategies and resource pooling

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

Adjust the prudential regulatory framework towards long term investment

- *Adjust the prudential regulatory framework towards long term investment:* In order to promote and sustain longer term investments, changes in the regulatory framework are needed. Regulators need to address the bias for pro-cyclicality and short-term risk management goals in solvency and funding regulations applied to insurers and pension funds. In countries that still use a quantitative approach to investment regulation, evaluations should be made on a regular basis to allow institutional investors to invest in less liquid assets, such as unlisted infrastructure and venture capital. Regulators should also consider the integration of long-term investment risk factors (in particular, environmental risks) in institutional investors' risk management strategies, as recommended in the *OECD Guidelines for Pension Funds Risk Management*.

Create the necessary preconditions for the development of institutional investors

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

2. Encouraging institutional investors to be active shareholders

Encouraging active share ownership is also a way to foster longer term investment by institutional investors.

Regulatory

- *Regulatory Support:* In order to allow institutional investors to engage in active share ownership governments should first check that there are

Support

no regulatory barriers to them doing so (such as share blocking / taxation issues/ takeover issues / rules against collaboration). Practical encouragements could also be put in place (such as allowing electronic voting of shares), or regulation could be more prescriptive (e.g. requiring institution investors to disclose their voting policies and records, as well as their governance and conflict of interest policies, as recommended by the *OECD Principles of Corporate Governance*).¹⁸ Other incentives, such as giving multiple voting rights to long-term investors, could also be considered.

Collaboration and professional services

- *Collaboration and professional services:* The burden of active engagement can be reduced (particularly for smaller investors) by encouraging collaboration via investor groups (such as the International Corporate Governance Network). Alternatively, funds could use activist fund services or proxy voting firms, keeping in mind that their advice should be free from material conflicts of interest that might compromise the integrity of their analysis or advice, as recommended by the *OECD Principles of Corporate Governance*.¹⁹

Guidance on behaviour expected from institutional investors

- *Guidance on behaviour expected from institutional investors:* Financial regulators and supervisors also have a role to play in encouraging long-term, active investment. They can support national or international codes of good practice (such as the Stewardship Code which is gaining widespread support in the UK) and issue guidance themselves of how they expect institutional investors to behave. In order to 'nudge' investors to follow such guidance, supervisors can shift the focus on their investigations, enquiring as to the turnover of funds, the length of mandates given to external managers, how fees are structured, voting behaviour etc. If supervisors believe that investors may be acting in too short-term a manner, they could increase their oversight of the institution. Such actions could help address the agency problem, making institutional investors aware of their fiduciary duties and that they are the ultimate owners of the companies in which they invest, with the consequent responsibilities which that entails. Supervisory authorities could also help to foster a focus on longer-term performance by releasing or requiring comparative data on returns over longer time periods.

3. Government support for long-term investments

Governments can shape the general investment policy environment to promote long-term investments and attract institutional investors to key sectors such as infrastructure, green energy projects, and venture capital. They can also support directly the management of long-term risks through information dissemination and the issuance of long-term instruments:

Supportive tax environment and policies to promote foreign direct

- *Supportive tax environment and policies to promote foreign direct investment:* Investors' decisions are conditioned by a variety of policies that affect how companies finance their operations and how they expand overseas. In particular, tax policies have created a bias for debt over equity that should be corrected. Foreign direct investment is another

investment

important component of long-term investment and should be encouraged. The OECD has been promoting transparent and open markets for foreign direct investment, including through binding rules in the *OECD Code of Liberalisation of Capital Movements*.

Government issuance of long-term instruments

- *Government issuance of long-term instruments:* Policymakers should also help investors address long-term risks, such as longevity by supporting the development of transparent and reliable indices and other aspects of the market infrastructure. Government can also issue long maturity and inflation-indexed bonds that facilitate long-term risk management by investors.

Transparent environment for infrastructure investment

- *Transparent environment for infrastructure investment:* Investment in infrastructure is a relatively new investment which entails a new set of challenges for institutional investors. Shortage of objective information and quality data make difficult to assess the risk of infrastructure deals. In addition, the financial crisis - which had significant impact on the performance of many infrastructure deals - greatly damaged the relationship and trust between the infrastructure industry and investors. As a consequence many institutional investors have a negative perception of the infrastructure value and are not considering investment in the sector in the short medium term, unless market conditions change. Governments should promote a more transparent investment environment as recommended in the: *OECD Principles for Private Sector Participation in Infrastructure*. Governments could also improve transparency and understanding of the sector through independent data collection and common performance measures, whilst international organizations (such as the OECD) can play a role through creating a platform for dialogue between investors, the financial industry and governments.

Stable and accessible programme of infrastructure projects and public-private partnerships (PPPs)

- *Stable and accessible programme of infrastructure projects and public-private partnerships (PPPs):* The limited number and sporadic nature of investment opportunities in the infrastructure sector are perceived as the main barrier preventing investors from including infrastructure in their long-term investment strategy. Investors need a better sense of the government's infrastructure plans beyond the political cycle. To the extent that they do not already exist, governments should support the development of national long-term strategic policy frameworks for individual key infrastructure sectors, including renewable energy and other low carbon initiatives. Governments also need to create an ongoing supply of investment opportunities through public-private partnerships. The regulatory environment for such initiatives should also be stable, helping to cement the credibility of the government and the trust of institutional investors in the government's commitment to pre-set rules.

Understanding the needs of institutional investors – providing

- *Understanding the needs of institutional investors – providing appropriate investment incentives and risk transfer opportunities:* Governments should seek to better understand the investment needs and requirements of institutional investors and assess the scope for promoting the “right” investment opportunities. For instance, a common

*appropriate
investment
incentives and
risk transfer
opportunities*

problem appears to be a mismatch between the desired risk/return profiles and investment horizon of pension funds when investing in infrastructure and the opportunities offered in the market. Through appropriate financial incentives (for instance, tax incentives and feed-in tariffs) and risk transfer mechanisms (such as guarantees and first equity loss on investments), projects should be structured as attractive investment opportunities for investors. Governments should also create the appropriate conditions to attract institutional investors to venture capital (financial market infrastructure, favourable regulations, and, where appropriate, seed capital and financing vehicles).

4. Financial education and consumer protection regulation

As a result of the ongoing risk transfer to individuals in both the insurance and private pensions sectors, investment strategies are increasingly affected by the behaviour of individual investors. Individual investors are often less well informed than institutional ones and subject to the same if not bigger behavioural problems described earlier. Policy action with respect to financial education and consumer protection regulation is vital to help investors make better investment decisions that are in line with their long-term goals.

Generally, there is a need to change the investment culture from short-termism towards longer-term productive investment. Policymakers need to act to address the specific needs of retail investors via three main routes:

*An appropriate
framework*

- *An appropriate financial consumer protection framework* can ensure that an optimal level of transparency and redress mechanisms are in place in the financial sector thereby promoting consumers' confidence *vis-à-vis* mainstream institutional investors.

*Tailored
programmes*

- *Tailored financial education and awareness strategies programmes* can in addition help consumers better understand their various needs for long-term saving and relevant existing insurance and pension products to address these needs. Such programmes can also raise awareness in the general public about the benefits of longer-term investing. In turn, retail investors may start putting pressure on the institutional investors that represent them, either through their voice (for example, as member-nominated pension fund trustees) or actions (their investment choices).

*Default
mechanisms*

- *Default mechanisms* supported by judicious financial education programmes may be put in place to compensate the low level of financial awareness at least in the short term. For instance, life cycle investment strategies, where investments become increasingly conservative as the member approaches retirement are increasingly being used as default investment rules in retirement savings plans.

Notes

1. The broader class of institutional investors include other entities such as public investment funds, Sovereign Wealth Funds, endowments and foundations, hedge funds and private equity funds. Hedge funds and private equity funds also act as investment vehicles for other types of institutional investors.
2. For a more detailed discussion of the benefits of long-term investing see World Economic Forum (2011).
3. The 2004 review of the OECD Principles of Corporate Governance reflect the fact that institutional shareholders – pension funds, insurance companies, mutual funds, hedge funds, and other collective investment schemes – were often the dominant investors in OECD markets. Individuals held less than one fifth of shares in most markets, the main exception being the United States. Even there, direct individual ownership fell from 60% of the market to 40% between 1991-2009.
4. See for example, the report by IRRC Institute and Mercer (2010), which shows that active, long only equity managers in various countries had portfolio turnover rates that exceeded 150-200 percent the expected level during 2006-9.
5. For a detailed analysis of short-termism focusing on the experience of the United Kingdom see Myners (2000) or Marathon Club (2007).
6. The International Corporate Governance Network is currently preparing a set of good practices in agreements between asset owners and their fund managers, with the aim of promoting more long-term behaviour in the capital markets and a greater focus on key risks. A call for evidence was launched on 31 January 2011.
7. In the practice known as short-selling, an institution sells a security it does not own, but usually enters into an agreement to borrow it (via securities lending) in order to settle the trade at maturity. Naked short selling, or naked shorting, is the practice of short-selling a financial instrument without first borrowing the security or ensuring that the security can be borrowed.
8. Severinson and Yermo (2010), and Geneva Association Systemic Risk Working Group (2010), page 39.
9. <http://www.oecd.org/dataoecd/32/18/31557724.pdf>
10. The case for active ownership has also been eloquently outlined by TIAA-CREF, a large US institutional investor: *“Simply selling stock in the face of inadequate performance is not the most attractive option. In active as well as passive segments of portfolios, investors should be vigilant in trying to prevent problems before value is lost and it is too late to sell, or increasingly difficult or expensive to address...TIAA-CREF believes that long-term investors who have an effective focus on overseeing their investments will play a vital role in enhancing good corporate governance which in turn will help prevent a recurrence of severe crises in the future.... As providers of capital, long-term investors have among the most to lose if markets deteriorate and asset prices fall....This makes good economic sense in terms of our mission and is part of our job as fiduciaries representing our clients.”* Their solutions include allowing shareholders access to corporate proxy material to nominate directors, requiring a majority shareholder vote to elect directors, and an annual shareholder vote on executive compensation. See TIAA-CREF (2010).
11. Speech to the ICBN as reported in Global Proxy Watch, Vol XIII, No. 10, March 6 2009.
12. *“To date, institutional investors have said little about the lessons they have learnt over the last two years. Put simply, they have not produced satisfactory answers to the question: ‘what were the owners of these*

banks doing?’ Remember that shareholders approved value-destroying transactions, and remuneration practices that now appear to have been poorly aligned with corporate health and shareholder wealth.”
Quoted in Responsible Investor (2009).

13. OECD (2009b).
14. OECD (2009c) highlights that investment in physical infrastructure can benefit long-term economic output more than other kinds of physical investment.
15. See International Energy Agency (IEA) (2008). The estimate is that around half the investment will involve replacing conventional technologies with low-carbon alternatives with the remainder being additional investment.
16. For a review of these initiatives see OECD (2011a).
17. See OECD (2011b).
18. Principle II.F.
19. Principle V.F.

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PART II

Current Issues in Financial Markets

Global SIFIs, Derivatives and Financial Stability

by

Adrian Blundell-Wignall and Paul Atkinson
(in collaboration with Samuel Eddins)*

This paper looks at Global Systemically Important Financial Institutions (GSIFIs) and the global derivatives business. The derivatives business has grown exponentially versus global GDP in sharp contrast to the primary securities on which derivatives are based. Inter-connectedness risk and unconstrained potential leverage remain the most urgent tasks still facing the financial reform process. Concentrated oligopolistic derivatives markets and the ability of banks to shift promises and/or use their IRB models to estimate ex-ante risk capital – capital that might be needed in the event of a crisis – undermine the intent of financial reform. Nor do netting and clearing eliminate aggregate risk of losses and bankruptcy. The paper repeats the need to implement two of the OECD's long-standing reform recommendations: a binding leverage ratio based on equity and the separation of high risk investment banking activities from traditional banking. A derivatives transactions tax is also put forward as a possible option that would counter the cross-subsidisation of risk from the too-big-to-fail (TBTF) problem.

JEL Classification: G01, G14, G18, G24, G28.

Keywords: financial reform, systemic risk, Basel III, derivatives, leverage, inter-connectedness, clearing, netting.

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I. Introduction

Dealing with GSIFIs and inter-connectedness risk remain the most urgent tasks facing the reform process

The global financial crisis was caused by a combination of the mispricing of risk and innovations in instruments – particularly with the use of credit enhancement derivatives – that allowed leverage to expand rapidly. The crisis was also exacerbated by the presence of interconnectedness, which saw contagion of losses, both within and between large global banks and other institutions. These large universal and investment banks that encompass the global derivatives business are referred to as Global Systemically Important Financial Institutions (GSIFIs). The need to contain the huge risks to which these institutions still give rise remains the most urgent task left on the table of the financial reform process.

In recent years the OECD has produced a number of articles focusing on GSIFIs and the need for the reform of capital rules, banking structures and competition within the financial system.¹ All of these papers have focused on the need to strike a balance between sometimes conflicting policy objectives, where banks:

- have sufficient capital to absorb major shocks and thereby avoid the deadweight losses of a failing bank on the economy, but not so high so as to discourage intermediation at a reasonable price;
- are large enough to be diversified between asset classes and regionally, but with a structure of individual businesses that can be allowed to fail (closed by regulators) without materially contaminating other businesses within or outside the group. This helps to avoid underpricing of risk that results from “too-big-to-fail” (TBTF) status.

A GSIFI surcharge based on RWA will not be efficient

As recently decided by the Basel Committee,² a progressive Common Equity Tier 1 capital charge ranging from 1% to 2.5%, depending on a bank's systemic importance, may be imposed on banks' risk-weighted assets (RWA), with an additional 1% surcharge if such banks materially increase their global systemic importance. This paper, however, argues that a GSIFI surcharge applied to risk weighted assets would not be the most efficient approach for dealing with excess leverage and interconnectedness risk in these firms. The paper re-emphasises two previous OECD reform proposals, which are either not yet implemented in all countries, or are implemented in a way that leaves too large a gap to be effective in preventing the underpricing of risk and the undercapitalisation of financial firms; it also adds a new option for dealing with interconnectedness risk:

- a leverage ratio based of IFRS total assets;
- the separation of investment banking from retail and commercial banking operations, in order to remove the too-big-to-fail cross-subsidisation of high-risk activities;
- an OTC derivatives transactions tax.

Section II provides an overview of the global derivatives business. Section III examines concentration trends in the derivatives businesses of banks, and how this will be affected by regulatory reform. Section IV looks at the problem of interconnectedness risk related to derivatives from the perspective of past and more recent losses. Section V summarises recent regulatory reforms purporting to address the problems of leverage and counterparty risk. The main GSIFI risk mechanisms that have not been dealt with are explored in section VI. The three policy options to deal with leverage and interconnectedness risk in GSIFIs are explained in more detail in section VII. Finally, some concluding remarks are made in section VIII.

II. The global derivatives business

In very broad terms, there are two quite different types of financial products:

*Primary securities
versus...*

- Those primary instruments associated with consumption, savings and fixed capital formation that create wealth (usually associated with loans for trade credit and working capital, and securities – equity and debt – to finance productivity-enhancing innovation and investment); and

...derivatives...

- Those associated with wealth transfer between economic agents in the attempt (i) to hedge risks; (ii) to arbitrage prices for speculative purposes; and (iii) to reduce tax, regulatory and agency costs (management fees, custody, brokerage, etc).

*...that shift
promises...*

Derivatives are very much associated with the latter activity: wealth transfer (the shifting of promises embedded in underlying securities and resources, often many times over). OTC derivatives certainly result in strong revenue and profits for GSIFIs, and this profit typically arises as a transfer from other agents in opaque OTC market where bid ask spreads are wide and/or by reducing tax and regulatory costs.

*...have grown
exponentially
versus world
GDP...*

Figure 1 shows the notional global value of derivatives as a share of global GDP alongside primary global financial instruments. The total of derivatives plus primary securities rises to 14 times world GDP in 2008, before dipping back to 12 times in 2010, following the financial crisis. Global primary financial assets (equity market capitalisation, debt securities and bank assets), on the other hand, remained within a range of 1.5 to 2 times world GDP over the period 1998 to 2010.

*...compared to
primary securities
that have not*

Figure 2 shows the basic components of primary securities. They rose from 1.5 times GDP in 1998 to 2 times by 2000, led by the equity boom in tech stocks. While equity values fell thereafter, the steady growth of banking and securities as a share of GDP offsets this effect by 2010.

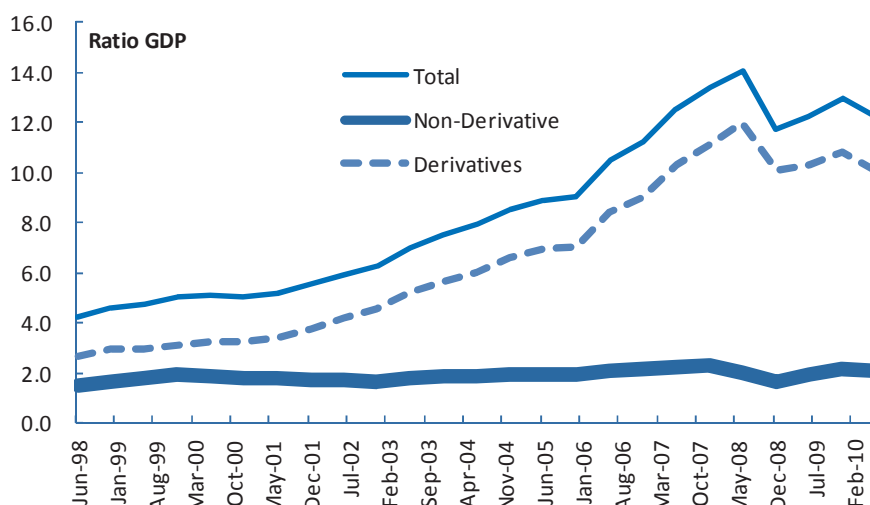
*Interest rate
derivatives
dominate,
followed by those*

The notional value of derivatives, in contrast, has had spectacular growth, rising from USD 81 trillion in 1998, less than 3 times world GDP, to USD 605 trillion (around 10 times GDP) by 2010. Most of the derivatives are over-the-counter (OTC), with only USD 28 trillion (or 3.8% of the total) traded on

regarding
exchange rates,
CDS, commodities
and equities

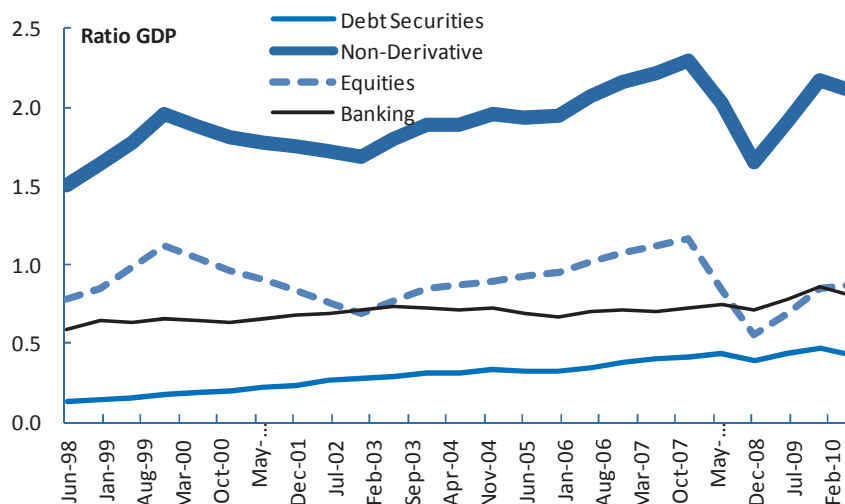
exchanges. Over this same period the gross market (current settlement) value of all derivatives rose from 8.5% to 41% of world GDP.³ Figure 3 shows the composition of the notional outstanding value of derivatives, which is dominated by interest rate contracts (swaps, options, futures and forwards) currently at USD 452 trillion. Credit Default Swaps (CDS), which played such a major role in the global financial crisis, rose sharply after 2004 to USD 58 trillion, before declining by about half their value following the financial crisis. Currently derivative instruments are made up interest rate derivatives (USD 452 trillion), exchange rate derivatives (USD 53 trillion), CDS (USD 30 trillion), commodity derivatives (USD 28 trillion) and equity-linked derivatives (USD 6 trillion).

Figure 1. Global notional derivatives versus primary securities

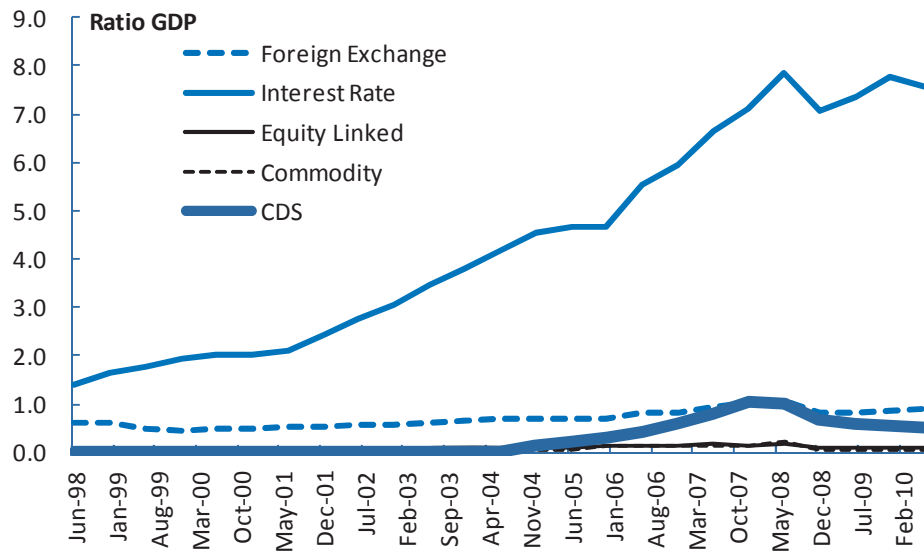


Source: Authors' calculations based on data from Bank for International Settlements (BIS), Datastream, World Federation of Stock Exchanges.

Figure 2. Composition of primary securities



Source: Authors' calculations based on data from Bank for International Settlements (BIS), Datastream, World Federation of Stock Exchanges.

Figure 3. Composition of derivative securities

Source: Authors' calculations based on data from Bank for International Settlements (BIS), Datastream, World Federation of Stock Exchanges.

Explaining these trends

Some of this layering of derivatives is for “legitimate” end-user hedging purposes (e.g. stabilising income streams, and energy and interest costs). But it is difficult to believe that such activities would have increased at an exponential rate *versus* the reference primary securities on which they are based. Other explanations include some less than socially useful activities, including:

Regulatory arbitrage

- *Regulatory arbitrage*: Basel capital rules work from the ideas of ex-ante riskiness of assets which can be weighted and added across different risk “buckets” for the purpose of capital adequacy calculations. But with complete markets in securities and credit, the riskiness of securities can readily be shifted to where capital charges are lower. An entire industry has built up around this business and some of the spectacular failures in the crisis were directly related to this activity.

Tax arbitrage

- *Tax arbitrage*: the tax treatment of investors and financial products are also very uneven, and derivatives are well suited to take advantage of the opportunities that this presents. Income streams and tax benefits can be shuffled between agents to achieve the best mix of after-tax returns. Structured tax-efficient products have the advantages of (i) convenience; (ii) tailoring products to suit individual client objectives; (iii) opaque pricing with respect to the source of return (income or capital gain); (iv) use of bank balance sheets' attractive funding costs; and (v) leverage to increase the profit impact of trading a given spread.

Speculation

- *Speculative trading*: where potentially highly profitable but high tail risk investments are made and churned. GSIFI participants benefit from ready low-cost liquidity and cross-subsidisation from the too-big-to-fail (TBTF) status of these firms (a part of the underpricing of risk).

III. Concentration trends in OTC derivative markets

New products like CDOs are characterised by rapid entry into new revenue streams reducing concentration...

The nature of competition in product segments is such that early movers in new products that exploit the above-mentioned arbitrage opportunities gain revenue share quickly, which then induces entry into the business from other banks. This occurred in the fixed income area prior to the crisis, with CDOs and CLOs playing a key role. UBS for example was a late entrant in CDOs and suffered the collapse without enjoying a long period of gains.⁴ Derivatives are easy to implement and can change and leverage positions rapidly.

...only to see it rise again as loss makers exit later on

As the CDO/structured product boom and bust showed, this entry forces margins down and increases leverage to the point where some players fail. Exit from the industry leads to a more oligopolistic structure, and the improvement of GSIFI margins for the winners of this process. There are both trends and cyclical movements in concentration and competition which have implications for the consumer and for financial stability. In the following sections these trends and dynamics are explored for interest rate, exchange rate and equity derivative markets, respectively.

Interest rate derivatives

Oligopolistic structures have emerged in interest rate derivatives...

Figure 4 shows recent trends in the Herfindahl index⁵ for interest rate derivatives – forwards rate agreements, swaps and options – between BIS reporting banks and non-reporting bank clients.⁶ This gives some sense of the trends in competitiveness with respect to the consumers of interest rate derivative financial services. There was a sharp pick-up in concentration following the end of the 1990s, when the Gramm-Leach-Bliley Act removed the Glass-Steagall Act, and firms re-positioned in the lucrative US market.⁷ The fixed income boom, following the tech bust, saw concentration fall as entry into the fixed income products was important in market share and the stock performance of GSIFIs. The CDO/CLO CDS-based structured product boom also led to new entry from smaller and certainly less experience players. Risk was being underpriced and leverage rose sharply, with the CDS boom and credit rating agencies playing a strong role in both. Subsequently, concentration has begun to rise again, as firms have left the industry or reduced their shares.

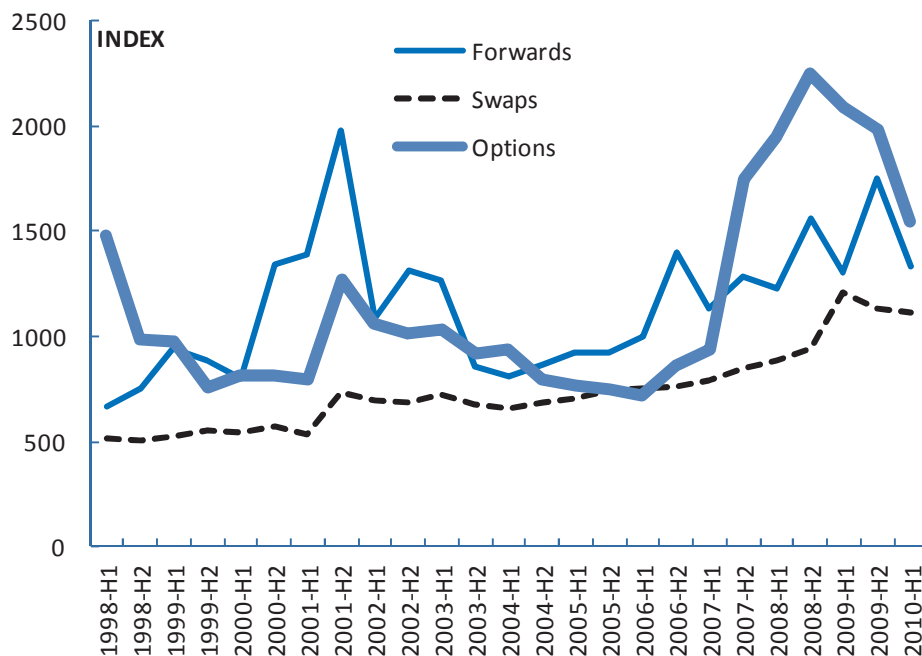
...servicing clients...

...and in bank-to-bank trading

Similar patterns emerge when the trends for contracts between reporting banks are examined, as in Figure 5. These give some idea of which way concentration is moving in the inter-bank market, where financial stability concerns related to interdependence arise. There was a sharp pick up in concentration during the M&A period post Glass-Steagall. Subsequently, there was a reduction in concentration as the CDO/CDS boom encouraged entry and

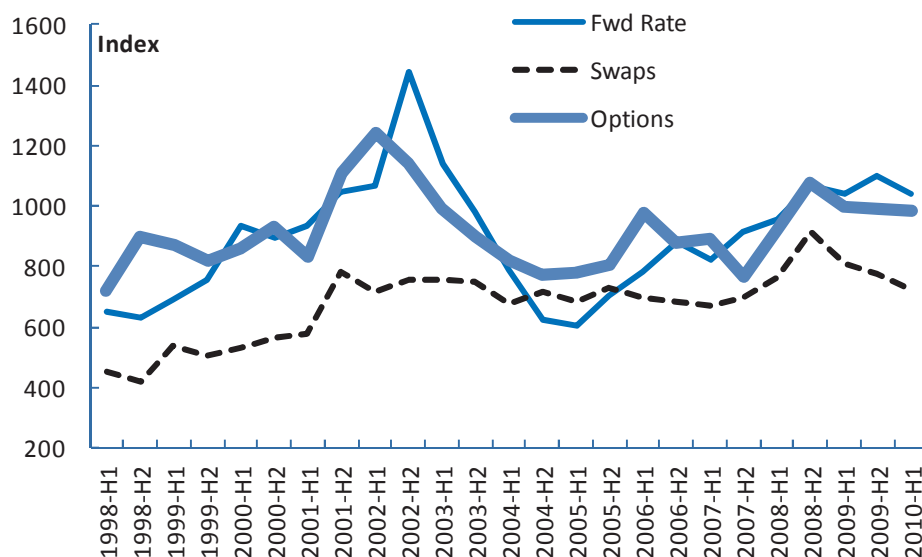
battles for market share. The crisis has led to exit from the market and concentration, as a consequence, has subsequently been rising.

Figure 4. Herfindahl index, interest rate derivatives; bank-to-non-bank clients



Source: Bank for International Settlements (BIS).

Figure 5. Herfindahl index, interest rate derivatives; bank-to-bank clients



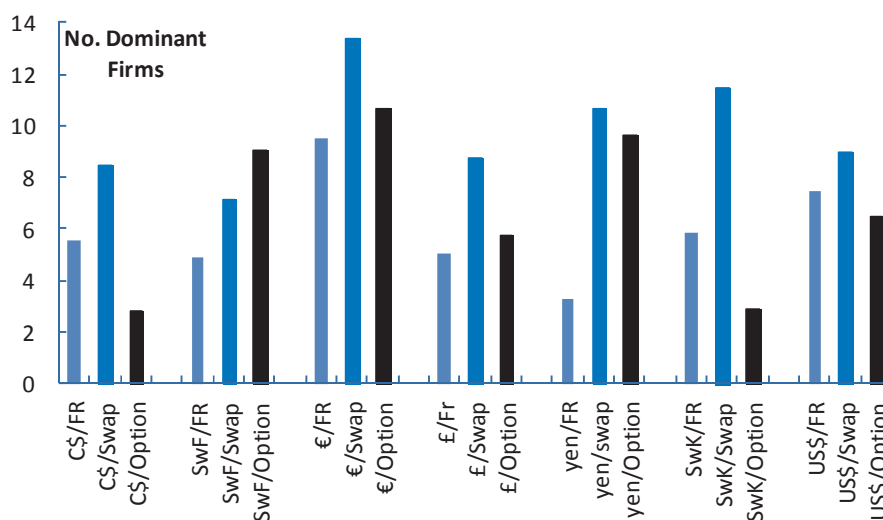
Source: Bank for International Settlements (BIS).

Figure 6 shows the interpretation of the most recent numbers in the bank-to-non-bank interest rate derivatives, while that for bank-to-bank derivatives is shown in Figure 7. For the large US market, the indexes imply that – if all firms had equal shares – there would be:

The equivalent of 6-9 firms service the global interest rate bank-to-client products...

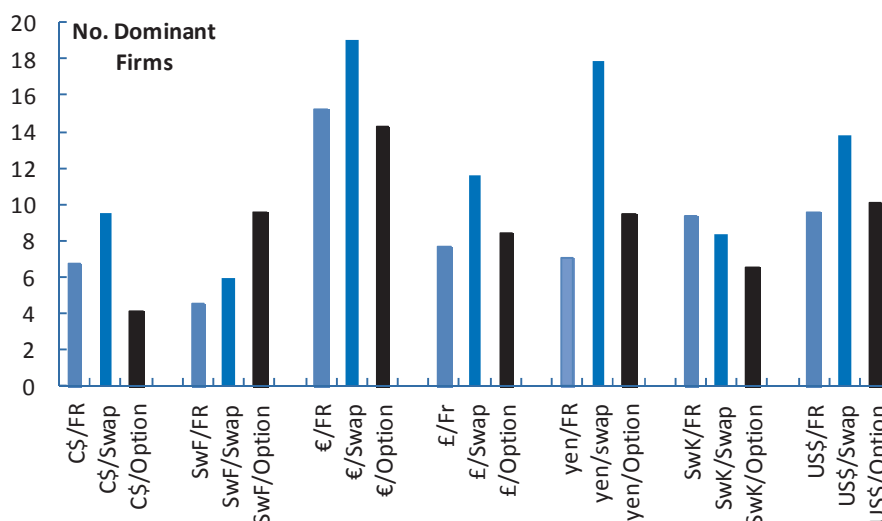
- Only 6 firms dominating the dollar-based interest rate options market to non-banks clients; 7 for forward rate agreements and 9 for interest rate swaps. There is even greater concentration in some of the smaller currency markets; the euro-based products are overall more competitive.

Figure 6. Interest rate derivatives bank-to-non-bank; number of equal share dominant firm equivalents



Source: Authors' calculations based on Bank for International Settlements (BIS) data.

Figure 7. Interest rate derivatives bank-to-bank; number of equal share dominant firm equivalents



Source: Authors' calculations based on Bank for International Settlements (BIS) data.

*...while only 10-14
service the bank-
to-bank market*

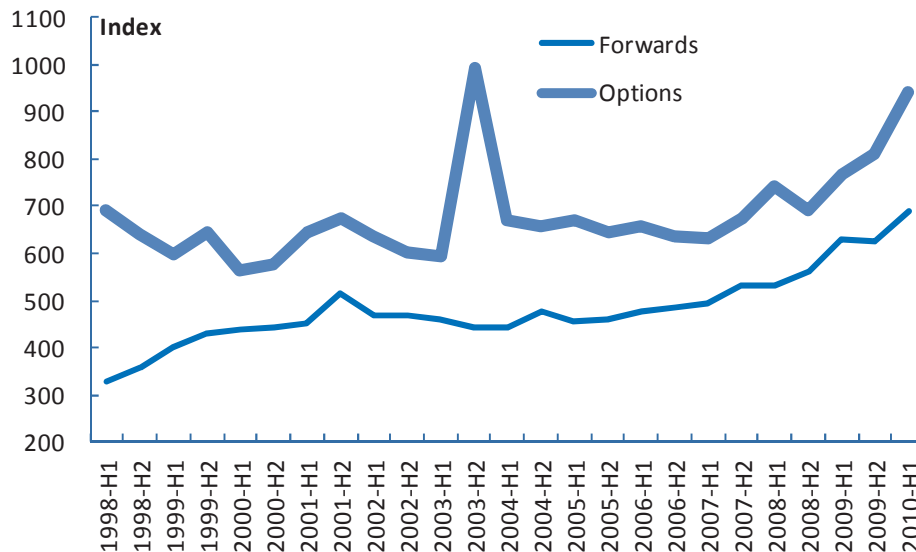
- For inter-bank interest rate derivative products, 10 dominant firms serve the forward rate agreement market and the option market, while 14 serve the swap market.

Foreign exchange derivatives

*Concentration is
rising in foreign
exchange
derivatives...*

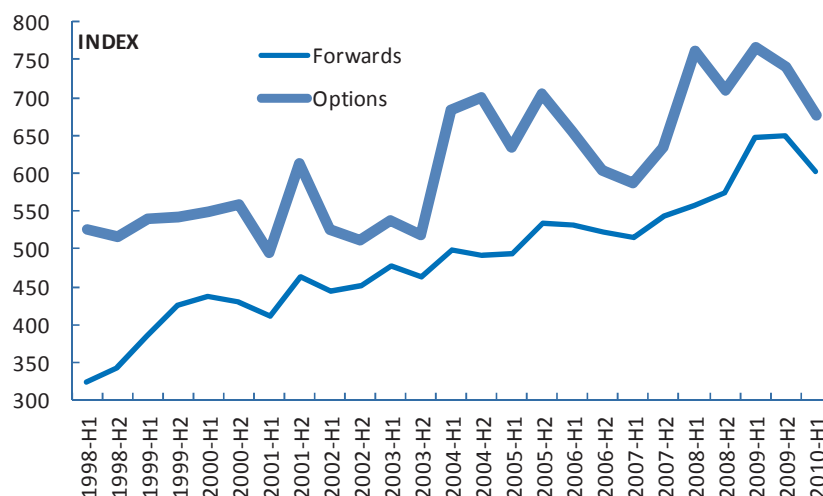
There have been similar concentration trends in the other derivative markets controlled by GSIFIs. Figure 8 shows Herfindahl indexes for foreign exchange derivatives, for forward rate agreements and options in the dealings of BIS reporting banks and their non-bank clients. Concentration has risen since the crisis led to the exit of weaker players and as regulatory and other barriers to entry have risen. While 30 equal-size dominant firms served the forward rate market and 14 served the options market at the start of the period (1998), this declined to 14 and 10 firms, respectively, by 2010.

Figure 8. Herfindahl index, exchange rate derivatives; bank-to-non-bank clients



Source: Bank for International Settlements (BIS).

Figure 9 shows the same trends for the bank-to-bank foreign exchange derivative contracts. Here there has been an unmistakable upward trend in the concentration ratio. While 31 equal-size dominant firms served the forward rate market and 19 served the options market at the start of the period (1998), this declined to 16 and 15 firms, respectively, by 2010.

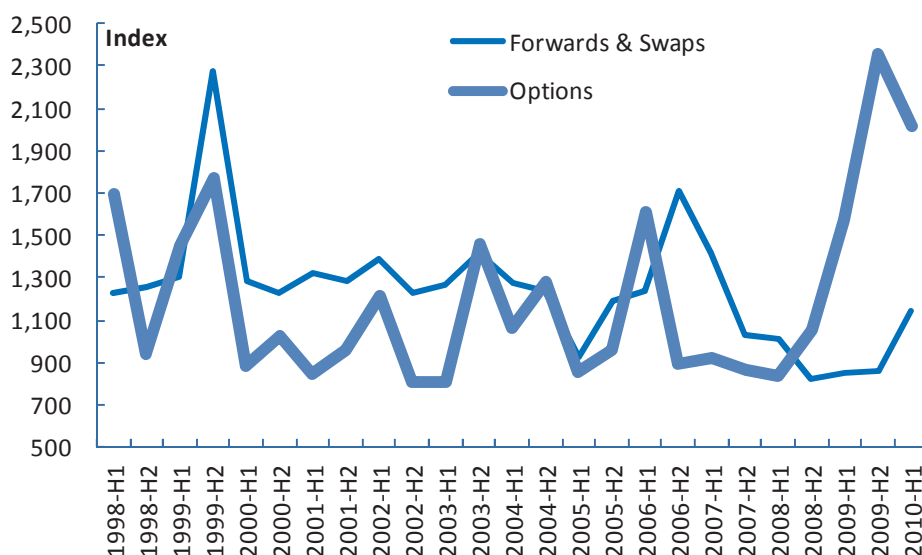
Figure 9. Herfindahl index, exchange rate derivatives; bank-to-bank clients

Source: Bank for International Settlements (BIS).

Equity derivatives

...and equity derivatives have always been very concentrated

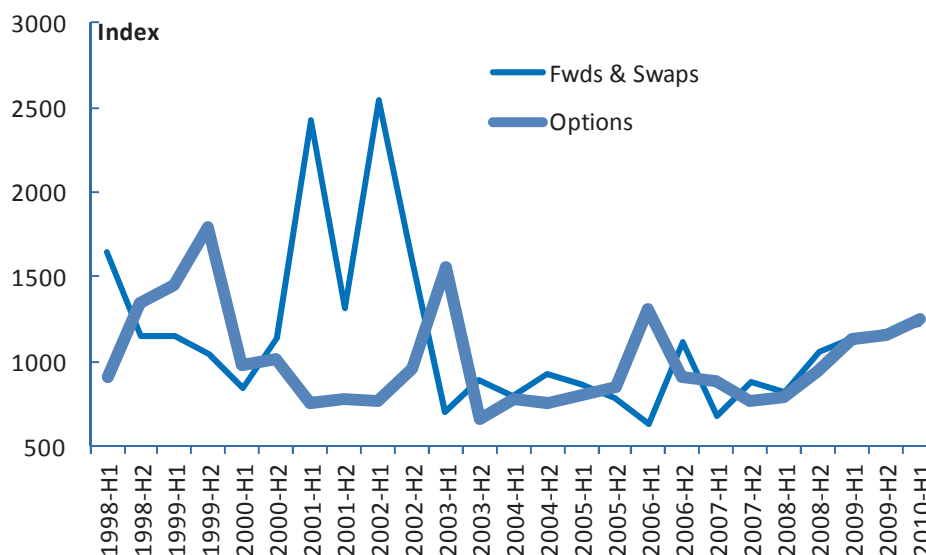
Figure 10 shows Herfindahl indexes for equity derivatives: for forward rate agreements and swaps (taken together) and for options, for the bank-to-non-bank market. No trends are evident in the concentration in the provision of these services between BIS reporting banks and their clients, except for a large jump in concentration of option services following the financial crisis.

Figure 10. Herfindahl index, equity derivatives; bank-to-non-bank clients

Source: Bank for International Settlements (BIS).

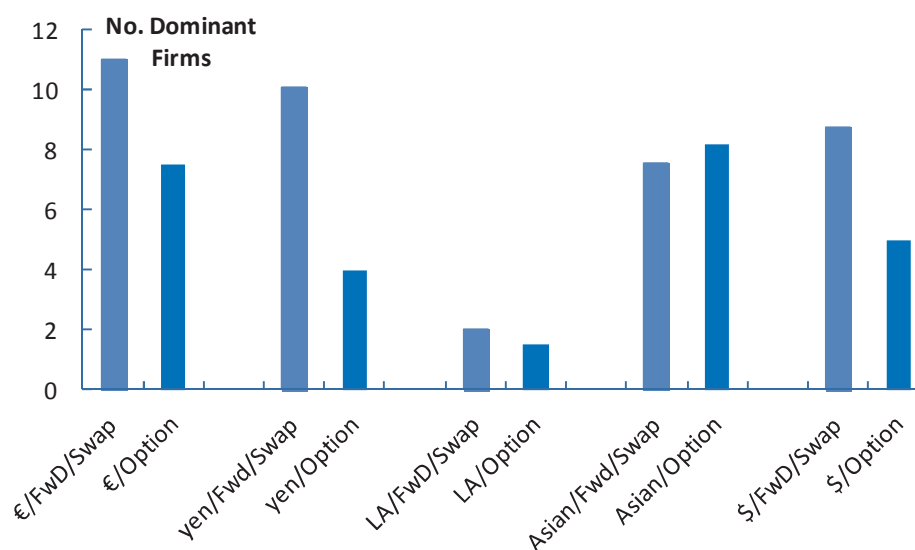
However, the market has tended to be much smaller than the other derivative markets to this point in time, and it has always been more highly concentrated than the other markets since 1998. Similar comments apply to the bank-to-bank market in equity derivatives shown in Figure 11. There was a spike in concentration at the end of Glass-Steagall, which subsequently fell away in the mid 2000s. But since the crisis concentration in the market has begun to increase.

Figure 11. Herfindahl index, equity derivatives; bank-to-bank clients



Source: Bank for International Settlements (BIS).

Figure 12. Herfindahl index, equity derivatives; bank-to-non-bank clients

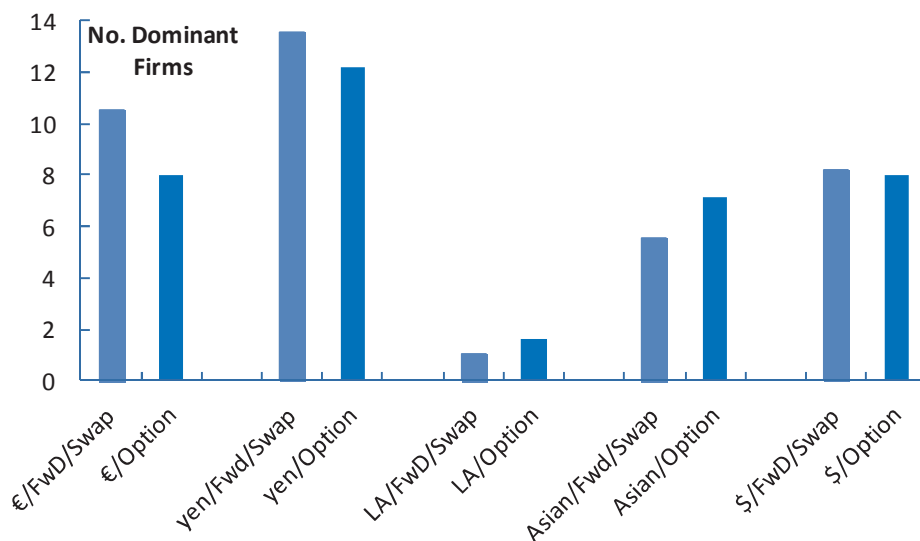


Source: Authors' calculations based on Bank for International Settlements (BIS) data.

Only the equivalent of 5 firms serve the USD-based options market

Figure 12 shows the number of equal-share dominant firms in the equity derivatives business between banks and non-banks: the equivalent of 9 firms serve the dollar forward and swap market, and only 5 serve the options market. Figure 13 shows the same calculations for bank-to-bank equity derivatives. Eight dominant firm banks serve the dollar market for forwards, swaps and options.

Figure 13. Herfindahl index, equity derivatives; bank-to-bank clients



Source: Authors' calculations based on Bank for International Settlements (BIS) data.

Explanations of recent trends

The main likely reasons for this rise in concentration in GSIFI derivative activities are as follows:

M&A

- The financial crisis led to the 'failure' and absorption of some large institutions (Merrill Lynch, Wachovia, Lehman Brothers, Bear Stearns, Northern Rock, Country Wide, etc), which directly raised concentration favouring GSIFIs.

TBTF

- A clear distinction emerged between TBTF banks and those that were not too big. Banks that are TBTF would include many of the GSIFIs considered in this paper. All small-bank, insurance, hedge fund and other clients of GSIFIs will now recognise that counterparty-risk is reduced by dealing with TBTF-banks. This is a major barrier to entry.

Technology barriers

- There are also high barriers to entry in terms of the set-up costs for large global businesses, and because of the need for sophisticated trading platforms with rapid execution times in derivatives businesses. Related to this are those barriers that arise from the need for strong risk management skills and systems in OTC derivative businesses.

Regulatory costs

- Other things given, higher Basel III and Dodd-Frank regulatory capital costs favour scale and volume.

Margin pressure and exit

- Ex ante margin pressure from regulatory reforms of Basel II and III and the Dodd-Frank Act will elicit the exit of the smaller less efficient firms from some of the derivatives businesses, as they will need to free up capital to look for better opportunities.

The netting incentive

- Regulatory changes under the Basel system permit bilateral counterparty netting for OTC derivatives, and some cross-product netting. This provides an incentive to deal directly with GSIFIs to maximise a greater bilateral netting pool to economise on capital (see the CVA discussion below).

Balance sheet efficiency

- Much of the regulatory arbitrage that arises from agency costs is due to the balance sheet efficiency of large globally interconnected banks that can trade in all jurisdictions and products. This favours a steady agglomeration of business in GSIFIs.

Competition concerns

These trends are of concern for a number of reasons.

*(1) Market efficiency and pricing:**Un-transparent and wide bid-ask spreads*

- Most of the derivatives are provided in the opaque OTC market, where pricing is difficult to monitor, due to the tailored nature of the products. While transparency will improve somewhat with better reporting and more clearing required of some products in the reform process, it is clear that oligopolistic concentration is conducive to wide bid-ask spreads and lack of price competition.⁸

Lack of diversity of views in price formation

- Price discovery in financial markets where counterparties are concerned depends on opposite sides of the trade having different views. The fewer players there are the less divergent views on security prices there are likely to be. As already noted at the outset, the financial crisis was caused in part by the mispricing of risk. The increasingly concentrated nature of the derivatives market raises the chances of mispricing assets due to the lack of competition in bid-ask spreads.

*(2) Consumer protection:**Oligopolistic pricing power*

- The trend towards even more oligopolistic structures in OTC derivative markets will improve pricing power, offsetting the pressure on margins flowing from regulatory reform. This in turn adds to cost for the non-bank client base.

(3) *Financial stability and bank interdependence:*

- It is evident from the above analysis that concentration is rising in the bank-to-bank provision of derivative services. This is particularly so in the vast interest rate derivatives market and in equity derivatives. While foreign exchange has traditionally been a more competitive derivative market, there is a clear trend towards increased concentration in this market, too. Increasing concentration and a smaller number of counterparties raises interdependence and the TBTF problem.
- Fixed income still dominates the revenue base of GSIFIs, and the interest rate derivatives business is a massive 75% of outstanding notional derivatives. The notional outstanding size of equities derivatives, on the other hand, at 1.1% of the total, is currently very small. Interest rate derivatives contain a lot of plain vanilla low margin business and the crisis has hurt previously very profitable structured products. Much of this business already trades on lower margin exchanges. The equity derivatives business is currently relatively more profitable following the Dodd-Frank and Basel III reforms.
- Table 1 reproduces some illustrative private sector analysis that shows the equity derivatives business in total, even after all the regulatory reforms, is expected to be twice as profitable (at 22%) as the overall investment banking business (at 12%). Within the equity derivatives businesses the following points can be noted:
 1. Delta one products (those with no optionality) are more than 3 times as profitable as the overall investment bank business at a 40% ROE on average. It can therefore be expected that ETFs, and swap-based equity products generally, will be a prime candidate for the next bubble-like trend in the GSIFI business models.
 2. Convertibles are next most profitable at 30% ROE on average.
 3. Structured equity products and prop trading look especially profitable in the EU, which are less affected by reforms.

*Equity derivatives
now look
relatively more
profitable, post
regulatory reform*

Table 1. Expected ROEs post regulatory reform of some GSIFIs

	CS	UBS	DBK	GS	MS	BNP	SG	BARC	BAC	Citi	Avg.
ROE before reg. Changes	23.5	22.7	19.9	23.4	19	19.2	17.2	17.8	na	na	20.3
Post Reg. ROE	13	11.5	10.5	13.8	12.4	13.8	10.2	12	na	na	12.1
Equity Derivatives Post Reg ROE's											
Structure products	15	13	16	11	5	21	27	15	5	4	14
Flow equity	15	15	15	30	18	19	15	21	20	8	18
Delta one (ETF,s, Swaps, fut. fwds)	38	45	34	32	53	51	55	49	32	23	40
Convertibles	27	36	23	26	42	24	18	42	36	44	30
Prop. Trading	23	36	24	21	37	12	31	29	17	22	24
Total	22	26	21	20	22	24	29	27	17	15	22

Source: JP Morgan.

Delta one products and especially ETFs are strong candidates for the next “bubble”

- Bubbles develop when (i) the macro rate environment is stimulatory; (ii) a clear profit arbitrage opportunity arises, often involving new products; (iii) early movers exploit the opportunities and gain in revenue market share, which induces entry into the business from other banks in a “herd-like” manner. The equity derivatives business generally, and ETFs in particular, have all the early requirements for a bubble to develop. The sector is still small, particularly swap-based ETFs, and demand for them is high. For example, ETFs tie in nicely with revenue from stock lending and swap based ETFs from opaque derivatives pricing. Early movers were State Street and Black Rock, but now the large GSIFIs are growing these products quickly, too.

The question arises as to whether recent regulatory changes have been enough to prevent these types of forces from leading to yet another financial crisis.

IV. The problem of interconnectedness risk: past and recent failures

GSIFI ex-ante risk models never predict crisis problems and losses

The recent financial crisis shows that financial risk modelling and the capital adequacy which is based upon it were woefully inadequate. All major GSIFIs suffered serious losses, which were unanticipated by their risk models. It is virtually impossible to determine whether they could have survived in the absence of the massive international bailout effort from governments around the world. Two examples are chosen for illustrative purposes: AIG, which shows just how vulnerable GSIFIs were; and MUFG (a Japanese joint venture with Morgan Stanley), which is much more recent and shows that just when the reform process is well advanced, and supervision has supposedly been toughened, bank risk models can lead to large losses even from relatively small movements in interest rates.

AIG

AIGFP was selling underpriced CDS for banks to create CDOs and to reduce their capital requirements

Basel II left the financial system with not nearly enough capital to deal with massive losses including derivative counterparty issues during the crisis. The role of AIG is instructive. AIG had capital of USD 95 bn in 2007, and balance sheet assets USD 1.05 tn. AIG Financial Products (AIGFP) had gross long and short derivatives of USD 2.13 tn in 2007, not included in the main balance sheet. The netted positions of the latter were USD 533 bn, of which USD 378 bn related to bank transactions explicitly designed to reduce their capital holdings, and USD 155 bn primarily for arbitrage purposes related to collateralised debt obligations (CDOs) based on residential mortgage-backed securities and corporate collateralised loan obligations (CLOs). In 2008, AIG lost USD 99 bn, more than all of its start-of-the-year equity capital, as credit events followed by its own downgrading by rating agencies led to collateral calls. Thereafter a series of bail-out needs put USD 182 bn of taxpayer’s money at risk.

Table 2 shows the amounts of payments to the counterparties (from Tarp subordinated debt investments, Fed credit lines – to post collateral for AIGFP – and then from Maiden Lane II and III to purchases the heavily discounted

CDOs) that had bought insurance from AIG for the purposes of regulatory capital relief and for arbitrage in the CDO/CLO market. It also shows the percentage of GSIFI equity capital that these payments represented. If the AIG bailout had not been undertaken, the crisis would have followed a very different course and the cost of the bailout worldwide may well have been greater.⁹

Table 2. US Government payouts to AIG CDS counterparty losses

Institution	In USD billion			As a share of capital ^{c)} at end-2008
	Collateral postings for credit default swaps ^{a)}	Payments to securities lending counterparties ^{b)}	Total	
Goldman Sachs	8.1	4.8	12.9	29.1%
Société Générale	11	0.9	11.9	28.9%
Deutsche Bank	5.4	6.4	11.9	37.4%
Barclays	1.5	7	8.5	20.0%
Merrill Lynch	4.9	1.9	6.8	77.4%
Bank of America	0.7	4.5	5.2	9.1%
UBS	3.3	1.7	5	25.2%
BNP Paribas	...	4.9	4.9	8.3%
HSBC	0.2	3.3	3.5	5.3%
[memo: Bank of America after its merger with Merrill Lynch]			12	[18.1%]

a) Direct payments from AIG through end-2008 plus payments by Maiden Lane III, a financing entity established by AIG & the New York federal reserve Bank to purchase underlying securities.

b) September 18 to December 12, 2008.

c) Common equity net of goodwill; net of all intangible assets for Merrill Lynch and HSBC.

Source: AIG, Financial reports for bank capital data.

MUFG

And still the problems continue after all the reforms so far bedded down

More recently (April 2011), and following the completion of most of the reform process, developments suggest that it is premature to assume bank modelling and risk management is now adequate to deal with derivatives. MUFG posted a USD 1.7 bn loss in the year to March, mainly (though the full details are difficult to acquire) as a consequence of poorly-hedged interest rate (swaption) trades. If such losses can be triggered by an unexpected 45 basis point rise in Japanese long-term interest rates coupled with an increase in swaption volatility, it is troubling to think of what might be possible in a world of higher inflation and/or widespread unexpected sovereign debt downgrades with USD 450 tn on notional interest rate derivatives currently outstanding.

V. Derivatives and regulatory reform so far

Given the role of derivatives in the crisis, a number of reforms have recently been introduced which will affect – *ex-ante* – GSIFI revenues, ROEs and the structure of their businesses. This is very important, because derivatives involve relationships between counterparties that raise interconnectedness within the financial system. This section reviews the recent reforms, while the rest of the paper suggests why problems remain and what might be done about them.

Dodd-Frank

The US has led the way through the Dodd-Frank Act of July 2010:

CCPs

- *CCPs*: the aim is to route a majority of OTC derivatives through central counterparty clearing houses (CCPs), which reduces counterparty and operational risks. However, this is unlikely to happen for customised structured products, and exemptions will apply for exchange rate derivatives and corporate end-users of derivatives.

SEFs

- *SEFs*: all cleared swap transactions have to be traded on exchanges or through swap execution facilities (SEFs). This would lead to ex-ante margin compression for OTC swaps (affecting investment bank revenue which will be resisted) as the more transparent platforms should allow more competition from the shadow banking sector. However, the major GSIFIs control much of the flow in OTC derivatives and are the natural candidates to be clearing members and will likely dominate the SEFs. There are many exemptions, for customised products, exchange rates and, of course, structured products that will not be eligible for clearing.

Reporting and transparency

- *Reporting*: Customised swaps that are subject to mandatory clearing are to be subject to real-time reporting of price and volume. This will apply also to swap transactions reported to central repositories or the SEC. The EU is following suit here with similar requirements for all OTC derivatives. This sort of transparency will (other things given) reduce margins, as bid ask spreads are subject to greater scrutiny and competitive comparisons.

Swap entities and no bail out

- *Bailout prohibition of some swap entities, Section 716*: the “entity” definition includes practically everything (dealers, SEFs, CCPs, exchanges and counterparties). However, after some fight-back by banks, it will not apply to interest rate, exchange rate, and gold/silver swaps; nor will it apply to derivatives for hedging banks’ own risks. GSIFIs will have to (effectively) ring-fence and separately capitalise and fund those parts of its swaps business to which the rule does apply: agriculture, un-cleared commodities, non-investment grade CDS, most metals, energy, and equity derivatives. Such measures will not apply at all within the EU. The credit rating needed to participate in the swap market would make the cost of transacting with the entities to which the Act applies higher – as banks would need more capital. US banks would therefore be disadvantaged against EU banks in the swaps markets affected. The scope is, however, very limited, as interest rate and foreign exchange derivatives constitute 89% of total derivatives (as shown earlier), and the rule will only apply to new businesses.

Volcker rule

- *The Volcker rule*: The Volcker rule bans proprietary trading (the bank acting as principal using its trading account to deal in securities and derivatives). This will put pressure on GSIFI ROEs as this traditionally profitable business migrates elsewhere. On the other hand riskiness is

reduced, and the large negative ROEs in crisis periods should be partly ameliorated. This measure will not apply within the EU.

Trading book (2008) and Basel III reforms

Basel III

With respect to capital rules, Basel II failed to improve the original Basel I system. Basel III has attempted to close loopholes, and places additional focus on some new risks that played a role in the crisis: counterparty default and/or sharp valuation adjustments that can arise from trading derivatives in illiquid markets. Pillar 1 of the Basel system defines minimum capital required to buffer unexpected losses. Total Risk-Weighted Assets (RWA) are based on a complex system of risk weighting that applies to credit risk (CR), market risk (MR) and operational risk (OR), which are calculated separately and then added:

$$\text{RWA} = 12.5(\text{OR} + \text{MR}) + \sum_i w_i A_i \quad (1)$$

where $w(i)$ is the risk weight for asset i ; $A(i)$ is asset i ; OR and MR are directly measured and grossed up by 12.5 for 8% equivalence.

The reform of Basel II began in 2008 for trading book illiquidity issues:

IRC

- An Incremental Risk Charge (IRC) (2008) equal to the estimated default and migration risk of un-securitised products over a 1-year capital horizon at the 99% confidence interval, to allow for credit default and migration risk in bank trading books. These types of losses cannot be captured in banks' shorter term VaR modelling. This is aimed at providing for the sort of losses that resulted from banks unwinding trading book assets in illiquid markets in 2008. Other things given, it adds to market RWA.

Basel III approach

The Basel III (adjusted Basel II) approach to counterparty credit risk (CCR) is based on the concepts of exposure at default (EAD), loss given default (LGD) and probability of default (PD). The basic features of the Basel II approach carried over to Basel III include:

Bilateral netting pools

- Banks may form bilateral cross product netting pools of derivative and repo style transactions for capital purposes, provided they are legally enforceable in all of the jurisdictions concerned and banks incorporate this formally in their risk management processes.

IRB model exposure calculations...

- For banks using the internal risk-based approach (IRB) expected positive exposure (EPE) in their netting sets is a weighted average of expected future exposures (EE). The internal models calculate EE at a series of future dates, and hence across possible future values of all the relevant market risk factors (including default risk spreads). EAD is based on a simple multiplier ("alpha") of EPE (with a floor of 1.2).

...with non-normal distributions

- The EE should be calculated based on a distribution of exposures that accounts for the possible non-normality of the distribution of exposures – the so-called “fat tails” where appropriate (and if possible). The effect of margin agreements is captured and accounted for in calculating EE. Duration (maturity) adjustments are made for comparability over the first year of the future exposure.

Models all differ between banks

- All banks can use whatever models they like, provided supervisors sign off on basic rules of their use. The same derivative, therefore, may be priced differently in two different banks.

Credit equivalents calculated

- Credit equivalent amounts of bilaterally netted exposures (at fair value allowing for collateral) are calculated and added into RWA.

Basel III makes the following adjustments to deal with derivatives counterparty risk:

CCR

- To add a capital buffer based on a stressed VaR (equal to 3 times the 10-day 99% VaR calculated during a period of high stress) to the ordinary VAR-based capital requirement. This will have the effect of raising RWA. This reform was motivated in part by wrong-way risk – *i.e.* when the probability of default of a counterparty is positively correlated with general market risk factors (like the monoline insurers).

CVA

- A Credit Valuation Adjustment (CVA) – is an additional up front charge to cover mark-to-market unexpected counterparty risk losses, valuing counterparty risk in bond equivalents and applying the market risk (MR) regulatory charge to such bond equivalents (after deducting the IRC). The CVA is calculated within each of the netting sets, and is then added across netting sets.¹⁰ The initial end 2009 proposal to multiply the standard benchmark CVA charge was abandoned after consultation with the banks in the final version.

Collateral standards

- Standards for collateral management and initial margins will be strengthened, *i.e.* for these to act as offsets to calculated market exposures.

Correlations for GSIFIs +25%

- In the models used by banks, raise the correlation factor between large financial entities (greater than USD 100 bn assets) by 25%, to help address the interconnectedness issue (higher risk of exposure to financial firms).

CCPs

- Central Counterparties (CCPs) are explicitly incorporated in the framework, where fully collateralised positions attract a modest risk weight (in the 1-3% range) – while highly favourable, the non-zero exposure recognises that CCP exposures are not risk free.

VI. GSIFI systemic risk from derivatives and leverage

The Basel Committee estimates that 2/3 of the counterparty credit risk (CCR) losses were due to Credit Valuation Adjustments (CVAs) and only 1/3 to actual defaults. Consequently, CVA risk has been an important focus of reform.

The GSIFI group dominates the massive derivatives market, and because of this, is more interconnected than other financial institutions. This interconnectedness gives rise to systemic risks which may require additional policy measures compared to non-GSIFI banks.

Derivatives have all the bankruptcy characteristics of debt, but fund nothing

Derivatives have all of the bankruptcy characteristics of debt without creating any new underlying net investment for the economy. Derivatives simply shift risk; they do not eliminate aggregate risk. When one party to a derivatives transaction makes a huge gain, another institution is making a huge loss – and that loss (if, transparently, marked to market) may cause a financial firm to fail. Systemic financial stability risk rises, because derivatives both raise leverage and require each participant in the chain of counterparties to be able to perform their obligations in order for them to be able to perform their own. In this way derivatives raise interconnectedness (systemic) risk, without adding any new equity or debt capital for the economy.

It is inter-connectedness that requires more GSIFI measures

The case for additional measures to ensure GSIFIs have relatively more capital and risk mitigation, in the view of this paper, rests on their dominance in the derivatives market and the scope this gives to misprice risk and to raise leverage and interconnectedness at the same time.

Derivatives and leverage risk

The financial system is a system of promises. Derivatives allow GSIFIs to shift those promises around to arbitrage the different risk weightings, regulatory differences and taxes between sectors and jurisdictions.

Banks use derivatives to shift promises to reduce capital...

The Basel system applies to banks only, and not to insurance companies, money market funds (MMFs), hedge funds, pension funds, and the like. It is implemented through national directives and different definitions of what can be included in capital are permitted. By using derivatives to transform securities in this uneven playing field banks obtain regulatory relief. A simple example is illustrative: bank A lends to company XYZ (100% risk weighted) and then buys CDS insurance from a bank B counterparty which is only 20% risk weighted. By shifting the promise to pay from company XYZ to Bank B, the capital charge to bank A is all but removed. Bank B, in turn, then shifts the promise again by underwriting the CDS contract with a re-insurer outside of the banking system and possibly in another jurisdiction. The charge for this is very small. In this example, the banking system in question effectively avoids meaningful capital charges and leverage is expanded.

...allowing them to adjust down the RWA/TA ratio...

By transforming risk in this manner, banks can adjust the ratio of RWA to total assets (TA): since capital ratios are applied to RWA, banks can avoid capital and expand TA per unit of capital (*i.e.* leverage) by reducing the ratio.

The incentive to do this is very strong, since a bank's ability to leverage up spreads is one of the primary means of raising the return on equity (ROE). Using equation (1) above, banks would aim to set the target $(RWA/TA)^*$ in the manner of:

$$(RWA/TA)^* = [12.5(OR+MR) + \sum_i w_i A_i] / \sum_i A_i = fn(ROE) \quad (2)$$

It follows that:

$$0.08 \{ (RWA/TA)^*(TA) \} = \pi/ROE \quad (3)$$

Where π is defined to be clean net profit (underlying, before write-offs etc); $ROE = \pi/K$; and K is capital – here taken as total capital. Regulatory arbitrage can be used to achieve the target ratio of RWA to TA consistent with the targeted ROE^* , where target $(RWA/TA)^*$ is $\pi/(ROE^*TA*0.08)$.

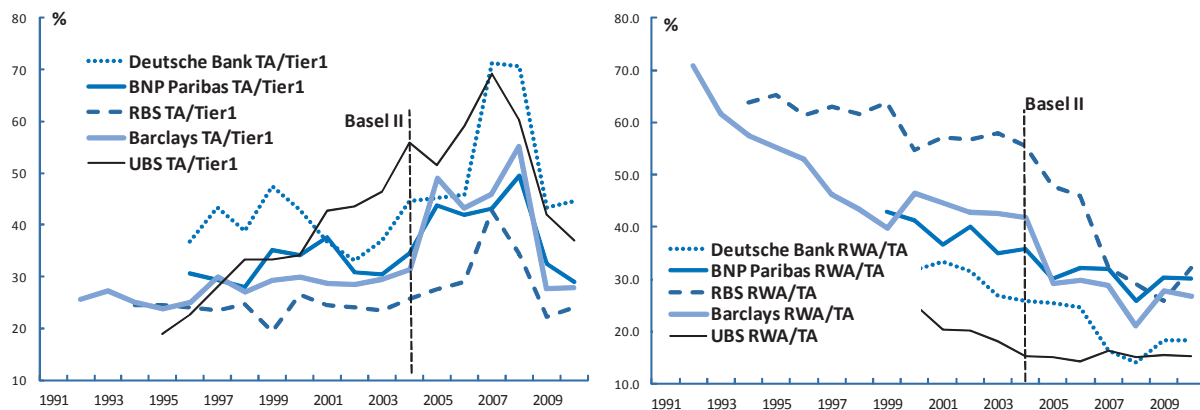
...helped along by their models

Sophisticated banks use of IRB models to determine risk weights and price derivative and exposures is integral to the process of influencing $\sum_i w_i A_i$, MR and OR in this process of shifting promises and obtaining capital relief.¹¹

This all shows up clearly in the data

Figure 14 shows the leverage ratio over time of some European GSIFIs, and their ratio of RWA to TA, in the lead up to the crisis.¹² After Basel II was introduced (shown by the vertical line), leverage accelerated quite dramatically – instead of having the desired impact of tightening capital rules and reducing leverage, regulatory arbitrage and the handing over of calculation of risks to GSIFIs actually had the opposite effect.

Figure 14. Some European Bank leverage and RWA/TA comparisons



Source: Authors' calculations based on bank reports' data.

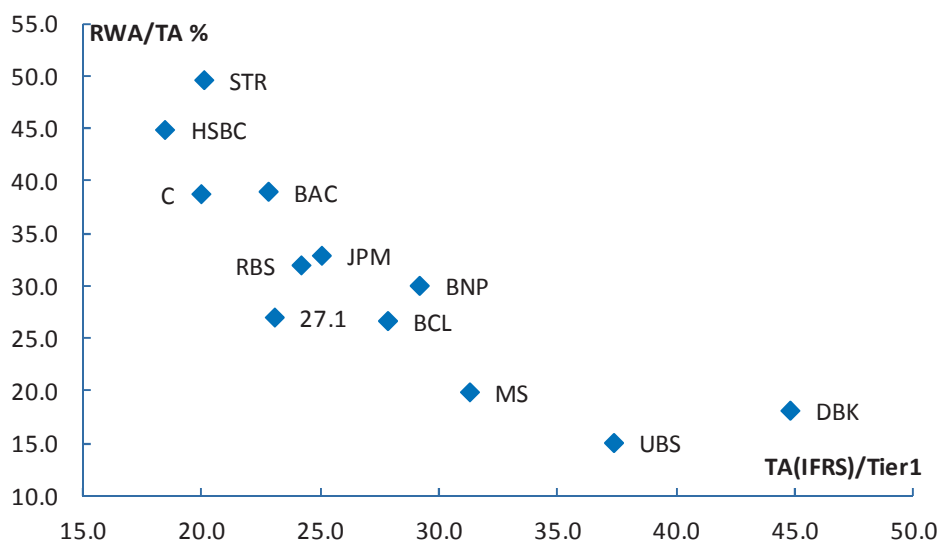
High RWA/TA banks have lower leverage

Figure 15 shows a cross section of European and US GSIFIs' RWA/TA and leverage ratios to Tier 1 capital, based on a more comparable IFRS accounting basis at Q4 2010. The negative trade-off between these two variables is very clear.

A binding leverage ratio is critical going forward

The Basel III process has proposed to have a “parallel-run” to calibrate a leverage ratio (*i.e.* a charge on TA, not RWA). This does not have the same status as the other settled rules. Only if a leverage ratio were to be implemented in an effective way would Basel III be able to contain overall leverage.

Figure 15. Leverage and RWA/TA compared: assorted GSIFIs



Source: Authors' calculations based on bank reports' data.

The proposal to impose a capital surcharge on GSIFIs agreed in late June 2011 (of up to 2.5%), as it applies to RWA only, is not an effective way to contain leverage. It would result in renewed pressure for GSIFIs to target ROEs via regulatory arbitrage.

Derivatives and counterparty risk

This section looks at derivative counterparty risk in the light of rising concentration, CCPs and the advent of the CVA charge.

No clearing: interest rate swap example

An example of simple interest rate swaps...

Figure 16 sets out a simple derivatives trade situation without clearing in the upper panel: it is a 10-year fixed 5% (shown by the dashed arrows) versus floating LIBOR (shown by the solid arrows) swap. The two GSIFI banks A and B undertake the swaps with counterparties C and D, each trade with a notional principal of USD 100m. GSIFIs A and B square up by hedging the reverse trade with each other.

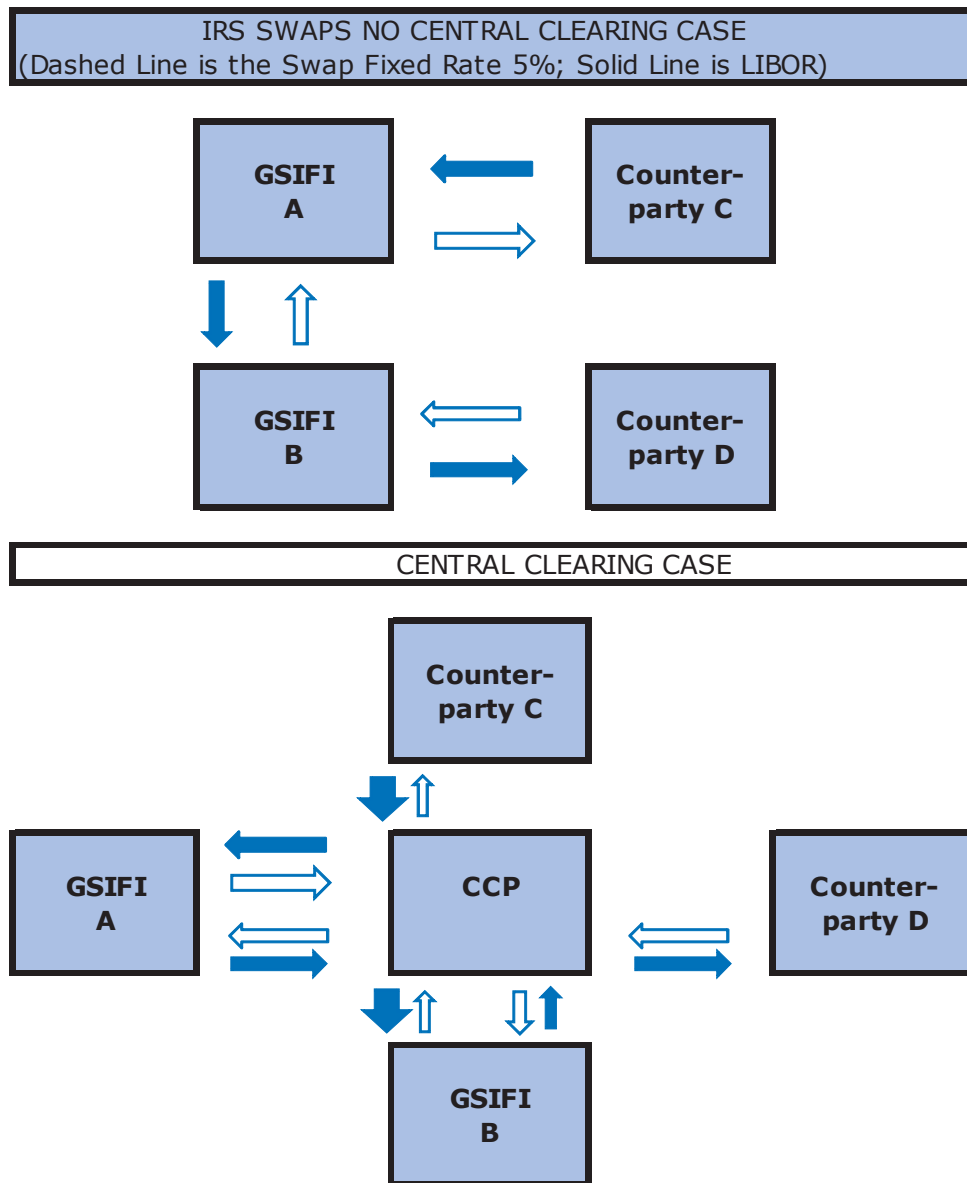
...shows the huge loss differences from volatility choice

- If the swap fixed rate rises by 1% p.a. (from 5% to 6%), the hedgers gain and the losses to the three players with fixed commitments (A, B and D) is the present value of the 1% over the 10 years, or USD 7.4m each, (USD 22.4m in aggregate).

- If a fixed rate spread move of 10% p.a. should arise (as has occurred in the EU crisis on sovereign debt), the loss to the payers of the fixed rate rises to USD 50.2m each, or USD 150m in aggregate (half of the notional value).

This illustrates that the CVA risk can be very large in unexpected stressed conditions, and it is highly unlikely that bank modelling for CCR and CVA will reflect this in an ex-ante sense. Banks never have a problem until they have a problem.

Figure 16. Interest rate swap example



*No clearing plus a netting set: GSIFI A (with IRS loss and CDS gain)**Netting against other products reduces exposure*

Now consider the case of GSIFI bank A, which is down USD 50m on the above IRS swap (the 10% move in rates) but is up USD 60m on a CDS position with counterparty C, where it has a netting agreement. This gives rise to a current net gain of USD 10m up.

Resulting in...

Without clearing, and following the above Basel III reforms, the GSIFI A would be holding the following capital for that portfolio:

CCR charge...

- The counterparty credit risk charge based on EPE of the entire portfolio using a stressed calibration, which would be additive to the market risk charge that applied under Basel II.

... and a CVA charge

- The CVA charge to address the mark-to-market losses based on LGD and PD, which is additive across netting sets.

*Problems with such capital charges**But these charges are based on banks' own modelling of the risks*

- This approach is reliant on bank risk models and the ability to input plausible volatility. This is typically based on history, and is always subject to surprise in the event of a new crisis. In the above example, the ex-ante model may use a 1% rise in rates with a USD 7.4m loss, but then be faced with an outcome of a 10% move in rates with a USD 50m loss. Furthermore, in the OTC market liquidity is a problem, with many non-standard contracts and mark-to-model instead of mark-to-market prices. This leaves considerable scope for judgement and distorted prices which are likely to favour the bank. It is difficult to specify a stress test that will capture events that arise in a crisis – particularly if it is to show the bank is under-capitalised.¹³ Risk is likely to be understated.

Credit spreads built in benefit from TBTF cross subsidisation

- Models rely on credit spreads at which counterparties can borrow for discounting future cash flows. If a variety of collateral is posted it must be discounted at a variety of credit, currency and liquidity risks. Where GSIFIs are concerned, the TBTF problem is present with the result that credit spreads are less than would apply to separate derivative trading entities that do not have access to retail/commercial bank capital and official and unofficial guarantees and support. Risk (particularly from the viewpoint of the taxpayer) is likely to be underpriced.

How do you model CDS with its binary outcomes...

- Some products are very difficult to handle in a model context, particularly CDS contracts that are only triggered by a default event which is impossible to predict in advance (no one saw the potential defaults of AIG and the actual defaults of Lehman, Hypo Real Estate, and others, until it was too late). The unexpected downgrades of AIG triggered large changes in value that, without intervention, would have wiped out the capital of the entity, suggesting that the initial capital requirements were much too low.

...or the correlation between such a binary outcome product and those that trade in continuous time?

- The risk models also rely on correlations, yet these are difficult to handle in practice. How does one model the correlation between an OTC CDS with a binary outcome dependent on a default event, with continuous-time derivatives pricing on deep liquid exchanges? Correlations are well known to change dramatically in stressed conditions – rising sharply and multiplying losses. Simply raising the ex-ante correlation between financial firms by 25%, as in Basel III, and asking banks to do better does not address the problem. Choices on correlation are prone to understate crisis risks.

In short, there is every reason to believe that IRB models used to define ex-ante risk weightings will cause crisis risk to be understated; they are helping GSIFIs to obtain capital relief (certainly compared to the simplified approaches available under Basel II and III).

Concentration risk and netting

The CVA charge rewards concentration with additive netting pools

Close out netting reduces exposures in the event of an actual default. In the above simple netting set example of USD 50m down on the interest rate swap and USD 60m up on the CDS, the most the bank could lose in a close out is USD 10m compared to the USD 60 in the absence of netting. However, that the CVA charge applies at the netting set level, and is additive across netting sets, means that it does not reward diversification of counterparties. Suppose bank A in Table 3 has multiple counterparties (two here for simplicity) and the gain/loss exposures are as shown. The CVA is additive and in the diverse counterparties case results in a positive capital charge related to the USD 10m and the USD -10m. In the single counterparty (larger netting set) case there is no exposure for a counterparty charge. More generally, the additive CVA gives no benefit for using a well diversified set of counterparties, and instead rewards risk concentration in a smaller number of counterparties.

Table 3. Netting and concentration

A. Diverse Counterparties		B. Concentration Case	
P1: Netting Set 1		One netting Set	
IRS up	100	IRS up	100
CDS down	-90	CDS down	-90
Net	10	IRS up	90
P2: Netting Set 2		CDS down	-100
IRS up	90	Net	0
CDS down	-100		
Net	-10		

Source: Authors' calculations.

Reduced diversification of counterparties and less capital means higher systemic risk...

The CVA charge in a netting context is therefore likely to reinforce concentration and the use of TBTF banks. That is, it will reinforce the trends towards the highly oligopolistic derivative markets illustrated earlier. Risk is increased, because diversification is reduced while capital to absorb unexpected large losses in a crisis is minimised.

*...and less
diversity of
pricing views*

Concentration also reduces market efficiency in the pricing of risks. Efficient pricing requires a diversity of views. However, it is precisely this that is undermined by rising concentration. The probability of mispricing risk is increased.

To give some idea of the enormity of netting some examples from US banks' 2010 accounts are illustrative: Bank of America had USD 1,519 bn in gross derivative assets, but with counterparty netting of USD 1,406 bn, and allowance for cash collateral, this reduces to only USD 73 bn. JP Morgan had USD 1,529 bn that nets to USD 80 bn. Citi had USD 654 bn that nets to USD 50 bn.

Clearing

*Clearing reduces
counterparty
default risk but
doesn't eliminate
losses*

The lower panel of Figure 16 shows the case for the interest rate swaps where all of the deals are entered into with the CCP, instead of bilaterally. The GSIFI payment streams will all cancel each other out, as shown by the sets of four arrows for each stream versus the CCP. Only the un-hedged counterparty D responsible for fixed yield flows to the CCP would have a USD 50.2m loss (in the case of the 10% spread move) with respect to the clearing house. In this way, clearing through the CCP greatly reduces the aggregate counterparty market risk.

The CCP gives rise to multilateral netting, which is something like Case B of Table 3 on a grander scale.

Problems still remain with clearing

*The rules about
clearing are
themselves
unclear, leaving
scope for banks to
resist*

- Mandatory clearing of standardised derivatives that trade on exchanges or via Dodd-Frank SEFs would increase transparency, and undermine the ability of the bank oligopoly to maximise profits via bid-ask spreads. This is a very difficult area where the way in which rules will be applied is unclear. Banks' resistance to this is assured, and likely to spark new forms of regulatory arbitrage (see below).

*GSIFIs dominate
flows so that
oligopolistic SEFs
are likely to
emerge*

- As shown earlier, in section III, there are between 6 and 14 GSIFIs that control the various USD derivative products (less for some other currencies). As these institutions dominate trading volume and control flows, they will likely also control an oligopolistic SEF market structure and the anti-competitive issues discussed previously are unlikely to be fully ameliorated.

*There is plenty of
scope for banks to
"play" with what
constitutes a
standardised
product*

- There is likely to be significant exemptions to the use of CCPs. Derivatives traded on exchanges are less than 4% of the total, and of the 96% OTC derivatives many are customised and not traded. Definitions are difficult here, and the scope for GSIFIs to ensure products are exempt from clearing is very large. Furthermore, it has now been determined that the (highly-volatile) foreign exchange swaps will be exempted from clearing under Dodd-Frank. These exclusions and scope for structuring products to avoid the intent of regulation will become very similar to the capital arbitrage via shifting promises outlined earlier.

CCPs face the same modelling risks as banks

- Placing the CCP between counterparties does not remove the modelling and concentration problems discussed earlier. Clearing requires both market prices and liquidity, with the clearer taking on risk. Setting initial margins and managing variation margin calls between clients (where these are not exchange traded) will require modelling and all of the associated problems discussed earlier.

CCPs may likely compete on margin requirements, raising risk – and concentrating trades in CCPs makes them TBTF, too

- Where standard products can be cleared, it is likely that the CCPs will follow the patterns discussed earlier for the trends in derivative market concentration in the lead up to the crisis and its aftermath. That is, they will likely compete at first on initial margin and variation margin rules. If risk is underpriced as a result of this process, then large losses could wipe out an undercapitalised CCP, and require it to be rescued by another CCP, or via the taxpayer. Indeed, the TBTF problem has in effect been transferred in part to the CCP, with every chance that it will underprice risk and generate future problems. A CCP linked with many banks and trades certainly cannot be allowed to fail.

Non-standard OTC remains

- OTC products not subject to clearing will remain, and are in any case still quite capable of leading to another systemic crisis.

Summary

The above analysis suggests that the reforms of Dodd-Frank and Basel III may not sufficiently address interconnectedness and excess leverage risks associated with GSIFIs. This group of banks is able to shift promises with derivatives to avoid capital charges tied to RWA by managing the ratio of RWA/TA and thereby leverage their balance sheets with ROE objectives in mind. A GSIFI surcharge tied to RWA, therefore, will not be an efficient approach to increasing their capital.

Counterparty risk was considered, and it was shown that CVA risk could be very high, and that banks ability to model this and hold sufficient capital to absorb extreme crisis scenarios is technically problematic and likely to lead to an underpricing of risk because:

- cross subsidisation implicit in the spreads when dealing with TBTF banks;
- scope for gaming standard versus non-standard products;
- poor risk models that always show ex-ante risks as less than ex-post crisis outcomes;
- CCP competition based on margin requirements;
- growing concentration in derivatives markets and/or clearing which reinforces TBTF while raising the scope to reduce the CVA charge;
- increased concentration resulting in less diversity of views and inefficient pricing.

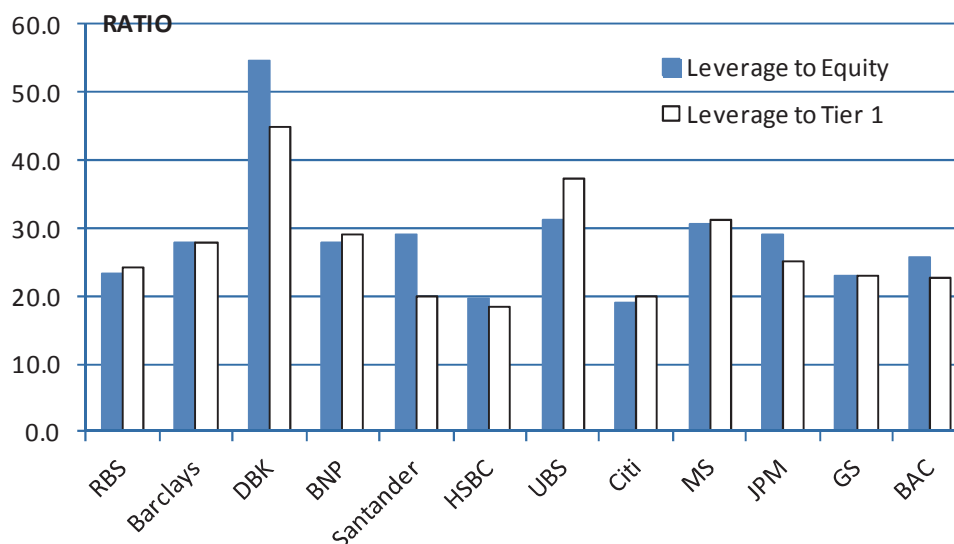
VII. Containing derivatives and leverage: policy requirements

A leverage ratio

US banks are only a little less levered than EU banks when netting is taken into account

US GAAP accounting permits derivatives subject to netting agreements to be reported on the balance sheet on a fully net basis to measure TA. IFRS includes fair value exposures in TA with very limited netting.¹⁴ Figure 17 shows leverage to Tier 1 capital and to equity less goodwill for US and European banks on a more comparable basis – with derivatives before cash collateral and counterparty netting added back in for the US banks. US banks look similar to other European banks on this basis. The EU banks shown still have on average less capital than US banks, 2.9% vs. 4% of assets in the case of equity less goodwill, and slightly closer if Tier 1 is used (the EU uses more hybrids). The UK banks on average are slightly more capitalised than US banks, and significantly better than the EU group.

Figure 17. Comparing US and European banks' leverage



Source: Authors' calculations based on bank reports' data.

Current RWA/TA ratios imply perverse incentives if a leverage ratio is not fully binding

From this more comparable starting point, the Basel framework has already induced a perverse incentive structure, which results from the very different current ratios of RWA/TA. Table 4 shows the time profile of the different Basel capital ratio requirements in the upper panel. The lower panel for individual banks shows the maximum permitted leverage ratio of TA to core Tier 1 plus buffer (the toughest essentially equity-based Basel concept). These are constructed by assuming:

- Constant balance sheets for the TA of each bank to 2019;
- That the bank shown holds its ratio of RWA/TA at the current level (shown in the table) until 2019.

*Less levered
banks will be
more constrained
than highly-
levered banks!*

While maximum permitted leverage is reduced significantly over time, all banks are affected very differently. The range of outcomes is 29 times to 95 times Core Tier 1 plus buffer capital. Interestingly, the three banks that would face the toughest constraints (Santander, HSBC and BAC) are the least leveraged banks in the group.

HSBC, Santander and BAC have a high share of amortised cost accounting assets, such as loans, and a lower share of derivatives and/or other assets at fair value through profit or loss. The banks with high shares of the very products most associated with the crisis (and the AIG payouts) are the least constrained in terms of leverage. It is also worth noting that current leverage ratios are all below the maximum permitted even at the end of the process by 2019, with the one exception of Santander.

Table 4. Basel regulations and the time profile of restrictions for individual banks

Cap. Rules Decided	Regulatory Capital Requirements Time Profile						
	2013	2014	2015	2016	2017	2018	2019
Core T1/RWA	0.035	0.04	0.045	0.045	0.045	0.045	0.045
Core+Buffer/RWA	0.035	0.04	0.045	0.05125	0.0575	0.06375	0.07
T1/RWA	0.045	0.055	0.06	0.06	0.06	0.06	0.06
Lev ratio proposed	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Maximum Leverage for the Core Tier 1+Buffer Reg. for a Constant RWA/TA Assumption							
RBS RWA/TA	0.320						
Maximum Lev. ratio	89.3	78.1	69.4	61.0	54.3	49.0	44.6
Barclays RWA/TA	0.267						
Maximum Lev. ratio	107.0	93.6	83.2	73.1	65.1	58.8	53.5
DBK RWA/TA	0.182						
Maximum Lev. ratio	157.0	137.4	122.1	107.2	95.6	86.2	78.5
BNP RWA/TA	0.301						
Maximum Lev. ratio	94.9	83.1	73.8	64.8	57.8	52.1	47.5
Santander RWA/TA	0.497						
Maximum Lev. ratio	57.5	50.3	44.7	39.3	35.0	31.6	28.7
HSBC RWA/TA	0.449						
Maximum Lev. ratio	63.6	55.7	49.5	43.5	38.7	34.9	31.8
UBS RWA/TA	0.151						
Maximum Lev. ratio	189.2	165.6	147.2	129.2	115.2	103.9	94.6
Citi RWA/TA	0.388						
Maximum Lev. ratio	73.6	64.4	57.3	50.3	44.8	40.4	36.8
MS RWA/TA	0.199						
Maximum Lev. ratio	143.6	125.6	111.7	98.1	87.4	78.8	71.8
JPM RWA/TA	0.329						
Maximum Lev. ratio	86.8	76.0	67.5	59.3	52.9	47.7	43.4
GS RWA/TA	0.271						
Maximum Lev. ratio	105.4	92.3	82.0	72.0	64.2	57.9	52.7
BAC RWA/TA	0.39						
Maximum Lev. ratio	73.3	64.1	57.0	50.0	44.6	40.2	36.6

Note: These calculations ignore the Basel Committee's decision of 25 June 2011 to impose a 1-2.5% capital surcharge on GSIFIs (see endnote 2).

Source: Authors' calculations based on bank reports' data; BCBS.

These calculations illustrate a perverse incentive for banks looking to maximise their ROEs. If banks are prepared to bet that a leverage ratio will not eventuate in a meaningful form, then low-leverage banks will be able to grow their derivatives business and reduce their ratio of RWA/TA in line with the more highly leveraged banks in the group – exactly what the avoidance of future crises should seek to avoid.

A 3% leverage ratio based on equity capital only and the IFRS measure of TA is a critical reform

The OECD Secretariat has long backed the need for a leverage ratio, where the IFRS concept of derivatives exposure is used in the measure of TA.¹⁵ On this basis, the *parallel run* idea of a 3% ratio, provided it is based on equity capital, would be a reasonable starting point. The idea that a leverage ratio discriminates against low-risk assets is rejected by the above analysis. The crisis amply demonstrated that in the age of complete markets in credit, there is no such thing as ex-ante fixed risk weights. The ability of financial firms to transform risk at will to obtain capital relief while expanding leverage is a risk in itself that needs to be dealt with by a leverage ratio.

Interconnectedness risk: raising CVA further versus a Tobin tax

Raising CVA isn't an efficient approach

In principle, the problem of too much interconnectedness risk via derivatives could be dealt with by raising the CVA to a level that fully offset the underpricing of risk. However, the efficiency of the charge would over time be reduced as it would reinforce the trends in concentration to expand netting sets with GSIFI domination of flows, including SEFs and CCPs.

A derivatives transactions tax is better targeted.

Historically, the OECD has been against a general Tobin tax due to the negative impact it could have on liquidity in otherwise open and transparent markets. While this view still stands, it is worth considering whether a transactions tax in the form of a regulatory charge could not be applied to the OTC derivatives market.¹⁶ The charge could be accumulated in an insurance fund to help underwrite the solvency guarantee of CCP's. The rationale for this more targeted approach is as follows:

- The OTC market is already characterized by illiquidity, so the standard objection may not apply or matter.
- The charge would raise the cost of derivatives, resulting in higher bid/ask spreads in the OTC markets to cover the additional cost. This would reinforce the demand for standardisation, clearing and trading on exchanges.
- The incidence of the charge would fall more on active trading of a short-term gambling/churning nature in those institutions where such trades were concentrated, rather than on longer-term final user hedging in the corporate sector. It would lengthen the holding period of derivative products.
- Such a charge would help to reduce the trend towards less socially useful derivatives activity implicit in the parabolic trends shown in section II.

Either of these measures should be seen as a direct response to the under-pricing of risk and the TBTF issue discussed above—a 'subsidy' offset by the 'charge'.

Interconnectedness risk: separation of entities

Perhaps the most important reform of all is to separate investment banking from retail and commercial banking

If a Tobin style tax is rejected, another approach would be to allow existing market mechanisms to better manage interconnectedness risk, without the need for regulatory intervention, via initial margins, variation margin and the cost of liquidity provider channels. This could be achieved by breaking up GSIFIs so that derivatives were only traded by entities that are legally separate from retail banking and commercial banking activities – not unlike the Dodd-Frank treatment of certain exotic OTC swaps. The OECD Secretariat has long supported the idea that key investment banking and dealer activities should be carried out within a strict subsidiary structure – a non-operating holding company (NOHC) with firewall provisions.¹⁷ The US Dodd-Frank Act has gone some of the way in this direction with the treatment of certain swap entities and the Volcker rule.¹⁸ The point of separation is to make it clear that deposit insurance and government bail-out mechanisms will not apply to the derivatives entity, which would not be bailed out in the event of a crisis, and where transfers of capital and securities between the different entities within the group would be prohibited or subject to regulatory approval. This would ensure that collateral requirements of counterparties and clearing houses would be based on the clear understanding that the entity trading derivatives would be separately capitalised (and hence more expensive) and not a beneficiary of implicit or explicit government guarantees. Liquidity provision for posting collateral would occur in an arms-length manner or (preferably) with third parties. Collateral requirements and liquidity finance would be based on a much better appreciation of the risk that the entity could fail and cross subsidisation from TBTF would cease. The cost of transacting derivatives business would rise.

Far from this being perceived as a problem, it should be seen as a counterbalance to the systematic underpricing of risk and the undercapitalisation of financial institutions – which were the most fundamental basic causes of the global financial crisis.

VIII. Concluding remarks

OTC derivatives have grown massively...

This paper has looked at the GSIFI issues with a particular focus on their derivatives businesses. These businesses are almost entirely based on OTC products. Interest rate derivatives are a huge business that has been driven by cyclical market factors and by a very wide menu of tax and regulatory arbitrage.

...have become very concentrated...

There has been a trend towards greater concentration in the derivatives businesses. Barriers to entry have risen with TBTF, smaller players being squeezed via regulatory reform, and the increasingly complex nature of risk control and execution platforms. GSIFIs are also in a good position to be the controlling members of CCPs, and will likely dominate SEF flows.

...while regulator have not been able to deal with the issues, and may have introduced

The Basel system was ineffective in ensuring that banks had sufficient capital before the crisis, and the recent changes in Basel III contain such flaws that banks will always be able to engage in regulatory arbitrage. Concentration trends increase the size of netting pools, which economises on capital, and the additive nature of the CVA capital reform will reinforce this process.

new risks

Concentration also reduces the diversity of views in the OTC derivatives markets and along with the other factors discussed in this paper increases the chance of mispricing risk.

The most urgent problem is inter-connectedness

The most urgent problem facing the financial reform process is the need to deal with the growing interconnectedness of GSIFIs as concentration in the derivatives business rises and as overall leverage remains relatively unconstrained.

There are three main options for reform

A GSIFI surcharge on RWA is a very inefficient and ineffective way to address this problem, due to the ability of banks to transform risks and reduce the ratio of RWA to TA, thereby economising on any capital charge linked to RWA and raising leverage. The main policy options for dealing with leverage and interconnectedness risk are:

- A leverage ratio with IFRS accounting for TA – which is essential, and should not be undermined and emasculated in the *parallel run* exercise.
- An increase in the CVA charge or an OTC derivatives transaction charge, the incidence of which would fall mainly on GSIFIs and regulatory arbitrage and gambling activities, as opposed to longer term hedging by end users.
- The separation of certain investment banking activities that deal in OTC derivatives from retail and commercial banking (in order to avoid cross subsidisation from explicit and implicit guarantees and the TBTF problem).

Hasty generalisations about regulatory impact in the current macro environment miss the point

An argument is often made that asking GSIFIs to hold much more capital and/or higher collateral margins would risk prolonging full recovery from the crisis. This hasty generalisation from recent economic data is not based on the correct counterfactuals. Since 1998 gross derivatives have grown at 9% p.a. compared to world nominal GDP at 3% p.a. Gross derivatives as a share of GDP have compounded up to ten times world GDP versus three times GDP in 1998 – and the benefits for improving real economic activity and reducing risk of this explosive growth are anything but evident. Primary assets that actually fund growth, and on which derivatives are based, have remained stable at around two times GDP through this period. A major reason why derivatives and leverage have built up since 1998 is because risk has been chronically underpriced. Had derivatives growth and leverage been more effectively constrained, the systemic risks would have been commensurately smaller. It seems odd to argue that the aftermath of a crisis facilitated by an ineffective regulatory framework and the underpricing of risk should be ameliorated by sticking with more of the same to help the economy in the short run.

Notes

1. See OECD (2009), Blundell-Wignall *et al.* (2009, 2010); and many more.
2. See the press release “Measures for global systemically important banks agreed by the Group of Governors and Heads of Supervision”, 25 June 2001, available at <http://www.bis.org/press/p110625.htm>.
3. The correct concept to examine for the purposes of this paper is the notional value of outstanding derivatives, the size of which is the exposure of financial institutions to price risk. It also reflects the potential command over assets and resources that clients have, and is the basis on which fees are paid to broker/dealers. The close out value of vast derivative position – in the money and out of the money – could in principle be zero, giving a highly misleading picture of the derivatives market in terms of its role in the economy and the risks attached to it.
4. See Blundell-Wignall and Atkinson (2008), and UBS (2008).
5. The Herfindahl index sums squared shares expressed in percentages across all firms, and is expressed as an index with a maximum score of 10 000. A score of 10 000 would imply 1 firm supplies the market. The index is interpreted as the reciprocal of the index times 10 000, which is equivalent to the number of firms with equal share that are providing the service.
6. This is noticeably more concentrated than is for bank-to-bank transactions addressed in Figure 5.
7. And the notable failure of Bankers Trust allowed DBK to take a strong position in US investment banking.
8. There have also been rumours of collusive behaviour in the derivatives market; see Story (2010).
9. This is an extremely complex issue and no one will know the ultimate answer. State laws ring fence insurance subsidiaries in the USA. Had AIGFP been allowed to fail, then the cost of helping the EU GSIFs would have fallen to the governments there and the ECB. The US government and Fed would have had bigger problems to deal with in bailing out the US GSIFs shown in the table. Similarly, some large GSIFs on the list claim they were not really exposed as they bought CDS protection against AIG. However, risk can only be shifted, not eliminated from the system. The firm in question would have purchased CDS on AIG from other GSIFs in the group, simply pushing even bigger problems onto them, in a zero sum game.
10. The notional of the bond is the EAD of the counterparty, (treated as fixed); the maturity of the ‘bond’ is the effective maturity of the longest dated netting set of a counterparty; and the time horizon is 1-year (as opposed to the 10 day period for MR).
11. If banks could not reduce capital below the default regulation option by using the IRB models, they would not use them and would opt for the simplified system.
12. US banks are excluded from this time series due to IFRS – GAAP accounting issues.
13. Witness the August 2010 EU bank stress test, which was found wanting conceptually and was overtaken by unforeseen events within days; see Blundell-Wignall and Slovik (2010).

14. There must be an intent to settle on a net basis, or to realise the asset and settle the liability simultaneously.
15. See OECD (2009).
16. Such a very small charge applies in Germany.
17. See OECD (2009).
18. At the time of writing there are also press reports that the Swiss regulator favours some form of separation for its banks IB activities. The UK is also considering ring-fencing retail banking activities. See Independent Commission on Banking (2011).

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Guarantee Arrangements for Financial Promises: How Widely Should the Safety Net be Cast?

by

Sebastian Schich and Byoung-Hwan Kim*

Guarantees have become the preferred instrument to address many financial policy objectives. The incidence of financial sector guarantee arrangements that address specific policy objectives, such as supporting financial stability, protecting consumers and influencing credit allocations, has increased markedly over the past decades and additional schemes are under consideration. This report identifies considerations regarding consistency and affordability that policymakers should take into account before introducing additional guarantee arrangements. One of them is that the safety net cannot be expanded without limits. In fact, as regards the strength of the net of government-supported guarantees for financial promises, the wider that net is cast (without altering its other key parameters), the thinner it becomes.

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Executive Summary

Guarantees have become the preferred instrument to address many financial policy objectives. The recent financial crisis has put the spotlight on the use of guarantees as a policy tool to support financial stability. But arrangements that guarantee certain financial claims exist even during normal times. Many of them reflect the pursuit of specific financial policy objectives other than supporting financial stability, such as protecting consumers or influencing credit allocation to achieve preferable outcomes.

A key finding of this report is that guarantee arrangements for financial claims, including in particular those that provide protection against the risk that a counterparty to a financial contract will not make the promised payment to the other party due to institutional failure or other reasons, have become an intervention mechanism of choice to address the various policy objectives mentioned above. As a result, the incidence of such arrangements has undergone a marked increase over the past few decades.

Policy makers are currently considering additional guarantee schemes for specific types of financial claims. In each case, guarantee arrangements would address a different mix of financial policy objectives and cover different types of risk; thus, the pros/cons of and the alternatives to introducing a new arrangement differ depending on the type of claim under consideration. That said, some considerations are common to all guarantees, and this report proposes a simple general framework consisting of four criteria (effect on incentives, effect on competition, consistency, and affordability) that policy makers should take into account when considering the introduction of new guarantee arrangements. The report argues that consideration of these four criteria implies, among other things, the following:

First, explicit guarantees are preferable to implicit ones. The case for establishing explicit guarantee arrangements is stronger if an implicit guarantee already exists, and for whatever reason, cannot be withdrawn. An explicit guarantee improves on that situation in that it allows one to define what the outer limits of the guarantee is, in terms of what is protected and what is not. Moreover, it allows one to charge an appropriate premium in exchange, which is difficult if not impossible in the case of an implicit guarantee. Explicit, ex ante funded guarantees can limit the need for undifferentiated ex post bailouts.

Second, some guarantees or the interaction between them could give rise to undesired effects. The final effect of the safety net in terms of protection and risk-taking is uncertain. While this observation applies already to individual specific guarantees, the complexity increases when considering the net of various (explicit and implicit) guarantees. Special efforts on the part of policy makers are needed to ensure internal consistency in the net of guarantee arrangements, as well as its consistency with the regulatory and resolution framework. There is a risk that elements of the safety net, especially when ill-designed, give rise to moral hazard and thus create additional risk-taking and vulnerabilities further down the road.

Third, the safety net cannot be expanded without limits. As regards the strength of the net of government-supported guarantees for financial promises, the wider that net is cast (without altering its other key parameters), the thinner it becomes. This observation is particularly relevant at a time when mature economies are faced with mounting challenges of fiscal sustainability. In this context, the recent sovereign debt stresses have underscored that more consideration needs to be given to how to protect sovereign risk from specific financial-sector risk, given expanding government guarantees. Even when arrangements have private origins, and when there is limited explicit public support, expectations may be that they enjoy implicit government support (under some circumstances at least), and these expectations are difficult to counter.

Fourth, guarantees need to be limited and affordable. To make the net affordable, its outer borders need to be clearly defined and appropriate measures need to be adopted so that financial claims are being protected without undue burden on the taxpayers, who implicitly or explicitly, are the ultimate underwriters of many of these arrangements.

I. Introduction

The extension of government-supported guarantees for financial claims was a key element of the policy response to the financial crisis

The financial systemic safety net was at the core of the policy response to the recent financial crisis, with the safety net being adjusted significantly in response to that crisis. Much of that adjustment consisted extending the scope of the lender-of-last-resort and deposit insurance functions, which was reflected in increases of central bank balance sheets, the introduction of new officially supported guarantees and the expansion of existing ones. The government and the central bank together, in line with their roles as ultimate providers of capital and liquidity in a situation of a systemic crisis, acted as guarantor of last resort for financial claims on (and held by) financial institutions, especially where the latter were considered systemically important. This policy was an extraordinary response to an extraordinary financial crisis.

But a variety of guarantees exist even during normal times

But a variety of government-supported arrangements that provide guarantees for certain financial claims exist even during normal times, and they address several different financial policy objectives. In addition to safeguarding the stability of the system, these arrangements protect consumers and investors and influence the allocation of credit, with many of them providing protection against the risk that a counterparty to a financial contract will not make the promised payment to the other party due to institutional failure or other reasons

In fact, a key finding of this article is that the incidence of such arrangements has undergone a marked increase over the past few decades. That said, the incidence, scope and design of such arrangements differ from one country to another, and within countries, from one type of financial claim to another.

Now is a timely opportunity to question the role of guarantee arrangements for financial claims

Many extraordinary guarantees introduced in response to the crisis have been or will be withdrawn, a development that requires policy makers to define what the net of (explicit) government-supported guarantees for financial promises should look like in the future. In fact, now is indeed a timely opportunity to question the role of guarantee arrangements for financial claims, which claims are considered worth protecting and for what reasons, and how far such protection should go. In particular, how widely should one cast the net of government-supported guarantees for financial obligations?

This question is relevant as there has been an increase in the incidence of guarantee arrangements, motivated by such concerns, and it is uncertain whether the recent financial crisis will reinforce (or break) this trend. Obviously, the existence and modalities of the various guarantees affect the functioning of financial markets. What is not so clear, however, is the net overall effect of the various guarantee arrangements on the different types of actors and their incentives, in terms of stability, consumer protection, resource allocation and risk-taking. In fact, there is little if any comprehensive research available on the incidence (let alone the role and overall effects) of government-supported guarantees within financial systems, taking into account the whole range of financial claims to which such guarantees are attached.

This article aims to facilitate that discussion

This article is a first attempt to fill that gap, by providing an overview of some common types of guarantee arrangements, focusing only on those arrangements that are commonly observed at the domestic level. Policy makers

are currently considering the introduction of additional specific guarantee arrangements, especially to protect consumers (see section III of this report). In this context, this report does not weigh in on the desirability of any specific type of guarantee arrangement; it does however provide (in section IV) some considerations that policy makers should take into account prior to establishing specific new guarantee arrangements. Some tentative suggestions are provided in section V.

II. Some common guarantee arrangements for financial claims

1. Overview

Well-functioning financial systems enhance the overall efficiency of resource- and risk-allocation in the economy, both spatially and inter-temporally. By facilitating the allocation of resources and risks through time, as well as between different entities (to those most willing and, hopefully, capable of managing them), financial institutions facilitate growth in real activity, capital formation, and wealth accumulation. Companies and individuals can then undertake projects in which they would otherwise not be willing to engage owing to the risk involved. Individuals can smooth consumption over and they can insure against a variety of different risks, including those related to retirement funding. Risk exposures are pooled and aggregate losses shared across the economy more effectively than without a functioning financial system. By contrast, when financial institutions and markets are not performing well, real activity is adversely affected.

The recent financial crisis has revealed shortcomings in the functioning of guarantee arrangements for financial claims

The recent financial crisis has revealed a whole range of issues related to the functioning of financial systems and the adequacy of the institutional, regulatory and supervisory infrastructure surrounding their activities. Several of these issues relate to guarantee arrangements for financial claims:

- The design of some of these arrangements has turned out to be inadequate, failing to achieve the desired effect when needed.¹
- Other types of guarantees became unavailable at the moment when they were most needed.²
- Yet other guarantees have proven to be counterproductive (more on this issue later).

Guarantee arrangements exist for different types of financial claims, often addressing specific financial policy objectives

Guarantee arrangements exist for different types of financial claims, and they are thus related to different types of financial functions. Such arrangements address financial market inefficiencies (although sometimes they can create others), and many of them reflect attempts to fulfil one or several specific financial policy objectives, including:

- safeguarding the stability of the system;
- protecting consumers and investors; and
- addressing market failures that impede a more preferable allocation of resources.

2. Institutional failure and the role of guarantee arrangements

Financial contracts involve uncertainty

Financial contracts often involve both time and uncertainty. Many contracts require one or several initial payments from one party to another, typically to be offset by subsequent payments in the opposite direction. The offsetting payments are either explicitly state-contingent (*e.g.* in the case of dividends from equity investments, claims on insurance contracts, defined-contribution pension fund policies) and/or implicitly subject to complete or partial default (*e.g.* in the case of bond obligations, defined-benefit pension fund policies).

The parties have conflicting interests and information is incomplete

During the lifetime of a financial contract, the two parties involved have conflicting interests. Moreover, one party often knows something that the other party does not; in other words, the information is asymmetric and hence incomplete. Information may be complete when the transaction is agreed upon. But subsequently, one party might take an action unobserved by the other party or receive information relevant to the transaction that the other party does not have (moral hazard with hidden action or hidden information). Or, information may be incomplete from the start of the contract; that is, one party may be aware of some significant information related to the transaction while the other party is not (adverse selection).

The specific risks involved differ very significantly from one type of financial contract to another. Some contracts involve a single or several payments on demand, while for others, such payments are at pre-specified intervals or contingent on other factors. Some products have very short-term life spans, while others, such as those related to retirement savings or life insurance, span long time horizons. As a result of these differences, and the differences in the risks inherent in the balance sheets of the financial institutions that are the typical counterparties to such contracts, each type of financial claim faces vastly different risks.

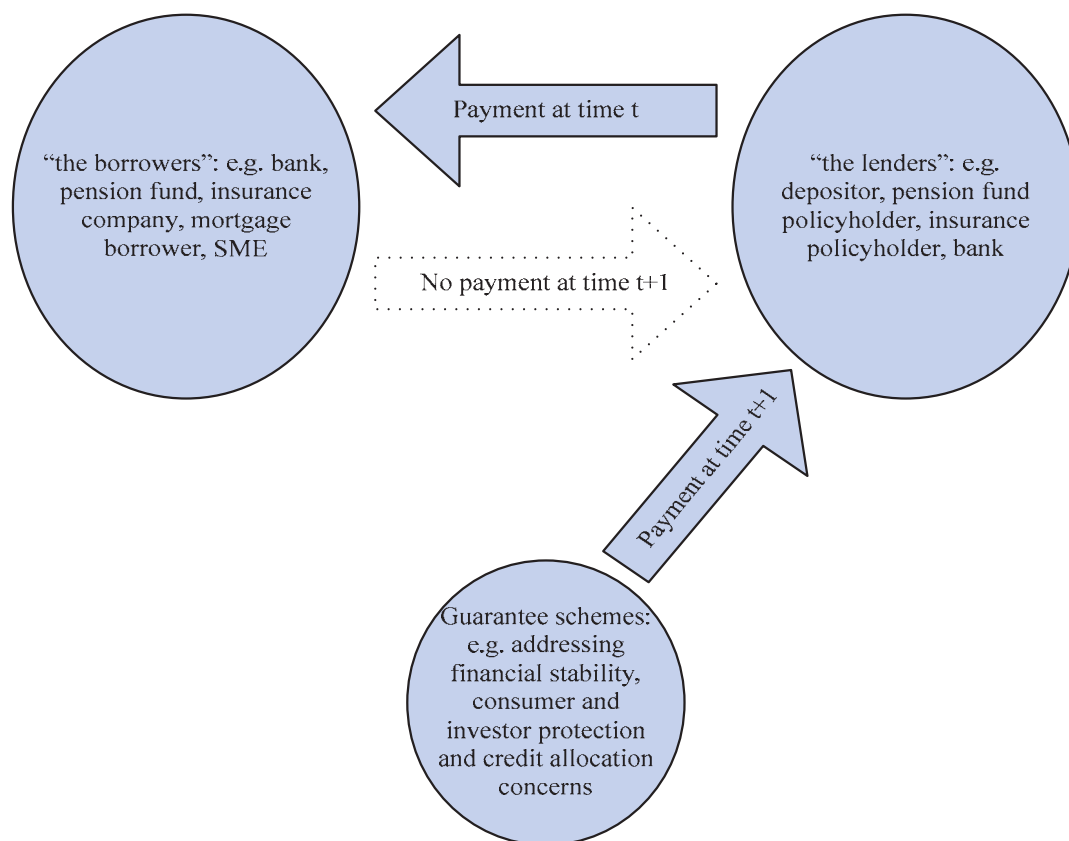
Contracts cannot typically be structured so as to take into account every possible contingency

That said, what is common to many financial contracts is that it is generally not feasible to structure them so that they can handle every possible contingency that may arise during the life of the financial transaction. As a result of this contractual incompleteness, the financial system may not be providing its various functions efficiently, and this situation can justify government intervention.

A significant risk is that of counterparty credit risk, and many guarantee arrangements address that risk

One type of intervention consists of government support for establishing, managing or funding guarantee arrangements for financial claims. Many (though not all) guarantee arrangements, be they private or public or a mixture of both, essentially substitute for the “borrower” under some circumstances (Figure 1), especially when the “borrower” does not make the promised payment(s) to the “lender” because of institutional failure or other reasons. Such guarantee arrangements indeed exist for a variety of financial claims and some of them address specific policy concerns, although the mix of policy objectives differs from one type of guarantee arrangement to another. A stylised overview of common arrangements is provided in Table 1.

Figure 1. Stylised view of the role of guarantee arrangements for financial claims



3. Policy objectives pursued through guarantee arrangements

a) Safeguarding the stability of the system

Deposit-taking banks have been considered key to the stability of the financial system

Banks have traditionally been considered special by policy makers for two main reasons: (1) their key role in the payment and settlement system and the transmission of monetary policy; and (2) their particular balance sheet structure, which involves lending long-term on the basis of deposits that can be withdrawn on short notice. As a result of this mismatch in maturities, a bank is typically unable to satisfy *all* legitimate claims for deposits at any one time, which implies that being among the first to withdraw deposits is preferable should questions about the solvency of a bank arise. Experience shows that depositor and creditor confidence can erode quickly, and this may have a severe effect even on relatively healthy institutions. As a result, so-called bank runs can and do occur.

To avoid such runs and maintain confidence, depositors and creditors require timely assurance regarding the safety and availability of their deposits and claims. An effective deposit insurance arrangement provides such assurance. The deposit insurance function, together with the lender-of-last-resort function and the regulatory and supervisory functions constitute the so-called financial (system) safety net, which is meant to ensure the safety of the system.

Due to the particular nature of their liabilities, banks are typically exempt from general bankruptcy procedures; instead, special resolution regimes often apply. Where such regimes exist, it has been shown that involvement by the deposit insurer tends to dampen the negative (moral hazard) effect that deposit insurance has on banks' risk-taking. Indeed, in several cases, resolution of a problem bank is undertaken by the deposit protection agencies.

Table 1. Categorisation of guarantee arrangements for selected financial claims

Type of claim	Institutional involvement	Type of guarantee arrangement	To the extent guarantees address policy concerns, the concerns addressed include...		
			...financial stability	...consumer/investor protection	...influencing credit allocation (and other motives)
Retail deposits	Liability of bank	Deposit insurance	Yes	Yes	
Insurance policy	Liability of property/casualty insurance company	Policyholder and beneficiary protection		Yes	
Life insurance policies	Liability of life insurance company	Policyholder and beneficiary protection		Yes	
Securities	Assets of clients held by securities firm	Securities holder protection		Yes	
Defined benefit pension claims	Defined benefit (or hybrid) pension funds	Pension benefit guarantee		Yes	
Loans to small and medium-sized enterprises	Assets of banks	Credit guarantee			Yes, to improve credit access
Mortgage credit	Asset of specialised mortgage lender or bank	Mortgage credit insurance		Yes?	Yes, to improve credit access and increase home-ownership

Note: Most of the arrangements shown here provide compensation when the "borrower" does not make the promised payment to the "lender" because of institutional failure or other reasons. Investor protection arrangements are different from the other types of guarantees listed above, in that coverage does not relate directly to either the asset or liability side of the financial institutions' balance sheet. Investment return guarantees tend to be a common feature in products with a savings element sold by life insurance companies, although the guarantees are underwritten by the insurer and there are typically no separate guarantee arrangements.

Source: OECD Secretariat assessment.

A distinguishing feature of the response to the recent crisis has been the heavy reliance by the government on guarantees as part of its headline support for the financial system. The measures that were undertaken by many governments in support of financial institutions included ones that effectively transformed implicit guarantees covering financial institutions' liabilities into explicit and sometimes blanket guarantees, thereby enlarging the financial system safety net – resulting in the *de facto* creation of an explicit guarantor of last resort. Banks were the main beneficiaries of this new function, and a lingering question is whether the other elements of the safety net need to be further adjusted so that banks pay an effective premium in exchange for that new function (Schich, 2011).

Parts of the safety net were made available to non-bank financial institutions during the crisis

But this crisis has also highlighted that the nature of the liabilities of financial institutions other than banks can make these entities vulnerable to run-like behaviour on the part of creditors or other counterparties (Annex 1). Thus, while the financial system safety net traditionally focused on deposit-taking institutions, in this crisis aspects of that safety net were also made available to other types of financial institutions, partly also because the latter were significant counterparties of banks, in effect making them also systemically important.

b) Protecting financial consumers and investors

Financial stability is positive for consumers, but it is unlikely to be sufficient

Financial stability is positive for consumers of, and investors in, financial products. Thus, ensuring the stability of the financial system and institutions is the most basic way to protect consumers and investors. But this approach is unlikely to be sufficient. In fact, a variety of regulatory measures directly address concerns regarding the protection of financial consumers and investors (see Box 1).

Box 1. A sharpened focus on financial consumer protection

As a general rule, disclosure rules and transparency requirements figure prominently among (financial) consumer protection measures. Disclosure is necessary to allow for informed choices on the part of financial consumers and investors. It is not sufficient, however. Consumers and investors also require the capacity to effectively use the information received to make the appropriate choices, given their own specific needs and risk tolerance levels. Recent research has highlighted that consumers may not behave as time-consistent, rational utility maximisers and that consumers often have present-biased preferences (see e.g. Campbell et. al., 2010). Thus, measures other than just disclosure may be required under these circumstances.

Regulations to protect financial consumers have also received greater emphasis in the context of the recent global financial crisis. For example, some observers argue that ill-informed choices by consumers in the increasingly complex mortgage market contributed to the buildup of unsustainable housing-market-related developments in the United States, which were at the core of the financial crisis.

Perhaps more fundamentally, there is concern that consumers are being asked to take increasingly more direct responsibility for their own financial well-being during retirement, and that many households are not well prepared for this task. Enhancing the capacity of households to make such choices is the explicit aim of the OECD's ongoing "financial education" efforts, and these efforts support the comprehensive consumer protection measures aimed at creating an improved framework for financial institutions to offer appropriate products and services.

Specific measures to protect consumers if a financial institution fails include the provision of explicit guarantee arrangements

In addition to the measures discussed in Box 1, other measures protect consumers and investors in case of failure or insolvency by financial institutions. Examples are the specification of priority rankings for different types of creditors and guarantee arrangements that fully or partially protect some creditors. In fact, the incidence of the latter is quite widespread.

- Deposit insurance arrangements are common among CMF participating jurisdictions. Such arrangements serve the dual purpose of protecting **depositors** and ensuring financial system stability.
- To protect the **beneficiaries of (defined-benefit) corporate pension arrangements** from losses, due to the sponsor firms going bankrupt or leaving the pension plans underfunded, several countries have put in place so-called pension-benefit-protection arrangements. In the United Kingdom, the Pension Protection Fund operating since 2005 pays compensation to members of defined-benefit occupational plans and the defined-benefit elements of hybrid pension plans. Similar arrangements exist elsewhere, including in the United States (the Pension Benefits Guarantee Corporation, PBGC), the Canadian province of Ontario, and in Germany, Japan, Sweden and Switzerland.
- Several countries have some form of **insurance policyholder** protection arrangements, which safeguards the interests of insurance policy holders and beneficiaries in the event insurance companies are unable to fulfill their contractual commitments. Such arrangements can offer protection by paying compensation to policy holders or beneficiaries, or by securing the continuation of insurance contracts. In countries where such arrangements exist, they may be limited in terms of coverage (*e.g.* covering only very specific classes of non-life insurance policies) or exist only for either life insurance or general (property and casualty) insurance. In a few countries, such arrangements cover both life insurance and non-life insurance.
- Many countries offer arrangements that compensate **investors** for losses incurred when an investment firm fails to return their assets due to fraud, administrative malpractice or operational errors. For example, in accordance with the *EU Directive on Investor Compensation Schemes*, all EU Member States have implemented such schemes. In the United States, the Securities Investor Protection Corporation (SIPC) was established in 1970 to shield investors from losses arising from the failure of broker-dealers; investments covered by the SIPC include the cash and (eligible) securities of customers at a financially distressed brokerage firm. In the United Kingdom, compensation is provided even beyond the amount of existing liabilities in so far as investors are compensated for losses arising from the bad advice of financial advisers, which are incidentally required to participate in the UK guarantee programme.

c) Influencing the allocation of credit

Credit rationing

Restricting lending can be a rational response to the presence of certain risks

Assessing higher interest charges and fees for borrowers considered to be risky is the norm in lending activities. A combination of higher rates and fees, as well as close monitoring, do address some of the risks, but they do not completely eliminate them. Therefore, lenders in some circumstances may be inclined to restrict lending to maintain risk below a certain level, either by cutting back on the amount of credit provided or denying credit altogether for certain categories of borrowers.³

There are alternatives to rationing credit in order to address agency problems and the information asymmetries associated with lending. In fact, banks and other primary lenders often attempt to overcome the risks inherent in debt finance by asking for collateral to cover losses in the event of insolvency. A borrower's willingness to supply collateral of the required quality and amount can be construed as a signal of its creditworthiness or of the validity of its prospects. Collateral ensures that the borrower bears some risk of loss and provides the lender with an alternative source of repayment should the firm's business climate deteriorate. In many situations, however, potential borrowers are unable to mobilize such collateral. The situation is often further complicated by the fact that potential borrowers often also lack a credit history, while data relevant to conduct borrower risk assessment might be sparse or of limited reliability.

SMEs may not benefit from access to finance to the same extent as other borrower groups

Small and medium-sized enterprises (SMEs) are a classic example. They are often regarded by many policy makers as not benefitting from access to finance to the same extent as other borrower groups, even though their activity tends to create a number of positive externalities. While it is difficult to show empirically that the size of the SME sector has a causal effect on growth, economic growth depends on *new and innovative* enterprises, which are often small. The contribution of such enterprises to employment growth is also substantially higher than their size would suggest, as they account for more than half of all private-sector employees in most OECD economies, and for 60% to 80% of new employment growth. Against the background of these observations, policy makers have devised a number of policies and institutions to overcome the perceived market failure regarding SME financing.

Credit guarantee arrangements

Credit guarantee arrangements are a commonly used tool to improve access to credit by SMEs

Credit guarantees are one of these tools and, even if credit guarantee arrangements started out as and often continue to be private ventures, credit guarantees seem to have become the direct policy intervention mechanism of choice for improving the access of SMEs to credit. Although the specifics of support programmes vary, there are two main types of guarantee arrangements: (1) *mutual guarantee associations*, which are established by groups of SMEs, by business foundations, or Chambers of Commerce, often in collaboration with banks; and (2) *loan guarantee funds*, which are most often publicly funded by regional or national authorities.⁴ Government guarantee arrangements typically involve formulas under which banks share the risk with the official guarantor, and

in which the interest rate paid includes a premium to compensate the authorities for providing the guarantee. There is a requirement that the arrangement cover costs and, in most cases, that the credit guarantee arrangements do not represent a drain on budgetary resources and that they benefit the targeted audience.

Policy makers place a sharp emphasis on the attractive features of credit guarantee arrangements

A credit guarantee scheme (CGS) has several features that might allow it to overcome the credit constraints SME borrowers often face. A CGS is a risk-transfer and risk-diversification mechanism. It lowers the risk of the lender by guaranteeing repayment of part of the loan upon occurrence of a default event, thus having the credit guarantee fund absorb the risk of default by the borrower. Also, to the extent that the CGS develops a more diversified portfolio than individual banks, e.g. by guaranteeing loans across different sectors or geographical areas, it diversifies its own credit risk, the benefits of which could be shared. In addition, there can be informational gains, as the CGS is able to accumulate specialised information on SMEs given its interactions with many such borrowers over extended periods. From a policy point of view, CGS can be more effective and less costly, under some circumstances, than direct lending in expanding access to external financing; they are also politically attractive as they seem to be rather market-friendly, given that the lending decision mostly rests with the private lender. CGSs played an important role during the recent financial crisis, with many such schemes maintaining or increasing their activity, even as some other forms of financial intermediation ceased to be available.

Mortgage guarantee arrangements

Some types of credit guarantee arrangements reflect the pursuit of specific policy goals, such as increasing homeownership

Another example of a guarantee scheme is a mortgage guarantee arrangement. The objective of such an arrangement is broadly similar to that of a credit guarantee arrangement -- to address market failures and/or other policy objectives. Market failure arises from the presence of asymmetric information and leads to credit rationing. In addition, promoting homeownership is an important goal of many national housing policies. Thus, to increase access to homeownership, especially by middle- and lower-income groups, governments have introduced grants, subsidised loans, tax relief measures and mortgage guarantee arrangements. A mortgage guarantee arrangement facilitates mortgage lending to those who otherwise might not have access to loans, by protecting lenders (at least partly but sometimes even fully) against losses due to borrower defaults. Unlike some of the other policy tools, the provision of guarantees typically is not associated with any significant upfront fiscal outlays, which explains to some extent the widespread use of such arrangements across countries. That said, in many such arrangements governments are typically responsible for any shortfall. While a variety of fee structures exist in some arrangements, in some cases the mortgage guarantee is granted free of charge by local governments to the lending bank (Elsinga, 2009), suggesting that there is significant policy interest in the availability of such guarantees.

Incidentally, government-supported guarantees also characterise some of the secondary markets in mortgages. For example, in the United States, the two government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, purchase mortgages from mortgage lenders and repackage those loans into mortgage-backed securities, which carry a guarantee from these entities. In

addition, the mortgages and loans guaranteed by the Veterans Administration are backed by the full faith and credit of the US government when packaged as “Ginnie Mae” securities (by the Government National Mortgage Association, part of the Department of Housing and Urban Development). The market clout of these entities loomed large in the United States, with the former two enterprises owning or guaranteeing roughly half of all outstanding mortgages in that country at one point in time. The two GSEs were privately owned but enjoyed the perception of an implicit government guarantee; they were placed in conservatorship in 2008. There is currently a discussion in the United States as to what role the public sector should play in the secondary mortgage market (see e.g. US Department of Treasury et al., 2011).

The various guarantees related to mortgage debt played a role in the run-up to the recent financial crisis, which originated in the US subprime mortgage debt segment. Such guarantees exist not just in the United States, however. They are in fact quite widespread. Many of them reflect attempts to achieve the financial (or, better yet, public) policy objective of high rates of homeownership, and they subsidise related risk-taking by households and financial institutions to facilitate attainment of that goal. The overall effects of such policies continue to be controversial, and there is a growing recognition that at least some aspects of such guarantees have been counterproductive.

4. Guarantee arrangements as part of the financial system landscape

Guarantee arrangements have become a significant part of the financial landscape

Guarantee arrangements have become a policy intervention mechanism of choice in some parts of the financial sector. One of the attractive features of such arrangements is that they require limited, if any, upfront fiscal outlays. Moreover, to the extent that the risks covered do not materialise, fiscal costs will never arise, at least not as a *direct* consequence of the provision of the guarantees. Thus, to influence credit allocation and to avoid that shocks to financial institutions propagate and affect the broader economy, policy makers have encouraged the development of guarantee arrangements regarding many types of financial claims, although specific country choices have differed in this regard.

Countries have differed in the provision of financial system guarantees

Prior to the global financial crisis, CMF member jurisdictions differed considerably in their policy towards the use of guarantees for providing an additional degree of protection to financial consumers and investors.

- Some countries tended to pursue conscious policies of building some form of firewall into financial systems to prevent large shocks to either the real economy or the financial system from propagating through the latter.
- Others placed more emphasis on the potential costs associated with such arrangements in terms of potential distortions to incentives and competition. Clearly, while various types of guarantees prevent the propagation of shocks, like any guarantee, they can also cause distortions and induce excessive risk-taking, which in turn can create additional volatility and shocks.

In this context, Wylie (2009) suggested that the United States and Australia can be considered as opposite ends of the spectrum in the policy use of guarantees to address financial policy objectives. In the United States, government-supported guarantee arrangements for depositors and pension fund beneficiaries (as well as an implicit government guarantee for the mortgage pools provided by Fannie Mae and Freddie Mac) have played a significant role in the domestic financial market. Australia, on the other hand, did not even have deposit insurance prior to the recent crisis. That country's policy vis-à-vis guarantee arrangements reflected very much the results of the Wallis Inquiry Report of 1997, which -- broadly speaking -- judged financial system guarantees as potentially harmful due to the sense of complacency fostered among the beneficiaries. Whether the contrast between the countries is indeed as stark as has been suggested is not so clear, however. In any case, the financial crisis may trigger a re-assessment in many countries of the role of guarantee arrangements in their financial systems.

III. Are additional guarantee arrangements needed during normal times?

Should new explicit guarantee arrangements be introduced?

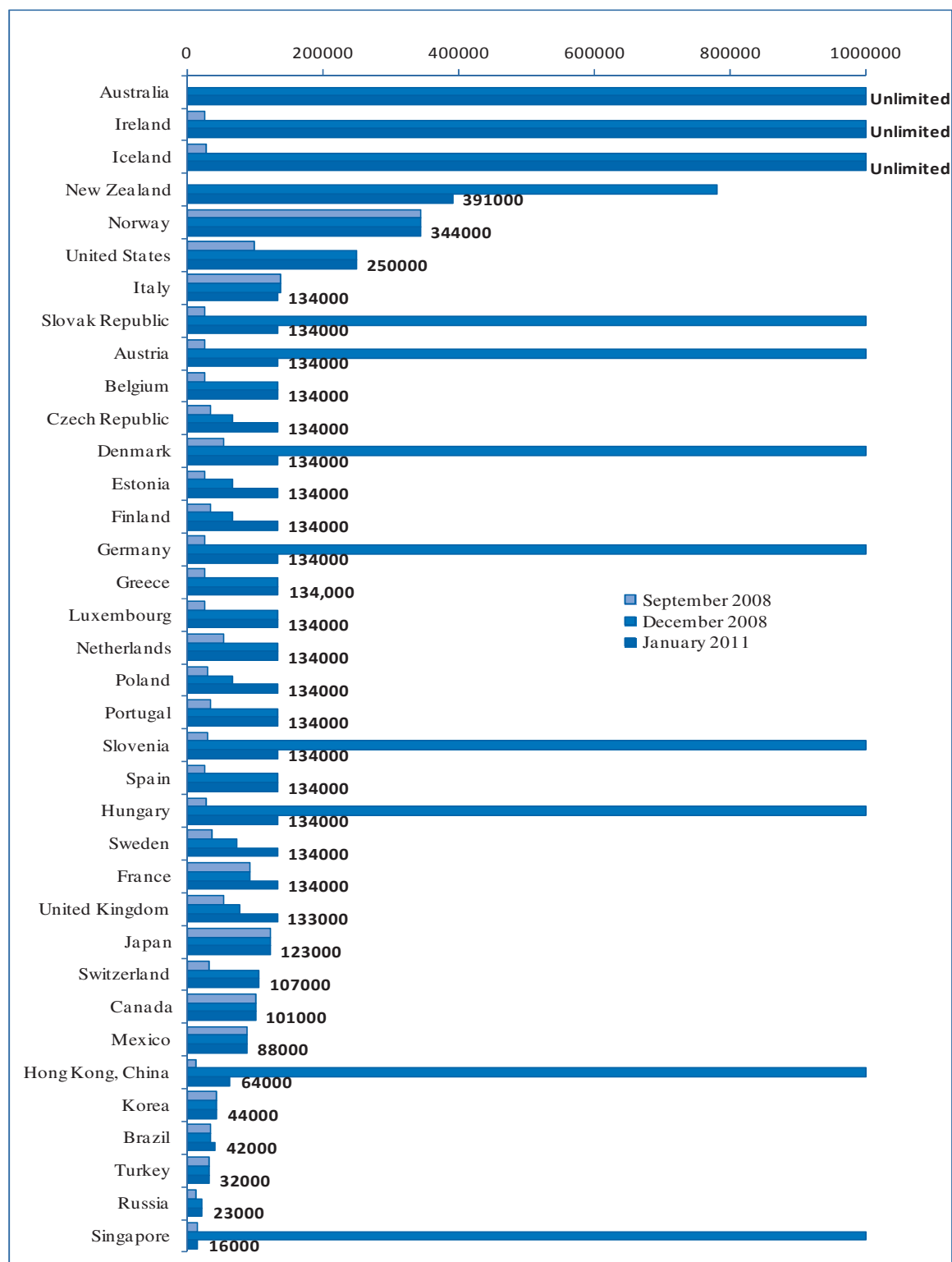
While the financial crisis has put a sharp spotlight on guarantee arrangements to support the financial system stability and raised the question how widely to cast the financial system safety net (Annex 1), it has also raised questions regarding the role of, and need for, guarantee arrangements to protect consumers.

There is still the open question as to whether and what extent the variety of guarantees actually contributed to the build-up of unsustainable positions in the run-up to the crisis, and a careful analysis of the potential consequences of guarantees beyond the short term is needed. That observation notwithstanding, policy makers in various jurisdictions react to perceived shortcomings in financial consumer protection in part by proposing to augment certain existing guarantee arrangements and introducing new ones in areas where they did not previously exist. Such measures are intended to help maintain consumer and investor confidence in the system, with some examples given below.

- In July 2010, the European Commission launched a public consultation regarding methods for improving protection for insurance policy holders, including the possibility of setting up such arrangements in all Member States. Similarly, the OECD (2010) report "The Impact of the Financial Crisis on the Insurance Sector and Policy Responses" concludes: "**Policyholder protection schemes:** Well-designed systems of deposit insurance, with adequate levels of protection, are believed to have played an important role in maintaining consumer confidence in the banking system. While the insurance sector may not have the same liquidity challenges as banks, considerations of consumer confidence and protection may still arise and provide grounds for the establishment of a policyholder protection scheme. There is therefore the issue of whether policyholder protection schemes should be augmented (or where they do not exist, established). Consideration could be given by the OECD to cross-sectoral work in this area, involving a review and comparative analysis of compensation arrangements for banking, insurance, and private pensions."⁵ In 2010, Greece introduced a general life insurance policyholder protection scheme.

- Given the increasing role of defined contribution (DC) pension plans in several countries, as well as increased financial market volatility, recent attention has focused on the *market risks* (as well as *counterparty credit risks*) inherent in plans for which the actual pension benefits received after retirement will vary depending on the type of financial products chosen and evolving financial market conditions. To protect retirement savers from potential variations in market conditions, there are proposals to introduce guarantee arrangements that would ensure a specific minimum return regardless of market conditions. In fact, legislation in some countries requires DC plan providers to offer an absolute rate of return guarantee. A recent report prepared for the IPPC's Working Party on Private Pensions (OECD/WPPP, 2010) on the role of guarantees in defined contribution (DC) pensions "endorses the introduction of capital guarantees that protect the nominal value of contributions in DC pension plans".⁶ However, discussions at the meeting failed to reach a consensus on this issue and the role of governments in this context.
- The suggestion to establish a guarantee (arrangement) for DC pension plans appears to be motivated primarily by market risk, as opposed to counterparty credit-risk (which is addressed by many of the guarantee arrangements discussed in section II), even if both of these risks appear to be relevant. Counterparty credit risk is particularly relevant in guarantee arrangements for defined benefit (DB) arrangements. The importance of such pension plans in many countries, as measured e.g. by total assets held by such funds, is declining, while that of DC pension funds is often increasing. Against the background of these developments, the issue of whether to establish additional guarantee arrangements for DB arrangements is currently not high on the political agendas of most countries.
- Explicit deposit insurance arrangements have now become a standard feature of national financial systems, although not every country has them. Among CMF participating jurisdictions, only Israel and New Zealand do not have permanent explicit deposit insurance arrangements. In Israel, the central bank can extend guarantees for deposits and other bank liabilities under certain circumstances. In New Zealand, the current temporary arrangements are up for review, with a decision due in 2011. In Australia, the Financial Claims Scheme implemented in October 2008 is intended to be permanent, but its coverage and other features are to be reviewed by November 2011.⁷
- Deposit insurance arrangements serve the dual purpose of protecting the financial system and consumers. Consumers who cannot be expected to carefully assess the riskiness of their banks but for whom the loss of deposits would cause significant hardship have traditionally been considered worth protecting through such arrangements. The increases in deposit insurance coverage levels that occurred since October 2008 and were primarily motivated by financial stability, as opposed to consumer protection concerns (Mayes, 2011), imply that protection now goes well beyond a small group of particularly "vulnerable" households. Indeed, under current coverage limits (Figure 2), only a small portion of eligible deposits are not covered in many countries (often less than 30%), although the distribution and role of bank savings differ from one country to another. One could argue that the consumer protection motive is likely to have been already achieved at lower coverage levels.

Figure 2. Deposit guarantee coverage limits, including political commitments⁸



Note: see endnote 8.

Source: OECD Secretariat estimates based on FSB (2010).

IV. Considerations regarding the introduction of additional guarantee arrangements

1. Specific and general considerations

Some considerations regarding the desirability of a new arrangement are common among different types of financial claims

Specific considerations regarding the desirability of new guarantee arrangements differ depending on the type of financial claim. As well, the alternatives to guarantee arrangements differ depending on the type of financial claim. As a result, it is difficult, if not impossible, to make general assessments regarding the desirability of guarantee arrangements that apply irrespective of the specific type of financial claim.

However, this article argues that there are also a number of considerations common to the issue of establishing a new arrangement, which policy makers should take into account in developing a policy response (regardless of the specific type of arrangement being discussed). These considerations include:

- Effect on incentives (moral hazard);
- Effect on competition;
- Consistency of the net of guarantee arrangements;
- Capacity to provide for the net of guarantee arrangements.

2. Selected general considerations

a) Effect on incentives (moral hazard)

Any guarantee arrangement can give rise to moral hazard just like any other type of insurance

Any guarantee arrangement can give rise to moral hazard just like any other type of insurance. That assessment is true regardless of whether the arrangement is of a private or public nature, as long as it is credible. The policy response to the recent financial crisis consisted to a large extent of extending guarantees for banks. The observation that many banks have continued to augment their balance sheets as investors took comfort in the existence of such arrangements and attractive promised rates of return is indirect evidence suggesting yet again that moral hazard is not just a theoretical concept, but is very relevant in practise.

Moral hazard is not a fatal flaw of guarantee arrangements

That said, moral hazard is not a fatal flaw of guarantee arrangements. Addressing moral hazard requires careful design of the guarantee arrangements and an adequate and possibly strengthened supervisory and regulatory framework. Specific solutions can include the enhancement of authorities' monitoring and intervention powers (which in the case of deposit insurance has been shown to limit the ultimate cost for taxpayers), as well as specification of deductibles and limits for insurance coverage. To the extent that such remedies are not fully successful, however, the existence of guarantee arrangements risks creating the same vulnerabilities that they are supposed to address in the first place.

As a general rule, the case for establishing explicit guarantee arrangements is stronger if an implicit guarantee already exists and for whatever reason cannot be withdrawn; an implicit guarantee already tends to give rise to moral hazard. An explicit guarantee improves on the latter situation in that it allows one to

define what the outer limits of the guarantee are, in terms of what is protected and what is not. Moreover, it allows one to charge an appropriate premium in exchange, which is difficult, if not impossible, in the case of an implicit guarantee.

A specific issue is that institutions' product mixes change over time

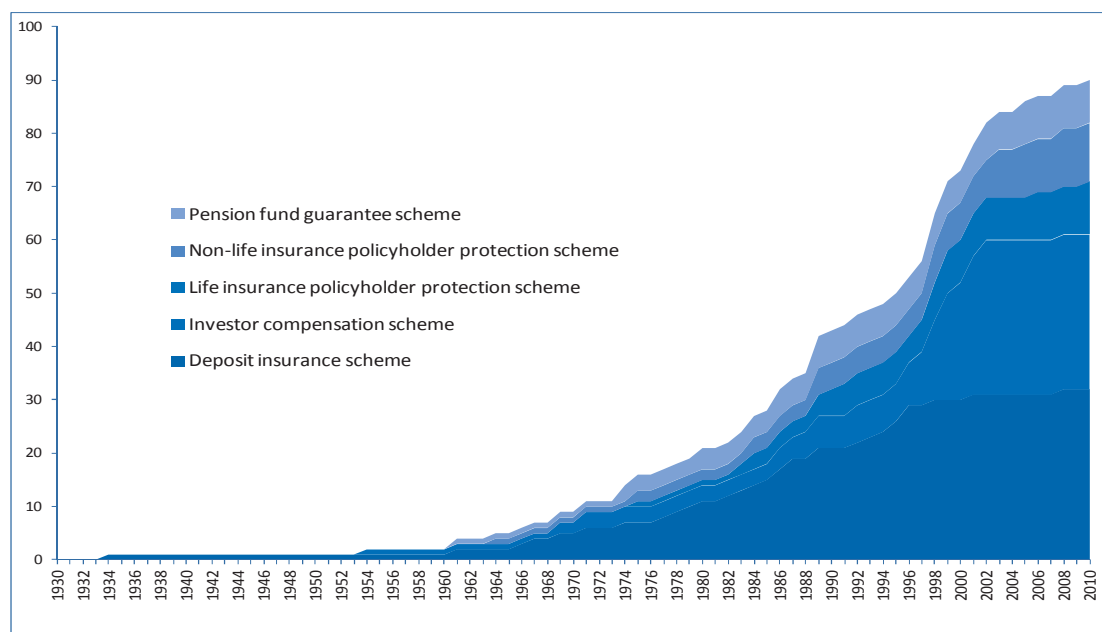
Charging commensurate premiums is also particularly difficult where the guarantee arrangements relate to specific types of institutions, but where these institutions are parts of larger financial groups. The various specific functions performed by the financial system involve different types of products,⁹ end-users, and providers, all of which may evolve over time. In this context, one of the major trends in the changing financial landscape has been the increasing degree of conglomeration, whereby institutions of various types provide different mixes of products and functions that cut across sectoral boundaries.

But guarantee arrangements generally remain linked to particular types of institutions rather than to products

But while institutions' strategies and product mixes change over time, guarantee arrangements generally remain linked to particular types of institutions, rather than specific functions or types of financial claims. As a result, certain institutions benefit from the availability of guarantee arrangements conceived for very specific functions, even though some or most of their activity pertains to other, unrelated functions. As a result, and to the extent that guarantees are not actuarially fairly priced, there is potential for cross-subsidisation and resulting additional risk-taking in other parts of the institution.

Figure 3. Incidence of guarantee arrangements for various types of financial claims

In OECD jurisdictions



Notes: The number shown for each year pertains to the incidence of guarantee arrangement per the five featured categories of arrangements (as indicated in the legend) in OECD jurisdictions. If there is more than one arrangement within each specific category, these are counted only once. Thus, the maximum number of incidences at any point in time is 170 (34 countries times a maximum of five types of guarantee arrangements each).

Source: OECD Secretariat estimates based on International Association of Deposit Insurers (IADI); Oxaera (2005, 2007) and Stewart (2007).

b) Effects on competition

Guarantee arrangements to protect consumers are a significant part of the financial landscape

Guarantee arrangements that provide consumer protection in regard to financial claims, such as deposits, life and non-life insurance policies, pension claims, and securities (holdings) appear to have become a significant part of the financial landscape. For example, judged by the incidence of (at least one) guarantee arrangements related to each one of these five type of financial claims, Figure 3 illustrates that there has been a marked increase in the incidence of such arrangements among CMF participating jurisdictions over the past few decades.

Developments in this regard have differed depending on the specific type of financial claim concerned. The number of deposit insurance arrangements has been increasing gradually since the 1980s. The number of jurisdictions with investor compensation arrangements remained broadly constant during the 1970s and 1980s, but has grown rapidly since the late 1990s. In 1997, the EC Directive on investor compensation was formally adopted and now all EU member countries have such arrangements. Growth in the number of jurisdictions with guarantee arrangements for life and non-life insurance policyholders has been less dynamic, although the EU is currently considering a new insurance guarantee directive, which could lead to the wider introduction of such arrangements, at least within the EU (on the specific issue of *general* insurance policyholder protection arrangements see Box 2). There are eight jurisdictions that provide pension-fund policyholder protections (Table 2). The overall incidence of guarantee arrangements has remained broadly stable over the last decade, although it has picked up slightly during recent years.

Box 2. The specific issue of general insurance policyholder protection arrangements

General insurance policyholder protection arrangements are less common than deposit insurance arrangements, based on the number of countries that offer this type of guarantee. While *de facto* deposit insurance arrangements have become the norm, with only a few exceptions, there continues to be considerable controversy among both academics and policymakers surrounding the desirability of establishing (general) non-life or life insurance policyholder protection arrangements. On the one hand, protection is required when bankruptcy occurs, despite all supervisory efforts made and buffers created at the institutional level, and such protection could increase confidence in the industry more generally. An argument is also being made that, given the convergence of financial institutions providing banking and insurance functions and the widespread incidence of deposit insurance arrangements, establishing further (general) insurance policyholder protection arrangements would level the playing field. Such arrangements might also facilitate a smooth exit of failed insurers. On the other hand, other provisions to safeguard policyholder interest already exist, such as giving policyholders priority rights in case of insolvency, strong regulation covering technical reserves and asset investments. And like any guarantee, policyholder protection arrangements might give rise to competitive distortions and moral hazard, especially if and where protection for policyholder is provided without limits (as is indeed often the case). Also, there is a possibility that the additional financial burden associated with such arrangements might weaken insurance companies' internal buffers.

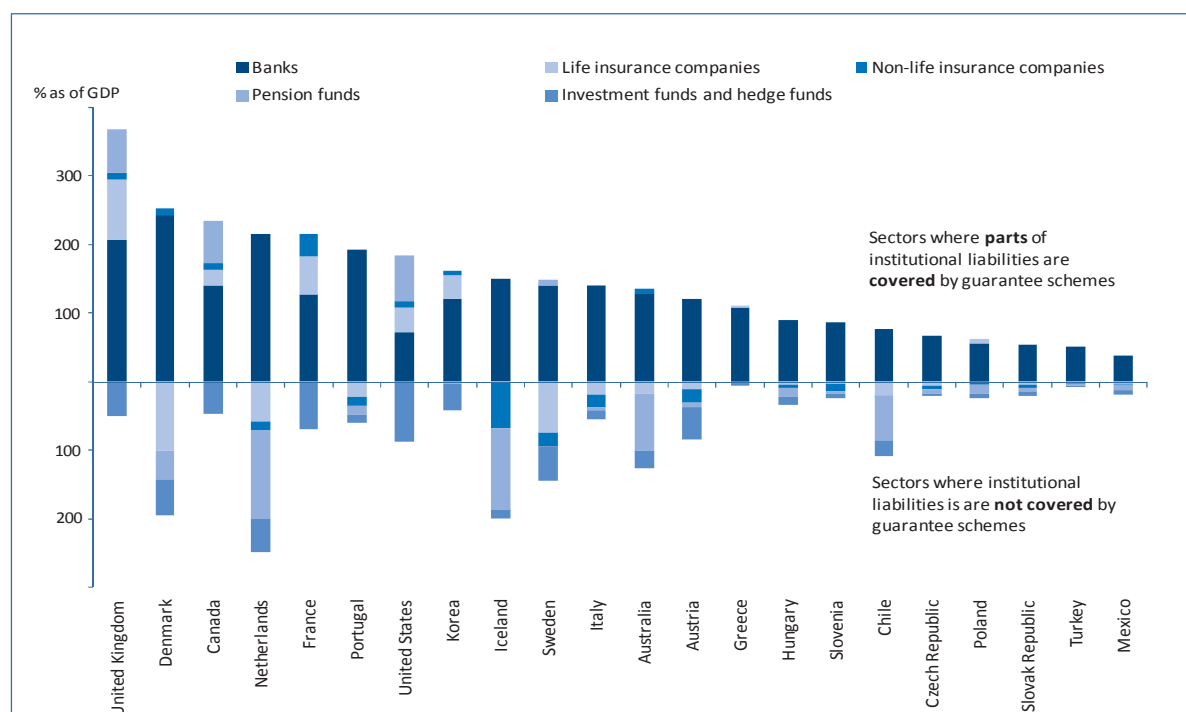
Based on these considerations, only a limited number of countries have introduced policyholder protection arrangements that provide protection in the event of a bankruptcy of an insurance company to policyholders of generally all the lines of insurance of that company. Relatively more common, however, are guarantee arrangements that focus on specific lines of insurance, in particular, compulsory ones. Guarantee arrangements typically supplement compulsory insurance systems because they can ensure that the goal of (insurance) regulation is achieved, even when the insurer is insolvent and hence unable to pay claims arising from compulsory insurance. For an overview of arguments regarding the desirability of general policyholder protection arrangements and related design aspects see e.g. OECD (2001), Oxera (2007) and work currently being done by the OECD's Insurance and Private Pensions Committee.

The availability and terms of guarantees affect competition

As a result of the increase in the number and variety of guarantee arrangements, the balance sheets of many financial institutions are now at least partly affected by the operation of one or more guarantee arrangements. At the same time, the liabilities of certain other financial institutions are not, at least not directly (Figure 4). Among financial institutions whose liabilities are at least partly covered by some form of guarantee, banks are by far the most dominant, as measured by assets. To a lesser extent, the liabilities of pension funds and life insurance companies are also supported by general guarantee arrangements, while there are no guarantee arrangements, under normal circumstances, that pertain to investments in hedge funds and investment funds.

It is clear that the incidence (and design) of guarantee arrangements determines the extent of competitive neutrality between different types of financial institutions, some of which offer similar types of products. But given that access to guarantee arrangements for certain products goes typically hand-in-hand with tighter regulation of the beneficiary institution, the net effect on costs for, and profitability of, financial institutions and on the competition among them is difficult to assess.

Figure 4. Asset size of selected financial sectors in selected countries (as of 2009 GDP)



Notes: Estimates based on data for total financial assets of selected financial sectors and estimates of the incidence of guarantee arrangements as shown in Table 2. Estimates of pension fund assets refer to the aggregate of defined contributions, defined benefit and hybrid arrangements, obtained from OECD global pensions statistics. Estimates of insurance assets are based on OECD insurance statistics, except for the United States and the United Kingdom, where the OECD's Institutional Investors database is used. Where no breakdown into life and non-life insurance was available, the data for "composite" insurance companies was used to obtain an estimate of such a breakdown (applying the ratio of reported gross operating expenses related to either life or non-life insurance business reported for "composite" insurance companies).

Source: OECD Secretariat estimates based on OECD statistics for pension and investment fund and insurance company assets and World Bank for bank assets.

Table 2. Incidence of (non-temporary) guarantee arrangements in OECD countries

	Deposit guarantee arrangements	Investor compensation arrangements	General arrangements for life insurance	General arrangements for non-life insurance	Pension fund guarantee arrangements	Credit guarantee arrangements and related policy interventions
Australia						
Austria						
Belgium						
Canada						
Chile						
Czech Republic						
Denmark						
Estonia						
Finland						
France						
Germany						
Greece						
Hungary						
Iceland						
Ireland						
Israel						
Italy						
Japan						
Korea						
Luxembourg						
Mexico						
Netherlands						
New Zealand						
Norway						
Poland						
Portugal						
Slovak Republic						
Slovenia						
Spain						
Sweden						
Switzerland						
Turkey						
United Kingdom						
United States						

Notes: Shaded area denotes that at least one general arrangement is in place for the specific type of financial claim shown in the headers. Dark-shaded areas indicate that one agency manages several arrangements in different sectors; that is, all arrangements that are highlighted by that dark shading. There are also special arrangements covering one or a few specific branches of non-life insurance (not shown in the table). In the case of life insurance, the assessment follows OECD (2010), except for Austria, Greece, the Netherlands, and Turkey. In the case of non-life insurance, the assessment of specific arrangements follows OECD (2010), except for Estonia and Greece.

Source: OECD Secretariat estimates based on IADI (2008), World Bank (2005) and IMF(1999) for deposit insurance; Oxera (2005) for investor compensation; Oxera (2007) and OECD (2010) for insurance; Stewart (2007) for pension arrangements; OECD (2009) and Beck (2010) for credit guarantee arrangements; and websites of various agencies managing the arrangements.

c) Consistency of the net of guarantee arrangements

Consistency with the regulatory framework

A key issue is the relationship between the guarantee arrangement and the regulatory and prudential framework

When introducing additional explicit guarantee arrangements, a key issue is the relationship between the guarantee arrangement and the regulatory and prudential framework. The latter differs from one country to another, but some general guidance on how to explore the interrelationships can be obtained from the Davis (2004) report produced for the Australian government. This report provides a careful review of the pros and cons of guarantees across a whole range of financial institutions. It explores the interrelationships between any type of guarantee arrangement and the existing regulatory and prudential framework, as well as the consequences of a limited explicit guarantee system. There needs to be internal consistency between a guarantee arrangement and the regulatory and prudential framework, and the latter may need to be adjusted if new explicit guarantee arrangements are introduced.

One specific risk is that the availability of guarantees might reduce incentives for policy makers to develop alternative burden-sharing instruments

The availability (and presumed smooth functioning) of guarantee arrangements to protect consumers and foster financial stability should not reduce incentives for policy makers to develop other burden-sharing instruments. In this context, the generally accepted philosophy is that the first line of defense against the materialisation of risks for financial institutions should be the capital buffers they hold. Where these are inadequate, the entity should be allowed to fail in an orderly fashion, which implies losses for shareholders and for creditors according to their seniority. Achieving this outcome requires appropriate failure-resolution regimes. Such regimes were not considered applicable in the recent crisis to many systemically important financial institutions. Since then, for example, the Federal Deposit Insurance Corp. (FDIC) in the United States has extended its failure resolution powers to include non-bank, systemically important financial institutions. Guarantees need to go hand-in-hand with mechanisms that ensure that the covered financial institutions can fail in an orderly and smooth fashion so as to limit the ultimate costs associated with guarantee arrangements and thus the potential burden for the taxpayers.

Internal consistency

Some guarantees transfer risk, while others consciously encourage additional risk-taking

Many guarantee arrangements focus on the liabilities of financial institutions and protect financial consumers from the effects of institutional failure. They thus reduce the chance that excessive risk-taking and stresses in the financial sector spill over to other sectors of the economy. Other guarantee arrangements consciously encourage specific types of risk-taking by some financial institutions. The net result of the different intended effects -- and those that arise unintended -- from the presence of the various guarantee arrangements is difficult to determine. Ensuring the consistency and coherence of net effects from government-supported guarantee arrangements would appear to be an important policy aim.

The prevalence of different types of guarantee arrangements can give rise to inconsistencies, which could hamper the achievement of financial policy objectives. There is a multitude of guarantee arrangements focusing on different types of financial claims. Some guarantee arrangements apply to the liabilities of

financial institutions and others to the assets. The liability-oriented protections aim at protecting financial consumers and investors from excessive risk-taking by the financial institution on which they hold claims. Other types of guarantee arrangements focus on the assets of financial institutions and attempt to overcome specific market failures and to encourage greater risk-taking on the part of financial institutions. At least conceptually, some conflicts could arise.

For example, in terms of policy objectives, deposit guarantee arrangements aim to prevent excessive risk-taking by an individual bank from spreading to households and other sectors, while credit guarantee arrangements actually support banks' risk-taking, encouraging banks to lend to the corporate sector. Also, some temporary guarantee arrangements introduced in response to the financial crisis provided protection for the holders of bank debt, while at the same time encouraging banks (as a condition for eligibility) to maintain existing leverage ratios or to extend additional credit. The net effect on bank-sector risk, risk-allocation and on risk-taking is uncertain.

There is a need for policy makers to understand the effects of the various guarantee arrangements and to ensure internal consistency among them. While consistency might be facilitated by concentrating the management and funding of different types of guarantees within one single agency (possibly with different accounts), such an approach is not very widely taken (Table 2). This observation suggests there are drawbacks to this type of institutional-pooling arrangement that are considered relevant.

d) Capacity to provide for the net of guarantee arrangements

In response to the recent crisis, a number of new temporary guarantee arrangements were put in place, and the scope of existing arrangements was extended, most of these pertaining to bank liabilities. While many of the extended arrangements have since been retracted, there are lingering questions about whether the various guarantees can be effectively withdrawn forever, under all circumstances, and to what extent implicit guarantees will continue to prevail.

For example, where the scope of existing deposit insurance arrangements has been extended, it is likely to remain above pre-crisis levels. In fact, a ratchet effect has been typically observed in the development of coverage ceilings of specific deposit insurance arrangements. Figure 2 provides additional evidence supporting this hypothesis. It illustrates the changes in deposit insurance coverage ceilings over the past three years. It shows that such ceilings have increased in most instances in response to the crisis, with the notable exception of countries that either already were characterised by relatively high ceilings or where banks did not experience large shocks associated with the crisis. An important observation is that even though ceilings have now again been lowered in many cases, they still are at least as high as they were before the crisis. In fact, in 28 cases, they now stand above pre-crisis levels.

Guarantee arrangements create contingent liabilities for the guarantor

An important consideration is that guarantee arrangements create contingent liabilities for the guarantor, and that these can turn into actual liabilities if the covered risk materialises. These inter-linkages are understood by market participants, and in addition to actual sovereign debt levels, the extent of assumed government support for the domestic banking sector is taken into account by the rating agencies in assessing the creditworthiness of the sovereign.

Depending on the size of the banking sector, the total of actual and contingent liabilities can be significantly higher than actual liabilities (Figure 5). Between 2008 and 2010, estimated contingent liabilities have increased in some countries and decreased in others (Figure 6), with a particularly notable development being the significant increase and decrease in contingent liabilities in the case of Ireland and Iceland, respectively. As early as 2009, the stressed situation in the banking sector implied adverse sovereign rating actions in some countries, although the spotlight was not put more squarely on sovereign risk until 2010.

One could argue that potential contingent liabilities could arise for the government also from the liabilities of other financial institutions, such as life insurance companies and pension funds, even when there are no explicit government backstops provided. Expectations of implicit government support may exist, and these expectations are difficult to counter.

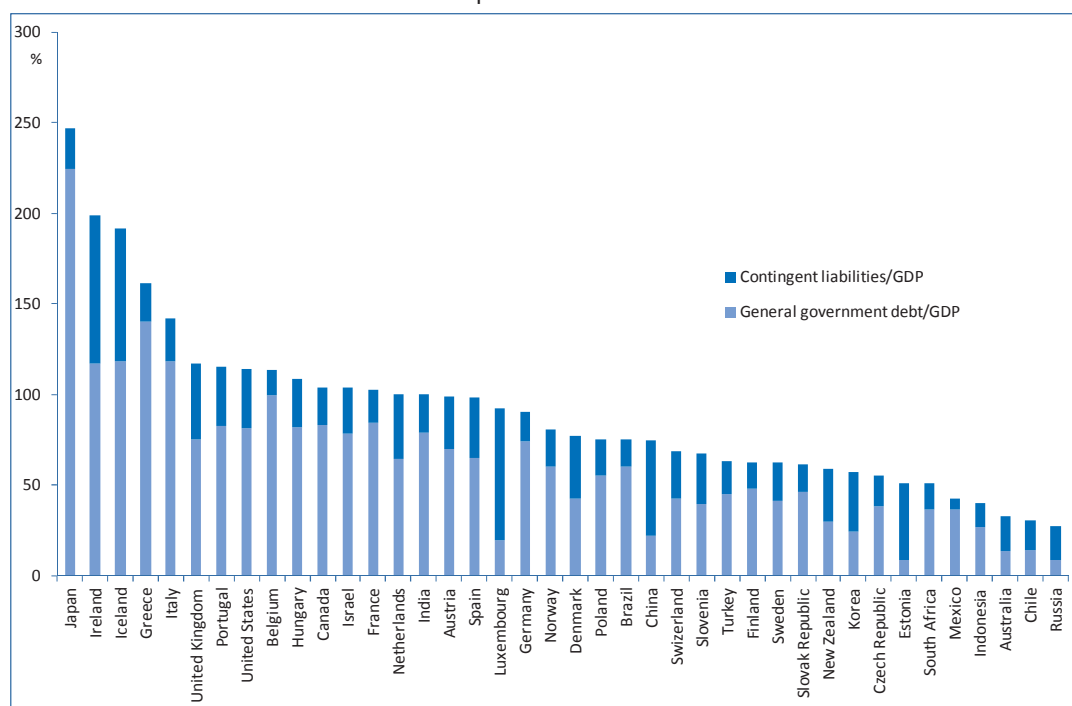
Currently, for example, rating agencies do not factor in the liabilities of pension funds when assessing sovereign creditworthiness, noting that their long-term investment horizons enable them to take the corrective measures necessary to avoid unsustainable imbalances and the need for government intervention. Indeed, the explicit support provided by governments for the guarantee arrangements backing the liabilities of non-bank financial institutions is more limited than for banks (Annex II).

The financial crisis has shown, however, that government support will be extended for specific financial claims, regardless of whether any explicit government support had previously existed. This problem exists because potential political pressures and/or concerns about systemic, social and other consequences tend to lead governments to provide State support beyond whatever their explicit commitments might have been.

To avoid situations in which the balance sheet problems of financial institutions spill-over to the sovereign through such mechanisms, a considerable degree of *ex ante* funding of guarantee arrangements to cover claims on these financial institutions (or those held by them) is necessary. The experience during the recent systemic crisis suggests that *ex ante*-funded systemic crisis resolution arrangements, together with strengthened failure resolution powers, are helpful in limiting the overall cost of crisis resolution (Schich and Kim, 2010). Similarly, the more extensive the *ex-ante* funding for guarantees on financial claims, the weaker the effect that financial institutions' balance sheet problems should have on sovereign credit risk.

Figure 5. Government debt, including contingent liabilities, in CMF jurisdictions

In per cent of GDP

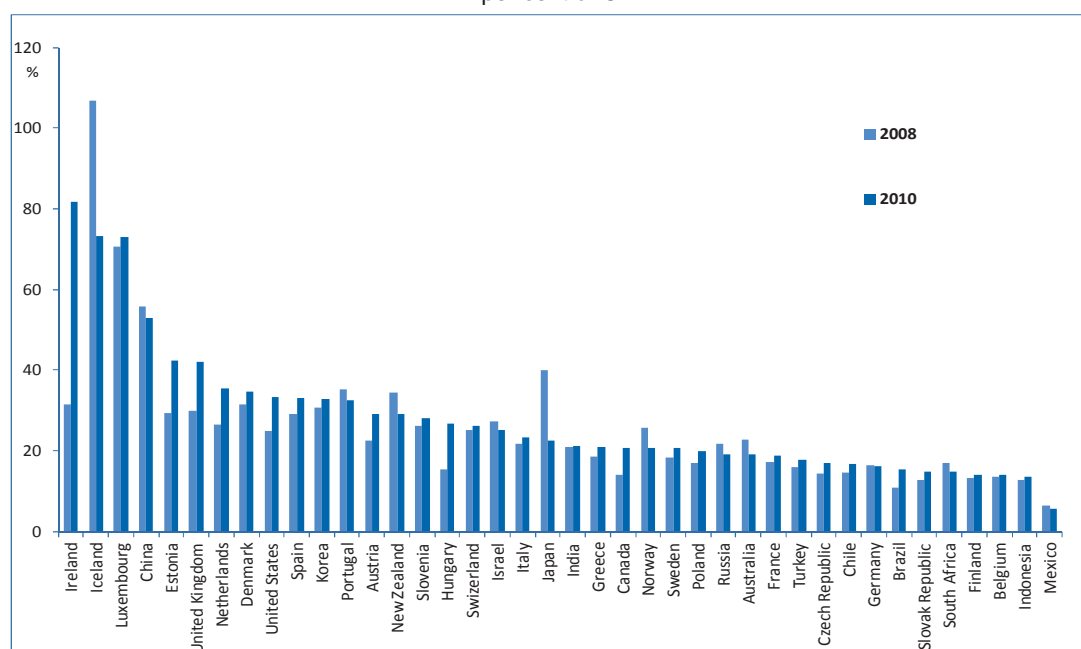


Notes: Sovereign's potential contingent liability arising from banking sector liabilities "during a reasonable worst-case banking crisis", as defined by Standard & Poors.

Source: OECD estimates based on S&P Sovereign Risk Indicators (2010).

Figure 6. Contingent liabilities in CMF jurisdictions

In per cent of GDP



Notes: See notes for previous Figure 5.

Source: OECD estimates based on S&P Sovereign Risk Indicators (2010).

V. Concluding remarks

Guarantee arrangements for financial claims address a number of policy objectives, which include macro-prudential goals, such as supporting financial stability, as well as other objectives, such as protecting consumers and influencing credit allocation.

Some general considerations should be taken into account when formulating policies regarding the desirability of new guarantees

An issue that has received heightened policy attention of late is whether to establish additional guarantee arrangements for financial claims, especially to protect consumers. At a micro level, the answer to that question as well as the policy alternatives, differ from country to country and depend on the specific type of financial claim under consideration. But there are some general considerations policy makers should take into account when formulating policies in regard to *any* new guarantee arrangement. They include the effects on incentives (moral hazard) and competition and the issues of consistency of the net of government-supported guarantee arrangements and the capacity of the guarantor to provide for the net of guarantee arrangements. Four considerations are singled out for special attention:

The wider the net of guarantees is cast, the thinner it becomes

Some arrangements transfer risk, while others consciously encourage additional risk-taking

- **First, explicit guarantees are preferable to implicit ones.** The case for establishing explicit guarantee arrangements is stronger if an implicit guarantee already exists, and for whatever reason, cannot be withdrawn. An explicit guarantee improves on that situation in that it allows one to define what the outer limits of the guarantee are, in terms of what is protected and what is not. Moreover, it allows one to charge an appropriate premium in exchange, which is difficult if not impossible in the case of an implicit guarantee. Explicit, *ex ante*-funded guarantees can limit the need for undifferentiated *ex post* bailouts.
- **Second, the net of government-supported guarantees for financial promises cannot be expanded without limit.** The wider the net of guarantees is cast (other parameters unchanged), the thinner it becomes. This observation is particularly relevant at a time when mature economies are faced with mounting fiscal challenges. In this context, the recent sovereign debt stresses have underscored that more consideration needs to be given to the issue of how to protect sovereign risk from specific financial-sector risk given expanding government guarantees. Even when arrangements have private origins, and when there is limited explicit public support, expectations may be that they enjoy implicit government support (under some circumstances at least), and these expectations are difficult to counter. Choices regarding the establishment of any new explicit guarantee arrangement need to consider the capacity of governments to provide for the net of guarantees, including implicit guarantees that might become explicit under some circumstances.
- **Third, some guarantees or the interaction between them could give rise to undesired effects.** A multitude of guarantee arrangements already exist affecting the balance sheets of financial institutions in different ways. This article documents the noticeable increase in the incidence of guarantee arrangements, even during normal times: Some apply to the liabilities of financial institutions, while others apply to their assets; some transfer risk, while others consciously encourage additional risk-taking. What the net result of the various types of guarantee arrangements is in

Appropriate measures are needed to limit the burden on taxpayers

terms of protection and risk-taking is not clear. Special efforts on the part of policy makers are needed to ensure internal consistency among guarantee arrangements and their consistency with the regulatory framework.

- **Fourth, guarantees need to be limited and affordable; policy makers need to address which types of financial claims are being protected and which are not.** For claims considered worth protecting, a rethink of some of the design aspects of the arrangements may be necessary in order to reduce the burden on taxpayers, who implicitly or explicitly, are the ultimate underwriters of most of these arrangements. Put simply, the net of guarantee arrangements for financial claims needs to be affordable, and its outer borders clearly defined.

While there was broad agreement among delegates of the Committee on Financial Markets that the net of government-supported guarantees cannot be extended without limits (other parameters unchanged), it is not clear precisely how far the financial safety net and other financial sector guarantees should be extended, in addressing other policy objectives such as protecting consumers and achieving more desirable credit allocation. In this regard, delegates suggested that it would be helpful for future work to adopt a broad perspective, one that integrates previous CMF discussions on the use of guarantees as a policy tool to support financial stability, as well as the most recent discussion on the incidence of guarantee arrangements in normal times. Another particularly important but difficult issue is that of implicit guarantees. An example of institutions believed to benefit from these guarantees are systemically important financial institutions, to which the above proposed simple framework could be applied.

Some nuances were expressed regarding the issue of consistency in the net of financial sector guarantees. In fact, while internal consistency -- and consistency with the regulatory and failure resolution framework -- are desirable, efforts to ensure such consistency present significant challenges. Already, any single guarantee has uncertain effects on risk allocation and risk-taking. Policy makers need to focus on each individual guarantee and ensure that it is being used for the appropriate policy objective, and that it is the most effective and efficient tool for achieving that objective. To ensure effectiveness, guarantees need to be credible and affordable, which in turn requires having in place appropriate resolution regimes and funding arrangements. As regards the latter, *ex ante* funding is widely regarded as preferable to *ex post* bailouts.

Note, in this context, that a previous CMF discussion in October 2010 had concluded that in the specific case of large, systemic crises, *ex ante*-funded systemic crisis resolution arrangements, together with strengthened failure resolution powers, are in principle adequate to help fill the funding gap left by existing deposit insurance arrangements. In particular, significant *ex ante* funding of such arrangements should help weaken the potential link between financial sector and sovereign risk.

*Annex 1***SHOULD THE FINANCIAL SYSTEM SAFETY NET BE EXTENDED
BEYOND DEPOSIT-TAKING BANKS?**

One specific issue highlighted by the recent crisis is that financial institutions other than deposit-taking banks can be systemically important and, under some circumstances, enjoy government-supported guarantees that are similar to those commonly available for deposit-taking institutions.

This situation raises the question whether, and to what extent, the various functions of the traditional safety net should apply to financial institutions other than banks, such as e.g. mutual funds with long-term investments and shares redeemable with short delays, systemically relevant parts of insurance companies, central counterparty clearing houses, etc.

The recent financial crisis has added to the list of examples indicating that “runs” are not confined to banks but can affect financial markets and institutions other than deposit taking banks. The crisis has highlighted the potential systemic role of the short-term funding markets. Investors that do not roll over their investments in commercial paper, in effect, “run” on the issuer of commercial paper. In the recent crisis, as investors became reluctant to roll over asset-backed commercial paper, yields on new issues soared and amounts outstanding plummeted. That contraction, in turn, sparked concerns about whether banks that explicitly (or implicitly) provided back-up liquidity as program sponsors would be able to meet their obligations, which then led to a freeze in the interbank lending market (see e.g. Covitz *et al.*, 2009).

Classic models of bank runs focus on debt holders, but the issue of “runs” also extends to equity holders, such as investors in a hedge fund or mutual fund. To the extent that withdrawals by investors are so large that increasingly illiquid assets need to be sold by the fund, possibly at fire-sale prices, there may simply not be enough net asset value to satisfy all demands. A first-mover advantage exists, and this situation can make financial institutions in general -- not just banks -- subject to runs. For example, in the case of life insurance companies, even if runs are typically avoided by the existence of significant withdrawal costs, the first-mover advantage also applies to the liabilities of these entities. In addition, even when the issue of runs is less relevant for a financial firm given its specific core business, it may be subject to runs if it is part of a large financial conglomerate, and customers become concerned about potential adverse spill-over effects from one part of that conglomerate to another.

In fact, in response to the recent financial crisis, several guarantee programmes were made available temporarily to (and sometimes used by) non-bank financial entities that would not enjoy such guarantees under normal circumstances (Appendix Table 1). Many of them targeted institutions engaging in similar activities as banks. These non-bank entities were not part of the traditional systemic financial safety net, but they presented very similar vulnerabilities to banks due to their engagement in maturity, credit and liquidity transformation.

This situation has raised the question whether such arrangements should be made permanent and whether, and to what extent, other elements of the safety net (including the regulatory and supervisory framework) need to apply more fully and in more potent form to such entities. These issues are being addressed as part of the work by the FSB regarding the potential regulation and oversight of the shadow banking system, with specific recommendations expected by 2011.

Appendix Table 1. Expansion of guarantees during the recent crisis in selected OECD countries

Type of institution	Type of claim	US	UK	GE	FR	AU	NZ	IR	CA	JP	NL	CH
Banks	Retail deposits ⁶⁾	●	●	●	●	●	○	●	⊗	⊗	●	●
	Interbank borrowing	○		○	○ ⁴⁾	○		○				
	CP	○	○	○	○ ⁴⁾	○	○	○	○		○	
	Unsecured bonds	○	○	○	○ ⁴⁾	○	○	○	○		○	
Life Insurance companies	Policies	● ¹⁾	⊗ ³⁾	⊗	⊗				⊗	⊗		
	Unsecured bonds	○ ²⁾		○			○		○ ⁵⁾			
Non-life Insurance companies	Policies	⊗	⊗ ³⁾		⊗	●			⊗	⊗		
	Unsecured bonds	○ ²⁾		○			○					
Securities firms	Securities held	⊗	⊗ ³⁾	⊗	⊗			⊗	⊗	⊗	⊗	
Pension funds	Pension claims	⊗	⊗							⊗		⊗
MMF	Certificates	○										
ABS	Securities		○									

Notes: ● indicates permanent guarantee arrangement currently exists, which has undergone significant changes in response to the recent crisis.

⊗ indicates permanent guarantee arrangement that has remained broadly unchanged during the crisis.

○ indicates guarantee arrangement temporarily made available in response to the crisis.

1) The National Association of Insurance Commissioners (NAIC) changed the coverage cap for annuities from \$100 000 to \$250 000 and established a new \$300 000 cap for long-term care and disability insurance in 2009.

2) Guarantee available to insurance companies that are subsidiaries of a financial holding company.

3) Some slight changes in coverage limits.

4) Stand-alone guarantee provided to Dexia.

5) The Canadian Life Insurers Assurance Facility was a temporary program that was launched in May 2009 and expired in December 2009. It was open to all regulated life insurance companies, but it was not used.

6) New rules under EU Directive 2009/14/EC took effect at the end of 2009 calling for coverage of the aggregate deposits of each depositor to be set at a level of EUR 100.000 by 31 December 2010.

Source: OECD Secretariat estimates based on FSB' database on financial sector rescue plan (as of June 2010); OECD (2010); Levy and Schich (2010); and websites of national public authorities.

Annex 2

WHAT IS THE EXTENT OF EXPLICIT GOVERNMENT SUPPORT FOR GUARANTEE ARRANGEMENTS?

There is a strong public interest in the proper functioning of guarantee arrangements, be they of private or public nature, and this situation implies that an implicit guarantee may exist under some circumstances, even if the explicit support is limited.

While measuring the extent of implicit guarantees is very difficult, if not impossible, measuring the extent of explicit government involvement in guarantee arrangements is not straightforward either, not least because the support can be provided in an indirect form. Governments are involved in various aspects of the arrangements. They may operate the arrangements directly, develop related regulations, influence the management of, and provide back-up funding for these arrangements. As a general rule, there exists some specific legislation applying to guarantee arrangements and many arrangements report to, or are supervised by, public authorities. Some types of financial institutions are required to obtain third-party guarantees for part of their liabilities in order to operate. For example, regulated deposit-taking institutions are typically required to participate in deposit insurance arrangements.

Some empirical estimates of direct government support are available for certain types of guarantee arrangements, and they typically focus on scheme management and funding aspects. For example, a World Bank survey of 76 credit guarantee schemes in 46 countries shows that governments are involved in either funding or managing such arrangements in about half and one fourth, respectively, of the arrangements surveyed (Beck *et al.*, 2010). Only 21 arrangements out of the 76 surveyed have no government involvement at all, as measured by the criteria considered in that study. As regards deposit insurance arrangements, the World Bank database on financial system structures categorises management as fitting into one of three categories: public, private or mixed. The assessment is based on responses by national public authorities to a questionnaire that includes the question “*Who manages the insurance fund? Is it managed....(a) solely by the private sector (b) jointly by private and public officials (c) solely by public sector*”. According to the most recently available responses, the management of deposit insurance arrangements in 20 selected OECD countries falls more or less equally into one of these three categories, with publicly managed arrangements slightly dominating, however. Unfortunately, the data do not allow one to extend coverage of this analysis to other types of guarantee arrangements.

Annex Table 2 shows the results of a similar type of empirical assessment, this time not relying on survey responses, but on specific observed institutional aspects. In particular, this measure focuses on the role of the government in the composition of the Board of the agency that is operating the arrangement, where there is a separate agency, or in the direct operation of the arrangement, where there is no separate agency. The results of the World Bank database-assessment are generally confirmed in regard to deposit insurance: the management of deposit insurance arrangements is characterised by considerable government influence. Looking across different types of guarantee arrangements, one finds that, in fact, government involvement in deposit insurance arrangements may be more pronounced, based on the specific criterion used here.

Government influence appears to have increased over time by some measures. More recently set-up deposit-insurance arrangements have tended to have strong government involvement, more often than not. In this context, it should be noted that the principles developed by IADI and the BCBS emphasise that arrangements should be insulated *both* from undue political and industry influence, suggesting that

some degree of government influence, as opposed to a purely private industry-based solution, is regarded as preferential.

As regards funding, a very limited number of arrangements other than deposit insurance arrangements have a government-provided, back-up funding facility (Annex Table 3). In fact, where there are such back-up facilities for investor protection arrangements, such as in the case of Korea, Denmark and the Netherlands, the same agency operates deposit insurance and other types of arrangements. There exist public back-up funding facilities in the case of some non-life and life insurance policyholder protection arrangements, but no such options are explicitly foreseen for pension fund policyholder protection.

Annex Table 2. Government influence on selected management aspects

	Deposit Guarantee	Investor Protection	Life Insurance Policyholder Protection	Non-life Insurance Policyholder Protection	Pension Guarantee
Austria	Private				
Belgium	Mixed				
Canada	Public				
Denmark	Mixed				
Finland	Private				
France	Private				
Germany	Mixed				
Ireland	Public				
Italy	Private				
Japan	Mixed				
Korea	Public				
Mexico	Public				
Netherlands	Public				
Norway	Private				
Poland	Mixed				
Spain	Mixed				
Sweden	Public				
Switzerland	Private				
United Kingdom	Public				
United States	Public				

Notes: The text in the column for deposit insurance indicates the assessment made in the World Bank financial structure database regarding the management of the guarantee arrangement. The colour shading provides a simple assessment of government influence in the composition of the Board of the agency operating the guarantee arrangement. The darker the shade, the greater the influence of the public sector on the composition of the Board. Incidentally, the finding that the management of investor protection arrangements is characterised by relatively strong government participation results from the fact that deposit insurance and investor protection arrangements are in several cases conducted by the same agency.

	Board members of agency in charge of guarantee arrangement appointed by (private) member institutions.
	Board members appointed i) from member institutions and ii) by the government (including central bank).
	Board members appointed i) from non-member and member institutions and ii) by the government.
	Public officials are part of the board and/or government-owned institutions administer arrangement.
	Government (including central bank) directly operates the arrangement.

Source: OECD Secretariat assessment based on International Association of Deposit Insurers, Oxera (2005, 2007), Stewart (2007), and websites of various agencies.

The different types of measures discussed above are useful, among other things, as they provide some reference for assessing the potential contingent liabilities for the government from guarantee arrangements that are not fully funded *ex ante*. In this context, it seems reasonable to assume that the higher the degree of government involvement in the governance and funding of guarantee arrangements, the higher the likelihood that the government will act as a guarantor of last resort. That said, the measures discussed above are very crude and, in any case, they focus only on aspects of the *explicit* government support during normal times. The recent financial crisis has shown, however that under certain circumstances, government support will be extended for specific guarantee arrangements, regardless of whether any explicit government support had previously existed.

Annex Table 3. Explicit back-up funding from the government for guarantee arrangements

In selected OECD countries

	Deposit Guarantee	Investor Protection	Life Insurance Policyholder Protection	Non-life Insurance Policyholder Protection	Pension Guarantee
Austria	○	○			
Belgium	○	○			
Canada	●	○	○	○	○
Denmark	●	●		○	
Finland	○	○			
France	○	○	○	○	
Germany	○	○	○		○
Ireland	○	○		●	
Italy	○	○			
Japan	●	○	●	●	○
Korea	●	●	●	●	
Mexico	●				
Netherlands	●	●			
Norway	●	○		●	
Poland	●	○	○		
Spain	●	●	○	○	
Sweden	●	○			○
Switzerland	○				○
United Kingdom	●	●	●	●	○
United States	●	●	○	○	○

Notes: ● indicates that the arrangement has explicit back-up funding from the government
○ indicates that the arrangement has no explicit back-up funding from the government
A blank space indicates that relevant arrangement does not exist

Source: OECD Secretariat estimates based on IADI; Oxera (2005, 2007) and Stewart (2007) and websites of various agencies.

Notes

1. For example, in the United Kingdom, deposit insurance arrangements did not avoid a bank run, in part because of very limited maximum coverage levels. In that country, as well as in all but eight of the 32 jurisdictions participating in the CMF in October 2008, deposit insurance coverage levels were subsequently raised.
2. Some types of insurance were difficult to obtain or ceased to be available at all. Trade credit insurers withdrew their services from the market during the crisis. Financial guarantee insurance, which backed almost half of all municipal debt in the United States at one point, became essentially unavailable, as the private financial institutions that had been lending their top-ratings to debt issuers were struggling for their own survival and lost that (top) rating, which formed the basis for their financial guarantee activity.
3. Theory suggests that this response on the part of lenders may be perfectly rational. Stiglitz and Weiss (1981) first raised this point in their seminal article, which presented arguments why banks would be reluctant to rely on higher interest rates to address risks above their comfort level. In particular, the authors showed that in a market otherwise in equilibrium, but characterised by asymmetric information, it may be rational for banks to engage in credit rationing of the sort whereby some borrowers are denied access to credit regardless of their willingness to accept more stringent terms. The rationale is that by relying solely on the rationing effects of higher interest rates banks may succeed only in driving out higher quality borrowers, leaving behind a riskier loan portfolio (*i.e.* adverse selection).
4. In fact, there will often be several schemes in place in any given country, and ownership, management, and funding structures will tend to vary widely from one scheme to another. Formal credit guarantee schemes date back to at least the mid-19th Century.
5. A thorough analysis of the pros and cons of establishing policyholder protection schemes, by taking a sector-specific perspective, was provided in OECD (2001). This report was motivated by the observation that there was an apparent trend towards the creation of such guarantee schemes, apparently “mostly triggered by the failure of one or more of the larger insurance companies in the countries” (OECD, 2001, p.20).
6. Such promised returns could be equivalent to zero, in which case the amount of accumulated savings at retirement would be guaranteed not to fall below a certain level. One advantage of such guarantees is that they can protect retirement income against major investment losses and thus, by enhancing savers’ appreciation of and confidence in DC pension arrangements, can also boost the demand for such plans (the stimulation of such demand is yet another financial policy objective). Related discussions have revealed that the rationale for any such return guarantee depends critically on the overall design of the pension system and, in particular, whether there are already strong benefit guarantees embedded in public pensions, old-age safety nets, occupational defined-benefit pensions, and some insurance products that may be bought during the working years, such as deferred annuities.
7. Principles guiding the design aspects of deposit insurance arrangements have been developed jointly by IADI and the BIS, and a methodology for assessing compliance with these principles has now become available (BCBS and IADI, 2011).
8. The figure shows the USD equivalent of the legal or “political” maximum deposit guarantee coverage as of early January 2011, mid-September 2008 and early-December 2008. Bilateral exchange rates for end December 2010 are used for the conversion of national currency amounts. The limits include political commitments and those for temporary schemes introduced in response to the financial crisis. The limit shown for New Zealand (of 500 000 NZ dollars) refers to the maximum amount paid in the event of a default by an approved institution that is a registered bank. The maximum paid in the case of default of an approved institution that is not a bank is only half that amount; all seven institutions that initially opted into the extended NZ Deposit Guarantee Scheme were non-banks. As regards the political commitment to provide unlimited guarantee coverage (in the chart illustrated for simplicity by bars going up to USD 1 million), the classification naturally entails some judgement, as the coverage increases

announced through policy statements did not necessarily involve legal changes. In this regard, the authors follow the classification as unlimited guarantee coverage published in FSB (2010). For example, in Germany, the government announced on 5 October 2008 that “the state guarantees private deposits in Germany”. No formal time limit was specified for that commitment and it was not accompanied by any change in law. Also in Germany, it should be noted, widespread voluntary arrangements provide additional coverage as compared to the official, obligatory coverage limit that currently stands at EUR 100.000. Thus, in that country, in practise, the coverage limit depends on the institute in question (see also Deutsche Bundesbank, Monthly Report, July 2000). For Greece, on 6 October 2008, the Prime Minister confirmed the earlier statements of the Minister of Finance regarding a full guarantee of deposits. No formal time limit was specified, however, for that commitment and it was not accompanied by any change in law. For Hungary, the assessment is based on the Letter of Intent of the government of Hungary to the International Monetary Fund as of 4 November 2008. In the case of Portugal, the classification as unlimited political guarantee made by FSB (2010) is not followed here. While a communiqué by the Portuguese Ministry of Finance and Public Administration “Initiatives for Strengthening Financial Stability” (October 12, 2008), available at <http://www.c-eps.org/getdoc/63dfd04-8225-4c89-a00a-8cfe620f4ba0/2008-10-12-Portuguese-initiatives-to-strengthen-fi.aspx>, included indeed a form of political guarantee, the same communiqué announced an increase of the official coverage to EUR 100 000, which was subsequently translated into legislation, Portuguese authorities therefore do not consider that “unlimited guarantee coverage” describes the situation after October 2008. For Italy, the limit shown for January 2011 is in fact the limit that came into effect in May 2011.

9. The financial system is most often described in terms of the functions it performs rather than in terms of the types of institutions, as institutions evolve over time, while functions are more or less stable.

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The Economic Impact of Protracted Low Interest Rates on Pension Funds and Insurance Companies

by

Pablo Antolin, Sebastian Schich and Juan Yermo*

A period of protracted low interest rates is a feasible, even if not the most likely, scenario going forward and such a scenario would adversely affect pension funds and insurance companies. Protracted low interest rates affect investment opportunities and have a potentially significant adverse effect on life insurance companies and institutions whose liabilities consist of a fixed investment return or benefit promises, such as is the case for defined-benefit pension funds. It cannot be ruled out that the financial institutions affected engage in “gambling for redemption” in an attempt to match the level of return promised to beneficiaries when financial markets were more elevated.

JEL Classification: G22, G23.

Keywords: Low interest rates, life and non-life insurance companies, pension funds, return promises, fixed benefits, “gambling for redemption”.

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I. Introduction

This paper discusses the impact of protracted periods of low interest rates

This paper discusses select issues regarding the impact of protracted periods of low interest rates on pension funds and insurance companies. While no set time period is associated with the word “protracted”, in this article we define protracted as lasting for at least several years. Certain other empirical studies on the same topic have used time horizons of more than 10 years in their simulations.¹

A scenario of protracted low interest rates is to be distinguished from a scenario where interest rates are rising or declining. Actually, a scenario of protracted low interest rates essentially requires that interest rates have already fallen, namely to low levels, where they might stay for some time.

At the outset, it should be noted that the scenario of protected low interest rates may not be the most likely one. In fact, judging by the recent pricing of interest rate futures, market participants’ expectations indicate a gradual increase in nominal interest rates going forward. Rating agencies and other observers point out that the main interest-rate risk is that rates will rise rapidly in anticipation of higher inflation, especially if this change occurs more quickly than expected and is built into the interest-rate and risk-management models maintained by insurance companies. Nonetheless, a protracted period of low interest rates is a feasible scenario for a number of countries currently, with potential severe effects for pension funds and some insurance companies.

Protracted low interest rates could affect both the assets and liabilities of pension funds and insurance companies

Such a scenario would affect pension funds and insurance companies on both the asset and the liability sides of their business. They would increase the liabilities of pension funds and insurance companies, to the extent that the decline in rates has not been fully reflected in liability reporting, and it would reduce future investment returns. As a result, the solvency status of insurers and pension funds – which was badly damaged during the crisis – could fail to improve or even show some deterioration. Protracted low interest rates will impact pension funds and insurance companies by affecting re-investment returns on their fixed-income portfolio. If low interest rates are expected to be permanent, lower interest income in particular will impact insurers with long-term liabilities and shorter-term assets. To the extent that lower interest rates reflect a lower-growth environment, returns on investments in general – and equities in particular – would also be expected to be lower. Consequently, pension funds offering defined-benefit promises and life insurance companies that have sold products with high-return guarantees may have difficulty fulfilling these promises.

The magnitude of this effect depends on the type of entity

The precise magnitude of this effect will depend on the type of entity. Adverse effects are more likely to arise for life (as compared to non-life) insurance companies, and the effects would differ for defined-benefit (DB) pension funds versus defined-contribution (DC) funds. The impact will also depend on the level and type of guarantees offered by these institutions. Insurers offering high minimum-interest-rate guarantees in their insurance policies and deferred annuities will be the worst affected, as well as defined-benefit pension funds and funds offering minimum-return guarantees. Where guarantees are reset on a regular basis, the impact will be more subdued.

A combination of low interest rates and increases in life expectancy compounds the problem

The combination of a low-interest-rate environment and increased life expectancy raises additional concerns, as low interest rates magnify the present value of future increases in longevity, further worsening the solvency situation of annuity providers and DB pension funds. As a result, these institutions are likely to scale back future benefit promises, with negative implications for retirement income adequacy.

Insurers and pension funds have various tools to address the risk of persistently low interest rates

Insurers and pension funds have various tools to address the risk of persistently low interest rates. First, if they expect a further downward slide in interest rates, they can seek to increase the duration of their assets in order to ensure a better duration match between assets and liabilities. Second, insurers can alter the terms of new policies (lowering guaranteed rates), thereby progressively lowering liabilities, while pension-plan sponsors could close down the plan and offer less attractive terms to new employees. Third, in the case of DB pension funds, pension-plan sponsors – and where relevant, plan members – could increase contributions to the pension fund. Fourth, and as a last resort, insurers and pension funds in some countries may be able to renegotiate or unilaterally adjust existing contracts. In some countries, for instance, pension-plan sponsors or the pension funds themselves have discretion regarding the level of indexation of pension benefits, and in some cases they can also reduce accrued benefits. In this last-resort scenario, international diversification could be further promoted, and the adjustment of expectations would call for appropriate communication with the beneficiaries.

Pensions and insurance supervisors should step up monitoring

A protracted period of low interest rates calls for proactive regulatory initiatives, drawing on regular monitoring by pension and insurance supervisors. Stress tests should further reflect the impact of protracted low interest rates. In particular, the impact on annuities providers and DB pension funds should be closely monitored. At the same time, policymakers should avoid putting excessive pressure on institutions to correct funding deficits at a time of market weakness. In DC pension funds, plan members should be allowed flexibility as to when they retire and when they annuitise their account balances so as to avoid members having to lock in future pension benefits at an inopportune time.

Search for higher yield may lead to problems of financial stability

From the perspective of financial stability, the main concern is that insurers and pension funds affected by the lower interest rates will seek higher yields via riskier investments (for those under solvency pressure, this would mean “gambling for redemption”). Such action is more likely to affect DB pension funds and insurers offering return guarantees, except in countries where pension funds are subject to solvency regulations similar to those for insurers penalising risky investments. A second major concern is that interest-risk-hedging activities sparked by an expected drop in interest rates could put further downward pressure on bond yields, further worsening the solvency of both pension funds and life insurers. Finally, protracted low rates will have an important impact on insurers that rely on interest income to maintain profitability; for instance, insurers that are operating in highly competitive environments with compressed margins.

II. How changes in interest rates affect pension funds and insurers

Future cash flows are discounted using long-term interest rates

In general, when calculating liabilities, DB pension funds and insurance companies discount future cash flows by using a discount rate linked to long-term interest rates. A reduction in long-term interest rates means that the liabilities, or the discounted value of future cash flows of a pension plan or an insurance company, would increase.² At the same time, the value of pension fund and insurer bond portfolios would rise, given a fall in interest rates.

The overall effect depends on the duration of assets and liabilities

The overall effect depends on the duration of assets and liabilities. It can be expected that DB pension funds and life companies with long-dated, interest-rate-sensitive liabilities will, unless they are hedged, have a negative duration gap (duration of liabilities greater than the duration of assets), in contrast to banks, which generally maintain a positive duration. Thus, DB pension funds and life insurers will be negatively affected by a reduction in long-term interest rates. Furthermore, when the interest rate shock is negative, insurance policyholders tend to stick to their (generous) contracts, unless insurers can convince them otherwise by encouraging them to switch to new contracts (but this raises market conduct issues). Some DB funds and life insurers might have longer-term assets, and thus they may have effectively hedged through asset-liability management, or may have hedged in some other manner (*e.g.*, long-term swap arrangements with bank counterparties offering fixed-interest payments, or an option to enter into such arrangements).

Pensions funds increasingly engage in maturity matching and hedging of interest rate risk

Similarly, pension funds in some countries (*e.g.* Denmark and the Netherlands) are increasingly engaging in maturity-matching and the hedging of interest rate risk. Such approaches substantially reduce the negative impact of a drop in interest rates. For open DB pension funds, however, such hedging techniques can be difficult to implement, especially if the liabilities are linked to salary growth, for which there is a lack of effective hedging instruments.

The structure of non-life insurers' liabilities will affect interest-rate sensitivity

The structure of non-life insurance liabilities (*i.e.*, the expected timing of payouts from loss events) will affect interest rate sensitivity. Non-life insurers with short-tailed liabilities can be expected to have lower interest-rate sensitivity than insurers with longer-tailed risks, whose claims would be paid further into the future. Overall, in comparison with life insurers, one would expect non-life insurers to have a smaller negative duration gap; therefore, they would be less affected by a drop in interest rates.

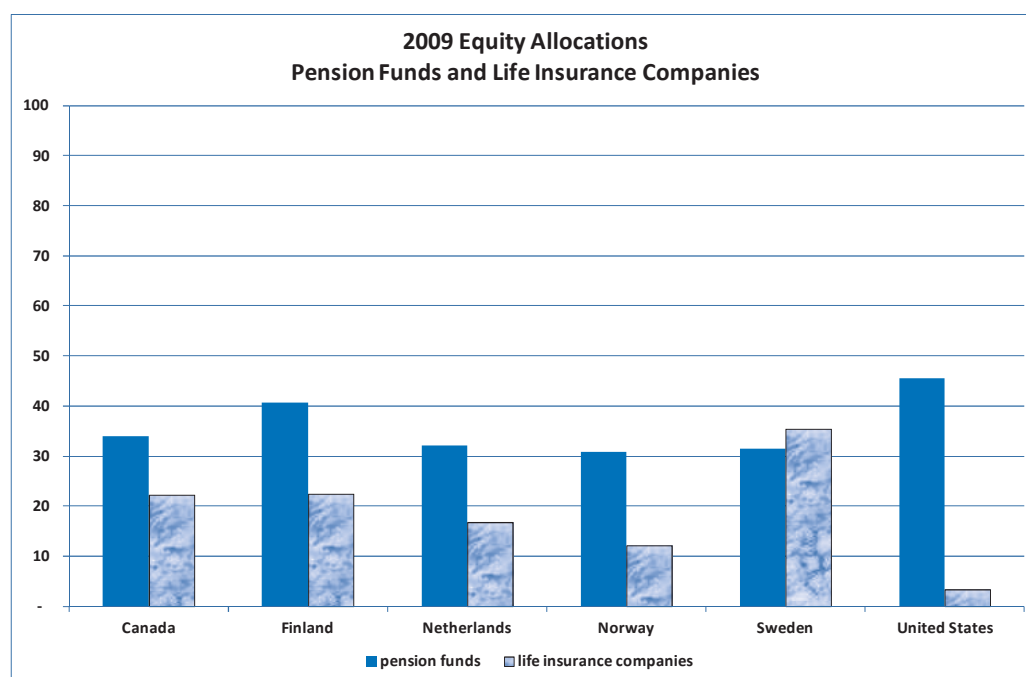
Inssofar as lower rates benefit banks and other corporations, this would benefit insurers and pension funds by reducing the credit risk in their investment portfolios.

The impact of low interest rates on returns depends on the structure of the portfolio

The impact of lower interest rates on investment portfolio valuations and returns also varies, depending on the allocation to bonds, and how the returns on equities and other asset classes are affected by lower interest rates. In general, pension funds have lower allocations to bonds, and higher allocations to equities, relative to life insurance companies (see Figures 1 and 2).

Figure 1. **Equity allocation among pension funds and life insurance companies**

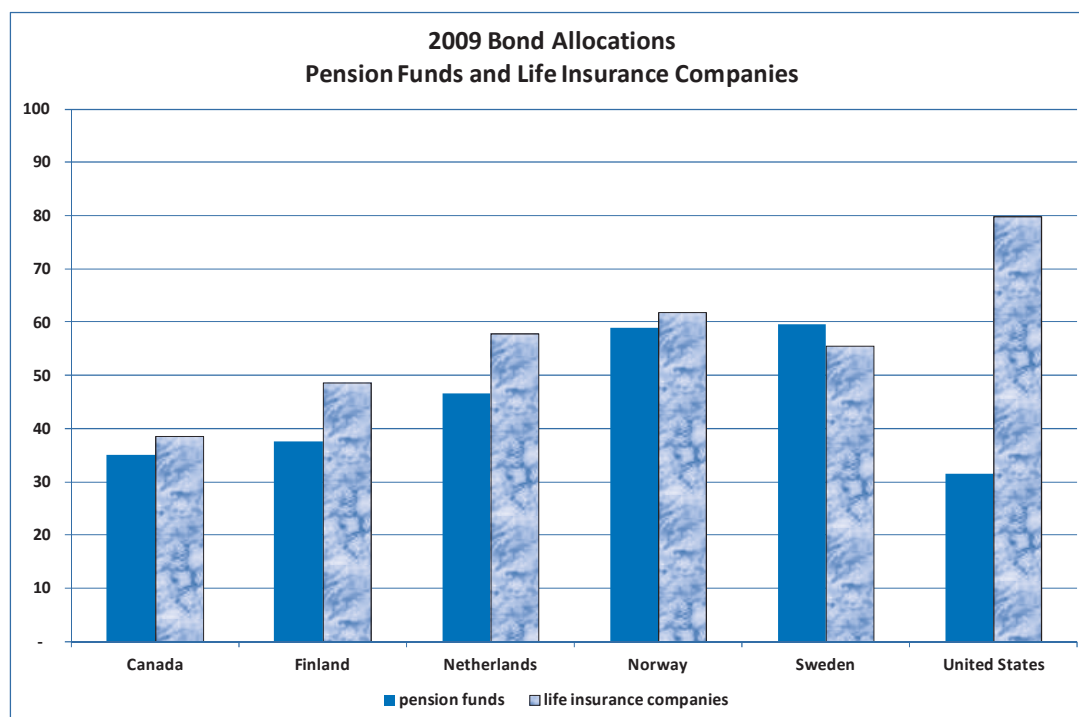
As percentage of total assets, 2009



Source: OECD Global Pension and Insurance Statistics.

Figure 2. **Bond allocation among pension funds and life insurance companies**

As percentage of total assets, 2009



Source: OECD Global Pension and Insurance Statistics.

*DC pension funds
will experience
valuation gains*

DC pension funds, to the extent they offer no guarantees regarding returns or benefits, will experience gains in their bond holdings from the drop in interest rates, the size of which will again depend on the duration of their assets and the slope of the yield curve. Hence, DC pension funds will, in general, see a temporary improvement in investment performance. For DC pension fund investors close to retirement, however, the gain in asset value is likely to be offset by the lower annuity values they will get as a result of lower interest rates.

III. Impact of protracted low interest rates on life and non-life insurance companies

The question addressed in this section is what might be the overall impact on the insurance sector of a prolonged period of low interest rates. A scenario of protracted low interest rates is one whereby interest rates stay at (relatively) low levels for prolonged periods of time. At the outset, it should be noted that it is hard, if not impossible, to generalise about the insurance sector as a whole, as individual companies have different mixes of assets and liabilities, and operate in different environments, so that the implications of protracted low interest rates would differ from company to company. That said, a distinction can be made between the life and non-life insurance sectors, with adverse effects more likely to arise for life as compared to non-life insurance companies.

1. Implications for life and non-life insurance companies

The need to distinguish between life and non-life insurance companies arises because the structure of assets and liabilities of these two sectors typically differs. Many non-life insurance contracts are rather short-term, extending over one year (although they are typically tacitly renewed), with payouts for short-tailed risks expected to be paid in the short to medium term.

*Life insurance
companies have
more long-term
liabilities*

By contrast, life insurance companies have more long-term liabilities, which could stretch even over several decades. Additionally, they have made explicit return guarantees, such as guaranteed interest-rate returns, guaranteed minimum income (annuity) streams, or other guarantees that could be difficult to fulfil in an environment of protracted low interest rates on government bonds and stagnating or deteriorating capital-market valuations.

*Consequently, the
duration of
liabilities of life
and non-life
insurance
companies differ*

As a result of these differences, the duration of liabilities of life versus non-life insurance companies differs. The (average) duration of liabilities is relevant, as the asset choices of many financial firms are driven by asset-liability management considerations, in particular by attempts to limit the mismatch between assets and liabilities. As a consequence of the structure of their liabilities, life insurance companies tend to invest in longer-duration assets than non-life insurance companies, although there are exceptions to this general observation for particular companies.

Some life insurers implement hedging strategies based on derivatives, such as swaps and options that allow them “to lock in” higher interest rates. However, such strategies also pose risks, given that any lengthening of the time horizon required for the hedging strategy tends to increase the counterparty risk involved.³

A period of low interest rates raises asset-management challenges when the duration of liabilities exceeds that of assets

As a general rule, where the duration of liabilities exceeds those of assets, a period of low interest rates poses challenges for asset-liability management in that current lower-yielding assets are expected to meet the return assumptions made in the past. Interest income falls as coupon payments from fixed-income instruments and the principal from maturing debt must be rolled over into lower-yielding debt. The extent of this reinvestment risk depends on the extent of the mismatch between the duration of the insurer's liabilities (its effective investment horizon) and the duration of the insurer's assets.

Obviously, the increase in government bond spreads for some lower-rated European issuers may provide some offset, as they promise higher nominal returns, but this offset comes at the price of increased credit risk. The same argument applies to using corporate bonds or any other portfolio reallocation that involves moving out on the credit curve.

Challenges arise where insurance companies have made explicit return guarantees

An important challenge arises when insurance companies have made explicit return guarantees or provided embedded options to their policyholders. Such embedded options include guaranteed floors in unit-linked contracts and options for renewing contracts at guaranteed interest rates, which may become more "in-the-money" as time progresses and interest rates stay low.

Many insurers have adjusted the pricing of variable annuities and/or their specific features so as to reduce their exposure to rising hedging costs. Such retrenching means that life insurers could de-emphasise the strategic importance of one potentially lucrative business activity segment, which is to make increasingly elaborate minimum-return promises to ease Baby Boomers' concerns about the adequacy of their retirement income (given that life expectations are expanding and traditional defined-benefit pensions are on the decline). These changes will likely be reflected in insurance companies' balance sheets and profit-loss statements only gradually, however.

Important consideration: the contribution of investment income to overall profitability

A significant consideration regarding the impact of protracted low interest rates relates to the contribution of investment income to overall profitability. When the portfolio allocation to bonds is high and profitability is driven by interest income, lower interest income is likely to mean reduced profitability. Therefore, profitability would then depend (to a larger extent than before) on underwriting, premium income, claims experience, and lapse rates. In other words, insurance companies will have to place a sharper focus on their core business activities.

The outlook for this core insurance business is overshadowed, however, by the likely macroeconomic developments, although there are considerable differences in this respect from one market to another, reflecting both the economic outlook and some specific insurance-sector characteristics. A protracted low interest rate environment lasting more than three or four years is usually associated with low growth or recession. To the extent that low interest rates coincide with a period of low growth, there are likely to be additional negative effects on insurers insofar as premium growth is linked to economic growth.

The ratings agencies would expect earnings to come under pressure in several insurance sectors. That said, the (average) ratings outlook for the insurance sector as a whole seems to have stabilised after a period in which rating downgrades significantly outnumbered upgrades.

Accounting rules may delay recognition of lower interest rates' impact on insurance liabilities

Accounting rules may delay or even preclude recognition of the impact of lower interest rates on insurance-contract liabilities. The current IFRS allows insurers to follow local GAAP, which may, in some jurisdictions, permit the discounting of insurance liabilities based on the rates prevailing when the policies were first issued, or using the returns on the assets backing the contract liabilities. Thus, there may be a delayed or progressive recognition of the interest rate shock. However, any interest rate shock would have an immediate effect on investment contracts and any other financial liabilities of the insurer (*i.e.*, any liabilities classified as financial instruments). The new IFRS draft on insurance contract exposure, published in July 2010, proposes a new model for the valuation of insurance liabilities, which gives more weight to current market rates. Expected to be effective by 2013,⁴ the new IFRS is thought to be of great importance as it will increase the sensitivity of insurance-company liabilities to interest rates.

2. The risk of “gambling for redemption”

Particularly disturbing is the risk of “gambling for redemption”

There is a particularly disturbing risk associated with sustained periods of low interest rates, which has long been recognized: the risk of “gambling for redemption”. For example, the BIS Annual Report had already noted in 2004 the following: “*However, a more disturbing effect of the lower bond yields is that they may have induced a growing appetite for risk. In the case of insurance companies, with contractual obligations to pay high rates of return on their liabilities, such behaviour became almost a matter of survival. After a period of declining interest rates, the guaranteed rates started to exceed the yields available on highly rated government bonds. The resulting funding gap led such institutions to invest in higher-yielding, higher-risk instruments. Even in those countries with no guaranteed rates, changes in the value of liabilities tended to lead to risk-seeking behaviour.*”

It cannot be excluded that some life-insurance companies might face this temptation to shift portfolio allocations. In particular, when the nominal yields of lower-rated government bonds are higher than those of higher-rated European sovereigns, no additional capital buffers would have to be mobilised. Even Solvency II – which in general requires capital charges to be risk-based – would not require insurers to hold more capital to offset the higher risk exposure, as it does not distinguish between different EU governments in terms of capital requirements.

However, it is difficult to identify clear cut evidence of this activity

Clear-cut systematic evidence that “gambling for redemption” is a significant factor in insurance company asset allocations is difficult to identify. For example, a recent Banque de France study,⁵ looking at detailed statements of more than 150 insurance companies in France, concluded that these entities’ portfolios have recently exhibited a significant shift toward long-term debt to the detriment of equity investments. This development is not clear evidence of a move out on the risk curve. Unless the long-term debt securities are of lower

credit quality (including increased amounts of lower-rated European government debt), this evidence is not indicative of a shift towards riskier assets (*i.e.*, gambling for redemption). A recent BIS study⁶, which drew on meetings with insurers and pension funds, also failed to identify an industry-wide movement toward higher risk asset classes.

IV. The impact of protracted low interest rates on pension funds

The impact depends on the type of pension plan

The impact of a low-interest-rate environment on pension funds depends first of all on the type of pension plan, that is, whether it is a defined-benefit (DB) or defined-contribution (DC) plan, or a mix of the two. In general, regardless of the plan, investment performance and funding ratios are likely to suffer.⁷

1. Defined Benefit (DB) pension funds

The liabilities of a DB plan equal the discounted value of the stream of future cash flows promised

The liabilities of a DB plan are equal to the discounted value of the promised cash flows. If the discount rate is based on long-term interest rates, a protracted low-interest-rate environment implies a higher ongoing level of liabilities. The impact of protracted low interest rates on DB pension funds is largest when future benefits are fixed, which is the case for some pension funds offering a guaranteed return on pension fund contributions that is not linked to salaries or inflation. Also, the longer the duration of the liabilities, the greater the impact.

The situation is different for pension funds that offer benefits linked to salaries or inflation

The situation is different for pension funds that offer benefits linked to salaries or inflation. To the extent that protracted low interest rates anticipate future economic conditions characterised by low growth, low inflation (in both prices and salaries) and low returns on investment, future pension benefits may also be lower. However, protracted low interest rates combined with lower inflation would also reduce wages and thus future benefits to be paid. Consequently, the impact of protracted low interest rates when benefits are not fixed would be reduced over time.⁸

Wage adjustments could be sluggish since long-term term interest rates may reflect global economic conditions, while wage conditions depend more on domestic factors. Furthermore, protracted low interest rates may be driven by temporary factors (special interventions by the monetary authorities, excess demand for bonds) and not necessarily reflect a lower growth and lower inflation environment. Hence, the adjustment in cash flows need not necessarily occur, or at least it is unlikely to fully offset the impact of protracted low interest rates. In such circumstances, low nominal interest rates will translate into very low or even negative real interest rates, which could create major funding pressures on DB plans offering benefits linked to salaries or inflation.

The actual impact of low interest rates on reported DB funding ratios depends on the

The actual impact of low interest rates on reported DB funding ratios will also depend on the valuation method used. Defined-benefit plans can have several different funding levels, depending on the purpose: for financial reporting purposes; for regulation (to be used by supervisors in determining minimum required contributions, the regulatory solvency funding level); for tax

valuation method used

reporting; and for termination purposes (to be used upon plan closing or the buy-out of accrued benefits with an insurance company. The reason that the funding level would differ for each of these purposes is that the requirements for each tend to be different. For example, the discount rate and other assumptions, the actuarial funding method for valuing liabilities, as well as whether the assets are priced at market value or using some other measurement could be different for each of these distinct purposes.

Two key questions to determine the effect of a protracted low-interest rate environment on a defined-benefit plan's liabilities are the following:

- To what extent are the plan's future promised cash flows dependent on future wages, inflation and bond yields, and to what extent are these variables (future wages, inflation and bond yields) already reflected in the expected future cash flows used to value the plan's liabilities? All else being equal, lower expected future cash flows means lower liability for a defined-benefit plan.
- Once the expected future cash flows of a plan have been determined, they need to be discounted to the valuation date using a specific discount rate. To what extent is that discount rate based on prevailing bond yields? All else being equal, a lower discount rate means higher liability for a defined-benefit plan.

Regulatory solvency purposes

In some countries, the level of liabilities used to determine minimum required contributions (the regulatory solvency level) is calculated as if the pension fund were to be terminated as of the valuation date. Therefore, the cash flows would be fixed based on salaries and indexation as of the valuation date; hence, the impact of protracted lower interest rates would be quite large (as there would be no downward adjustment to future expected cash flows due to lower wage growth and inflation expectations).

Some countries set regulatory solvency levels for liabilities and minimum required contributions based on a fixed discount rate not explicitly linked to actual bond yields; as such, the effect of a drop in bond yields would not be immediately felt. Certain other countries, such as Japan and the United States, also apply smoothing mechanisms to market rates when calculating the discount rate to be used in pension valuations. Canada also recently revised its measure for determining funding ratios. Effective January 1, 2011, the solvency ratio for federally regulated plans is being calculated using a three-year average. In general, such smoothing measures would tend to limit or at least delay the effects of a low-interest rate environment on reported funding values.

Accounting purposes

For accounting purposes, methodologies are much more consistent across countries than is the case for regulatory solvency purposes. For accounting, discount rates tend to reflect actual bond yields, while future salary growth is included in benefit estimations. The assumptions used for inflation and future salary growth are, however, usually adjusted only gradually. A lower discount rate would increase liabilities and charges to plan sponsors' profit-loss statements, but to the extent that inflation and salary growth expectations are adjusted downward over time, the impact of protracted lower interest rates

would be reduced due to lower expected future benefits. In practice, the anticipated inflation and salary levels used by pension funds are not adjusted often. Small pension funds and annuity providers, for instance, may not have the resources to have a full actuarial model and to change the cash flows assumptions regularly. Instead, they would use their central bank's long-term inflation target to calculate liability levels (for example, the recent European Central Bank inflation target of 2%) and adjust their assumptions only when the central bank revises inflation expectations.

Increases in longevity will be more heavily felt in low-interest-rate environments

It should be noted that in a low-interest-rate environment, cash flows due to be paid far into the future by a pension fund are more heavily weighted in determining liabilities, contributions and costs. This means that, all else being equal, increases in longevity will be more heavily felt in a low-interest-rate environment, as compared to a higher or more "normal" interest rate environment.

Protracted low interest rates may also affect the asset side of pension funds' balance sheets. To the extent that protracted low interest rates reflect lower economic growth, and thus lower profits, returns on different asset classes, and therefore on portfolio investment, could also be lower.

2. Defined-contribution plans

To the extent that protracted low interest rates reduce returns on investments, pension plan assets will be directly affected

Defined contribution plan assets will also be directly affected by a period of protracted low interest rates. The aggregate size of the effect will depend on the fund's investment strategy and the extent to which the equity part of the portfolio also suffers from a low-interest-rate environment. Over the long-term, lower investment returns will translate into lower benefits, unless employees and employers contribute more to these plans in order to attain the same level of retirement benefits that would have been achieved in a more "normal" interest rate environment, or take on more risk in their investment portfolios. Furthermore, low interest rates are likely to lead to higher annuitisation costs, making it more expensive for members to transform their defined-contribution savings into annuity benefits.

If the defined-contribution plan contains a minimum-return guarantee (in effect, a cash-balance approach), then depending on the rate at which the guarantee is activated and the level of interest rates, this may raise the cost of providing the guarantee.

3. Implications for financial stability

Two main concerns

From a financial stability perspective, the two main concerns regarding pension fund operations are the following:

Intensification of the search for yield

First, pension funds, particularly defined-benefit (DB) ones, may intensify their search for yield, buying higher-risk products, including some that may have limited liquidity and transparency. In their drive for profitable investment opportunities, they may intensify asset price bubbles, causing severe dislocations in investment flows and asset prices. The herd-like behaviour often observed

among pension funds may further exacerbate this problem. There is some evidence that such a trend is well under way, with a continuing and growing appetite for alternative investments (hedge funds, private equity and commodities), as well as emerging-market bonds and emerging-market equities. Such a trend has even been observed among the generally more conservative pension funds of countries such as Denmark and the Netherlands (see Table 1 and Figure 3). Actual allocations to hedge funds and private equity have increased in recent years in other countries, such as Ireland (from 0.8% in 2005 to 2.4% in 2008) and Switzerland (from 2.8% in 2005 to 4.3% in 2008), though part of the increase is due to valuation effects.

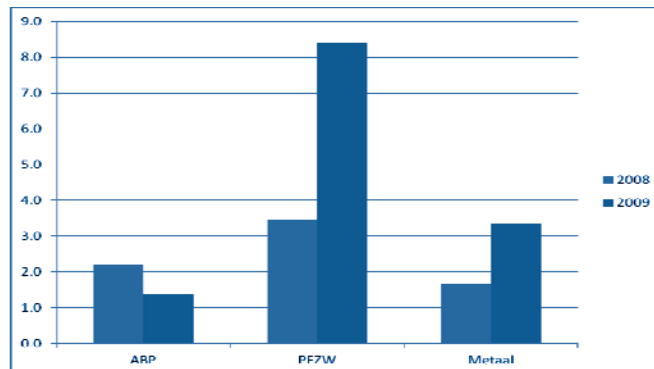
Table 1. **Asset allocation of select pension funds**

	ABP	PFZW	PFA	Metaal Bedrijven
Equities	33.1%	31.7%	8.6%	23.5%
Bonds	40.3	29.9	84.3	54.7
Real estate	9.4	14.5	5.0	8.2
Hedge funds and PE	9.9	7.4	2.1	12.3
Commodities	2.9	6.3	0.0	0.4
Cash and deposits	0.7	4.1	0.0	0.0
Other	3.7	6.2	0.0	0.9

Source: OECD Pension Markets in Focus, 2010.

Figure 3. **Dutch pension funds' reallocation into alternative investments**

Net cash flow into real estate, commodities, hedge funds and private equity as percentage of total assets under management at the beginning of the year



Source: OECD Global Pension Statistics.

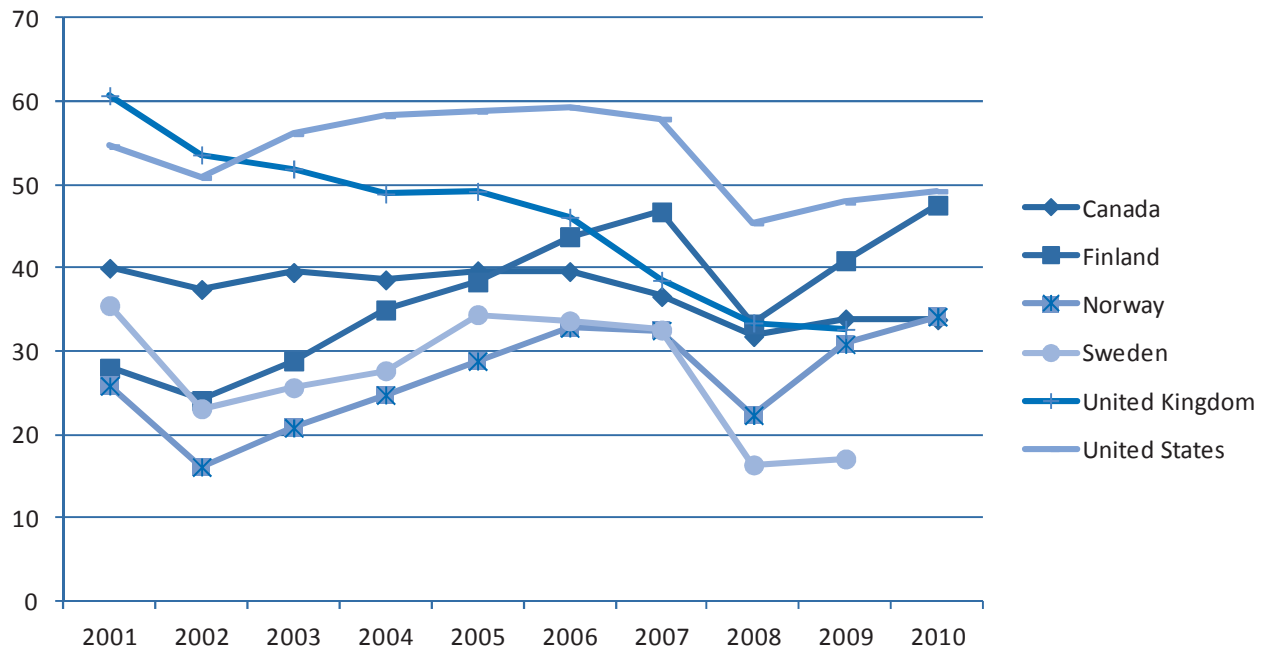
*A diminished
appetite for more
traditional equity
risk*

This trend has also coincided with a diminished appetite for more traditional equity risk in some countries, which stems partly from the experience of two market shocks in the same decade, as well as changes in accounting practices. As shown in Figure 4, pension funds' equity allocations were reduced prior to the 2008 crisis in various countries, such as the United Kingdom and the United States. In particular, DB pension funds in the United States reduced their equity portfolios by 14% (before valuation effects) in 2008, relative to their equity holdings at the end of 2007, and by 17% in 2009 (relative to their

holdings at the end of 2008). However, the positive return to equities in 2009 meant that the actual allocation to this asset class at market prices increased in 2009 relative to 2008. On the other hand, in some countries such as Turkey, decreased expectations for bond performance has led to a slight shift towards equities and time deposits.

Figure 4. **Equity allocation among pension funds in select OECD countries**

As percentage of total assets



Source: OECD Global Pension Statistics.

Pension funds may seek to hedge interest-rate risk by increasing bond allocations and portfolio duration and via derivative transactions

Second, pension funds may seek to hedge interest-rate risk by increasing their allocation to bonds and by increasing the duration of their investment portfolios, as well as engaging in derivative transactions in a large and coordinated way, creating further downward pressure on bond yields. Such effects are likely to be strongest in countries with quantitative, risk-based funding regulations, such as Denmark and the Netherlands. For example, the use of market prices for calculating pension assets and liabilities (especially the application of spot discount rates) and the implementation of quantitative, risk-based funding requirements appear to have aggravated pro-cyclicality in pension fund investments during the 2008 financial crisis, in certain countries such as Denmark, Finland and the Netherlands. While in Denmark and Finland regulatory changes were made to ward off the massive sale of equities, mortgage bonds and other securities, pension funds in the Netherlands fell into a vicious circle due to their use of the spot swap curve to value liabilities. Their heavy demand for long-term swaps put downward pressure on the long swap rate, which further intensified this demand.⁹

V. Conclusions

Lower interest rates affect pension funds and insurance companies on both the asset and the liability side of their balance sheets

In conclusion, lower interest rates will impact pension funds and insurance companies on both the asset and the liability side of their balance sheets. While lower interest rates increase the value of fixed-income securities, they increase the liabilities of pension funds and insurance companies, with the extent of the impact depending on: (1) whether future cash flows are fixed; and (2) to what extent benefits to be paid in the future are being adjusted to reflect the new economic environment. Protracted low interest rates reflective of a lower-growth economic environment will reduce the returns on portfolio investments. Thus, lower long-term interest rates could lead to pressure to adjust pension promises or guarantees downwards, or to adjust contributions and premiums upwards in order to pay for the pension and insurance promises that become more expensive to provide in a protracted low-interest-rate environment.

Protracted low interest rates affect investment opportunities

Protracted low interest rates will have an effect on the investment opportunities of insurance companies, and the level of this effect will depend on the structure of the entity's liabilities and assets. Those insurers with guaranteed payouts to be made far into the future, but holding a portfolio of assets largely comprised of short- to medium-term fixed-income securities, will be more affected by reinvestment risk than insurers with a better duration match between assets and liabilities. In this regard, a distinction naturally arises between life and non-life insurance companies, given the typical difference in the structure and duration of their assets and liabilities.

Other things equal, one would expect a potentially greater impact on life insurance companies, given that the core of their business involves promises that extend over long periods and entail fixed payments or contain embedded options. The need to find adequate fixed-income returns to match these promises may, under a scenario of protracted low interest rates, prompt institutions with particularly high levels of mismatching to significantly alter the risk profile of their investments. While the risks of such a strategy being adopted are non-trivial, it is difficult upon casual inspection to identify specific examples.

The "search for yield" may have an impact on financial stability

A "search for yield" without due consideration of risk raises concerns from both a prudential and a financial stability perspective. The temptation to resort to such practises is likely to be particularly pronounced in the case of DB pension funds and those offering return guarantees, although in some countries pension funds are, or will soon be, subject to solvency regulations similar to those of insurers that penalize risky investments. One specific concern is that interest-risk hedging activities could put further downward pressure on bond yields, thus further worsening the situation of pension funds and life insurers.

Need for closer monitoring of life insurers and pension funds

Overall, a protracted period of low interest rates calls for proactive regulatory initiatives, and greater supervisory scrutiny in the form of regular monitoring by pension and insurance supervisors. Such monitoring should include stress tests that reflect the impact of protracted low interest rates.

Notes

1. See Kablau and Wedow (2011).
2. For example, for a typical defined-benefit pension plan, a 100 basis point drop in long-term bond yields could mean, all else being equal, an immediate increase of liabilities in the order of 20%.
3. Schich (2008) draws attention to the fact that financial institutions offering long-term annuities at fixed rates may face considerable counterparty credit risk when trying to hedge long-term interest rate risk. The collapse of Lehman Brothers was an example of the materialisation of that type of risk, as that entity had been counterparty to interest rate swaps.
4. IFRS (2010).
5. Lekehal *et al.* (2010).
6. BIS (2011).
7. The risks associated with a protracted low-interest-rate environment on pension funds were recently discussed in several forums, for example at the International Organisation of Pension Supervisors (IOPS). IOPS members discussed the impact of protracted low interest rates at their November 2010 meeting. They agreed that persistently low interest rates are not only an accounting problem. Their main message was “*the need to adjust expectations to this potential low growth environment*”.
8. In a world of perfect equilibrium, the impact of protracted low interest rates would be offset by changes in the value of cash flows or liabilities due to downward adjustments on wages and the inflation-linked indexation of benefits.
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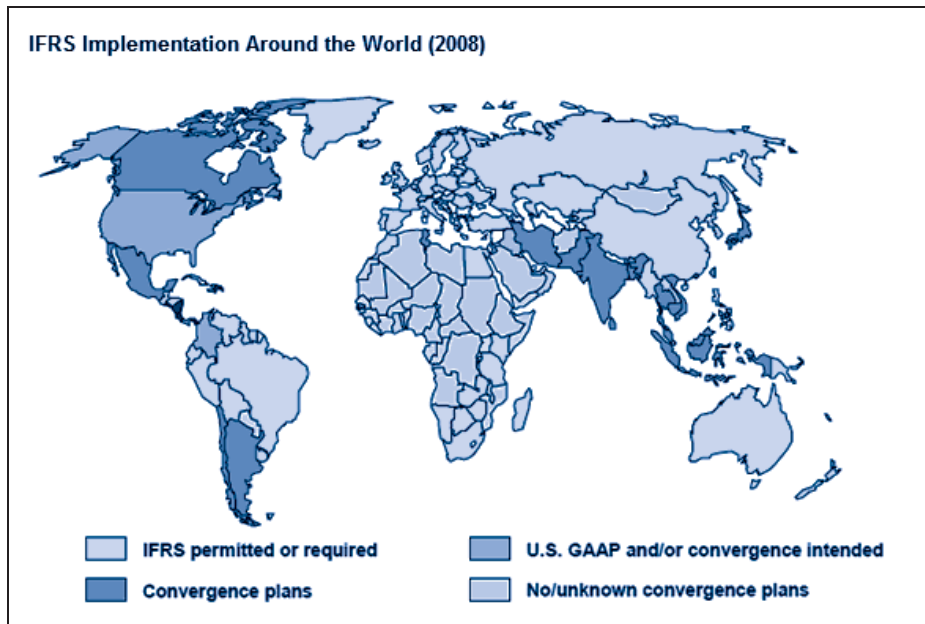
Annex A.

Valuation of funding levels for DB pension funds: a comparison of approaches

The assets, liabilities and funding levels of a DB plan can differ widely, as can its sensitivity to low interest rates, depending on the type of valuation method used and its purpose. Following is a description of the two main types of valuation methods used for accounting purposes and for regulatory solvency purposes.

1. Accounting funding levels

The expected future cash flows, assets, liabilities, and therefore the funding level of a defined benefit plan (at least for those sponsored by exchange-listed companies), tend to be calculated on a standardised basis in a large number of countries due to the prevalence of international accounting standards (the IFRS and US GAAP have similar requirements for the calculation of assets and liabilities in defined-benefit pension plans). The following map shows the global use of IFRS and US GAAP, as well as those countries with convergence plans to IFRS, as of 2008.

Figure A.1. **IFRS implementation around the world**

Source: KPMG (http://us.kpmg.com/jnet/English/Archives/2009/Issue1/Index_Print.asp).

Under international accounting standards, pension plan assets are required to be measured at their market value. As mentioned above, under a protracted low interest rate scenario, pension plan assets would likely have lower future returns, and this would be reflected in the market value of plan assets over time.

International accounting standards require that the expected future cash flows that form the basis of a pension plan's valuation be determined using best-estimate assumptions, including best estimates of future wage growth and inflation. To discount these expected future cash flows, international accounting standards typically require defined-benefit plans to be valued using a discount rate equal to the yield on long-term, high-quality domestic corporate bonds. In countries where there is not a deep market in corporate bonds, the yields on long-term domestic government bonds are typically used. Defined-benefit plans located in Canada, the Euro area, the UK and the USA are typically valued using long-term, high-quality corporate bond yields as these markets are considered deep. Practice is mixed in Japan, Korea, Malaysia, Mexico and Switzerland; for countries other than these, the markets are not typically considered deep, so government bond yields are used.¹

Changes in bond yields, and hence the discount rate, can have a significant impact on a plan sponsor's balance sheet and profit-loss statement. A 100 basis point drop in bond yields could mean, all else being equal, an immediate increase in liabilities in the order of 20% for the typical defined-benefit plan and an even bigger increase in the annual service cost, which directly affects a company's annual corporate profits.

Prolonged low interest rates could have a significant financial impact on the balance sheet and profit-loss statement of the employer sponsoring the defined-benefit plan. In some countries such as the UK, when calculating liabilities for accounting purposes, it is fairly common to adjust the inflation assumption on an annual basis, based on the yields of index-linked sovereign bonds; therefore, if the yields on such bonds were also to go down, this would offset some of the impact of a decrease in yields. The reason for this is that many plans in certain countries, including the UK, have benefits that increase each year based on wage growth and the increase in inflation. If the assumption as to future inflation expectations were to be adjusted downwards, then these benefits would not be expected to increase as much in the future, and hence the associated liability would be lower. That said, plan sponsors in many countries do not tend to adjust the inflation assumption from year-to-year, but set it equal to their central bank's expectations which do not tend to change often. In such cases, there would be no downward or upward adjustment to the inflation assumption in most years, and as such, the full effect of the bond yield drop would be reflected in the plan's liabilities, and hence in the financial statements. Over time, however, as actual wage and inflation levels decline relative to what is reflected in the financial statements, a lower level of liabilities would correct for the overly high inflation assumption used.

2. *Regulatory solvency funding levels*

As discussed above, requirements for determining assets, liabilities and funding levels for accounting purposes are quite standardized across many countries. By contrast, the regulatory requirements used to establish statutory minimum contributions for pension funds (based on a determination of assets

1. IASB (2009); the data presented were provided by the International Actuarial Association.

minus liabilities) are much more diverse. The reason for this is that the assumptions and methodology used to determine assets and liabilities are very different across countries. For example, in some countries, the expected future cash flows that form the basis for the valuation of a defined-benefit plan's liabilities are based on current salaries, whereas in other countries, the liabilities are based on salaries projected for when participants are expected to leave or retire from their plans – these different approaches could have a large impact on the level of reported liabilities, and hence the minimum contribution levels required. Furthermore, some countries (such as Belgium, Canada and Japan) require regulatory funding levels to be calculated using a market discount rate, such as the yield on government bonds. Others require a fixed discount rate (Finland, Ireland, Germany, Norway, Portugal and Spain) or a rate chosen prudently, taking into account, if relevant, an appropriate margin for adverse deviation, based on either or both (1) the yield and expected future return on assets held; and (2) the redemption yield on government or other high-quality bonds equal to the future expected return on plan assets (the United Kingdom). All else being equal, those countries using market discount rates would have a higher sensitivity to a drop in bond yields compared to those countries using a fixed discount rate. The table below summarises the requirements for calculating pension liabilities for regulatory solvency-reporting purposes.

Table A.1. Requirements for calculating pension liabilities

Country	Accrued liabilities / Technical Provisions	Discount rate and other economic assumptions
Belgium	The calculation of technical provisions must be prudent and take into account the risk profile of the pension fund. Furthermore, the technical provisions must at least equal the vested reserves, which are determined by the pension plan rules and the Social and Labour law. When Belgian social legislation is applicable, the technical provisions must at least be the maximum of vested rights as defined in the plan rules and own contributions accumulated, with an interest rate of 3.75%. Minimum vested rights are calculated on the basis of current salaries with an interest rate of 6% and specific mortality tables (MR 88-90 tables for males and the FR 88-90 table for females).	Belgian prudential legislation: the discount rate for the calculation of the technical provisions has to be chosen in a prudent manner and take into account: (i) the return on covering assets, as well as future returns; and/or (ii) the return on bonds of a Member State or other high-quality bonds.
Canada¹	Plan termination liability (current unit credit). Effective 1 January 2011, the solvency ratio for federally regulated plans will be calculated using a three-year average.	Interest rate of “x”% per annum for 10 years and “y”% per annum thereafter. The rate “x” is equal to the annualised market yield on 7-year Government of Canada benchmark bonds plus 90 basis points. The rate “y” is a more complicated blend of market yields on such 7-year bonds and on long-term Government of Canada benchmark bonds, again plus 90 basis points. Lower interest rates apply when the plan provides indexation of pensions; the formulas are specified in the CIA Standards of Practice.
Finland	Accrued benefits calculated under current	3.5%-3.8% depending on the plan

Country	Accrued liabilities / Technical Provisions	Discount rate and other economic assumptions
	unit credit method.	
Germany	The technical provisions are the present value of the future liabilities minus the present value of the future premiums. The valuation of liabilities includes salary increases or inflation revaluation between the valuation date and retirement age if these are included in the pension promise.	The maximum discount rate for <i>Pensionskassen</i> and <i>Pensionsfonds</i> (if the latter offer insurance-like guarantees) is currently 2.25% for new plans. <i>Pensionsfonds</i> can use market interest rates on a best-estimate basis if they offer no insurance-like guarantees.
Ireland	Plan termination liability (current unit credit), including mandatory revaluation of benefits with 4% cap, until retirement	(a) a pre-retirement discount rate of 7.50%; (b) a long-term, post-retirement discount rate of 4.50%; (c) a pre-retirement price inflation rate of 2.00%; and (d) a post-retirement long-term rate of price inflation of 2.00%.
Japan	Plan termination liability (current unit credit)	80-120% of 10-year government bonds issued during the previous 5 years.
Netherlands	Accrued benefits calculated under current unit credit method	Discount rate for the valuation of liabilities is based on swap rates. Smoothing is allowed for determining contributions.
Norway	Accrued benefits calculated under current unit credit method	4% discount rate until 1993. For contributions due after 1 January 2004 and pension funds established after 1993, the maximum rate is 3%; 2.75% for new contracts after 2006.
Portugal	Accrued benefits calculated under current unit credit method. If indexing of pensions is contractually guaranteed, then an allowance for the effect of future indexing must be included in the calculation of the accrued liabilities	4.50%
Spain	Projected Benefit Obligation (including salaries at retirement - projected unit credit method)	The maximum rate is fixed every year according to the average of Spanish public debt in the last quarter of the year. In 2011 it was set at 4.81%. Inflation assumption of 1.5-2.0%.
Switzerland	Accrued benefits calculated under current unit credit method	
United Kingdom	Accrued benefits must be calculated on a prudent basis	The discount rate in the UK can broadly be described by the following equation: discount rate = risk free rate + risk premium A suitable government bond yield is typically used for the risk-free rate. Any spread over the risk-free rate is typically based on a prudent assessment of the potential for additional return given the investment strategy. The investment strategy and any allowance for additional return should take into account the ability of the employer to cover the risks taken.
United States (Single Employer Plans)	Accrued benefits calculated under current unit credit method	Modified yield curve (three segments) based on a two-year average of top three levels of high-grade corporate bonds of appropriate duration.

1. The information for Canada in this table applies to defined-benefit pension plans regulated at the federal level. Provincially regulated plans may have different requirements, particularly for the maximum allowable amortisation period.

PART III

Debt Management and Bond Markets

Outlook for the Securitisation Market

by

Hans J. Blommestein, Ahmet Keskinler and Carrick Lucas^{*}

Securitisation issuance has slumped in recent years, with the market having become increasingly dependent on central bank and government support in both Europe and the United States. Despite facing a number of threats that could inhibit a recovery in the shorter term, the securitisation market is expected to recover over a longer term horizon. Funding costs have improved, but investor confidence in the asset class remains weak, and the impact of regulatory reform is as yet difficult to fully assess.

A long-term sustainable recovery for the securitisation market remains in the hands of regulators and policy makers. They must be awake to the possibility that a recovery in securitisation markets could be a prerequisite to unlocking credit markets in general and supporting a wider global economic recovery.

JEL Classification: A1, E6, F3, G1, G2, G3.

Keywords: Securitisation, Mortgage-backed securities, Bond Market, Financial Markets.

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I. Introduction to structured-finance securitisation¹

The US subprime securitisation market was a catalyst for the global credit crisis

The US “subprime-cum-securitisation” crisis was a key catalyst for the global liquidity crisis that mutated into a full-blown credit crisis, bringing the international financial system to the edge of the abyss². In hindsight, the numerous structural shortcomings of the structured-finance securitisation market - particularly in the US - may have seemed obvious. The misalignment of incentives was evident in every link along the structured-finance securitisation chain. Proper risk evaluation was not always undertaken by professional investors and intermediaries, while too much faith was put in credit rating agencies whose own methodologies for valuing complex structured finance products were at times flawed. In addition, other gatekeepers of the public trust including auditors, securities lawyers, regulators and supervisors failed, to varying degrees.

Securitisation provides benefits to both issuers and investors

Securitisation has traditionally offered banks with a key source of long-term funding, and thereby allowed for improved balance sheet management. It has been credited with increasing the availability of credit, while decreasing its cost. Investors also benefit from securitisation by gaining direct risk exposure to diversified sectors of the economy. More generally, the key benefit of structured finance securitisation was said to be the ability to disperse and redistribute credit risk to a broader and more diverse investor base.

Yet risk concentration increased; and the market became illiquid at the first signs of financial stress

Ironically, risk concentration turned out to have risen sharply, and was a key contributor to the widespread banking sector losses witnessed during the global financial crisis. In the run-up to the financial crisis, banks were allowed to significantly leverage up their balance sheets with limited disclosure, concentrating both their investment and funding needs in an asset class that proved to be illiquid at the first signs of financial stress. Financial stability was also weakened because securitisation led in several instances to a lowering of banking standards³. A number of new structured products became overly complex and opaque, while risks were seriously underpriced⁴. The considerable size of the securitisation markets made them an important factor in the global “liquidity-cum-credit crisis”.

The European securitisation market did not suffer to the same extent as the US

However, it is important to note that not all structured-finance securitisation was as unsound as was the case in the US subprime mortgage sector⁵, which by itself represented less than 10% of all US securitised mortgages. Securitisation acted primarily as a legitimate funding tool in Europe, as opposed to securitisation being an “*end in itself*” for capital arbitrage reasons as was often the case in the US. Moreover, there was much less disengagement by European underwriters (and hence, more “skin in the game”) than by their US colleagues, and regulation and underwriting standards were seen to be significantly more robust in Europe. It was never really a credit story for the European

securitisation market, but one of investors taking mark-to-market losses as securitisation markets became illiquid and prices fell. A survey conducted by Bishopsfield Capital Partners in June 2010 revealed that 73% of investors believed losses were attributed to market re-pricing rather than actual credit impairments.⁶ In addition, 65% of respondents agreed that “securitisation as a general investment type had truly been damaged by the credit crisis.” There’s no doubt that the securitisation asset class in general was tarnished by the fallout from the US subprime crisis.

Structured-finance default rates were considerably lower in Europe

However, in *Europe* this under-pricing mainly reflected liquidity risks, while credit risk was often properly priced. For the most part, collateral performance has remained strong in the past few years. Indeed, the resilience of the European structured-finance market can be evidenced in the post-crisis default data compiled by rating agencies such as Standard & Poor’s. From mid-2007 to the end of 2010, only 0.95% of all European structured-finance issues defaulted, compared to 7.7% of US structured-finance issues, and 6.3% among the universe of global corporate bonds (Table 1).

Table 1. European structured-finance default rates (mid-2007 to Q4 2010)*

ABS	Structured Credit	CMBS	RMBS	All European	All US structured finance*	All Corporate**
0.16%	2.86%	2.74%	0.07%	0.95%	7.71%	6.34%

*by initial issuance volume

** by number of ratings

Source: Standard & Poor’s.

The securitisation market is expected to recover in the longer term

In the wake of the crisis, structured-finance securitisation issuance has dropped sharply. Key segments of the market continue to rely on government-backed liquidity and asset purchase programs. Yet despite the aforementioned structural shortcomings, it seems likely that in the long run, structured-finance securitisation will once again become an important channel for debt markets; in the shorter term, securitisation may even rebound to support the global economic recovery, provided certain important pre-conditions are in place.

But faces a number of threats in the short term

This article identifies key threats to these pre-conditions, which in turn could inhibit or delay a recovery in structured-finance securitisation markets.⁷ To that end, the article will assess the recovery of securitisation from the perspective of funding costs, regulatory reform, and investor demand. At the same time, however, it is likely that the structure of securitisation products may differ from those in the past. For example, products may be simpler in structure, offering more transparency and a

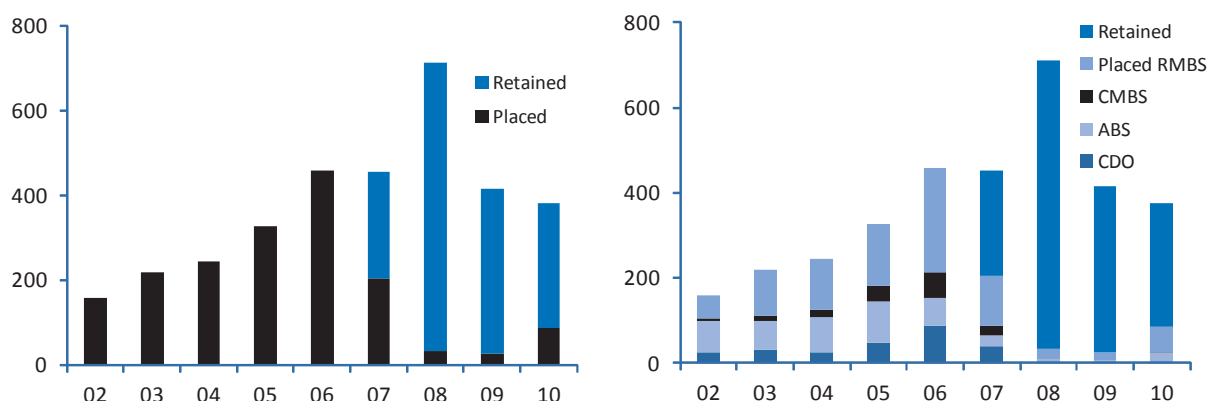
higher quality of collateral than before the credit crisis⁸. As such, this article will assess investor demand in the context of tested single-layer structures, improved disclosure, and heightened regulation.

II. Securitisation issuance levels

Issuance levels slumped following the global financial crisis

Prior to the global financial crisis, benign economic and financial conditions fuelled an explosion in global securitisation issuance, peaking at around USD4 trillion in 2006. Following the crisis, issuance of private-label securitisation slumped. Although there have been some signs of a re-emergence in European issuance in 2010, key segments of the securitisation market continue to rely on support from the ECB's liquidity program, and is aptly named "retained"⁹ issuance (Figure 1).

Figure 1. European securitisation issuance 2002-2010, EUR bn



Source: AFME (Association for Financial Markets in Europe).

Placed issuance is beginning to slowly recover in Europe

European "placed" issuance totalled EUR88 billion in 2010, made up largely of UK and Dutch prime RMBS (residential mortgage-backed securities). While this figure was a marked improvement on the EUR25 billion of placed issuance recorded in 2009, it fell significantly short of the EUR460 billion of placed issuance seen at the height of the market in 2006. Perhaps the best indication of a recovery taking shape in Europe is the increase in "placed issuance as a proportion of total issuance", from 6% in 2009 to 23% in 2010. Looking at the issuance "retained" by financial institutions, a majority continues to be backed by RMBS, although 2010 has also seen a surge in WBS (whole business securitisation) loans in the UK, and SME (small and medium-sized enterprise) loans in Spain.

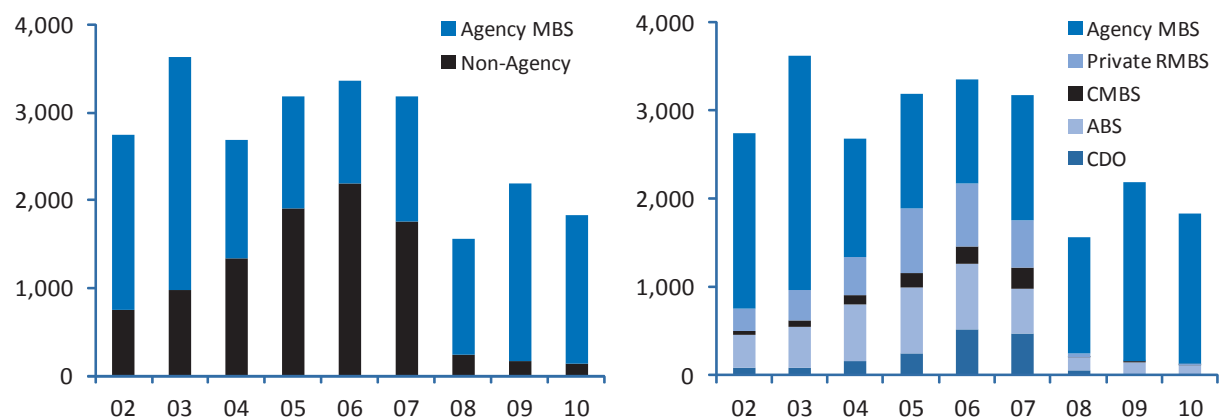
US securitisation remains dependent on the

At the peak of the market in 2006, issuance of structured finance securitisation in the United States was almost four times that of Europe issuance¹⁰ (Figure 2). In the US, the federal mortgage agencies (including

federal mortgage agencies

Freddie Mac, Fannie Mae and Ginnie Mae) are currently funding more than 90% of US mortgages, and as a result are crowding out any near-term recovery in private-label issuance.

Figure 2. American securitisation issuance 2002-2010, USD bn



Source: SIFMA (Securities Industry and Financial Markets Association).

US non-agency issuance has yet to show signs of recovery from the slump in 2008

Indeed, US non-agency issuance fell from USD2.2 trillion in 2006 to a mere USD129 billion in 2010. This 2010 non-agency issuance figure was largely confined to the relatively vanilla segment of ABS (asset-backed securities, excluding mortgages) - in most part made up of auto loans and student loans. In 2010, issuance of collateralised debt obligations (CDOs) and home equity loans (HEL) in the US were almost negligible compared to the peaks reached in 2006.

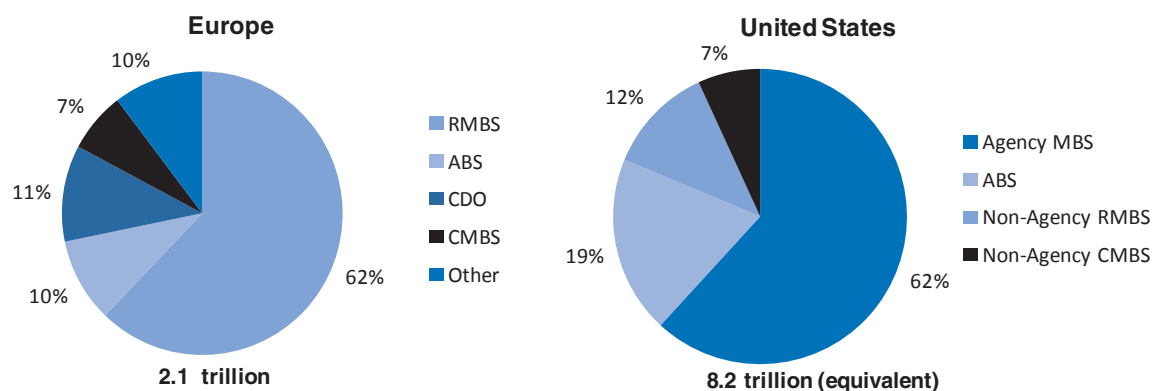
III. Securitisation market outstanding

Over half of European securitisation is retained by banks (vs. almost zero at the start of 2008)

By the end of the March 2011, more than half (51.7%) of the 2.1 trillion in outstanding European securitisation was estimated to have been “retained” by originating banks¹¹. The growing share of retained issuance (from almost zero at the beginning of 2008) is both a stark reminder of the funding difficulties faced by European banks, and also the significant role the ECB is playing as liquidity provider to the European banking system. Total securitisation outstanding in the US market was equivalent to 8.2 trillion (or four times that of European issuance) at the end of 2010.

Two-thirds of securitisation is comprised of RMBS

The charts below provide a breakdown of total securitisation outstanding in both Europe and the US at the end of 2010 (Figure 3). Around two-thirds of the European market was comprised of relatively-vanilla RMBS securities, while around two-thirds of the US securitisation market was based on MBS products issued by the US federal mortgage agencies.

Figure 3. European and US structured-finance outstanding (Dec. 2010)

Source: SIFMA (Securities Industry and Financial Markets Association) and AFME (Association for Financial Markets in Europe).

IV. Securitisation as a source of funding

Securitisation funding costs are beginning to improve

The volume of structured-finance securitisation issuance remains at low levels, with net issuance projected to again be negative in 2011¹². Prior to the crisis in 2008, European issuance was to an important degree driven by funding needs, while capital relief was an additional driver of issuance in the US. Securitisation is less likely to offer banks capital relief advantages in the future, as regulators increasingly require on-balance sheet consolidation¹³ of securitised products. Securitisation has therefore become just one of a handful of funding options. On a more positive note, the funding costs related to securitisation have returned to more competitive levels following the dramatic widening in spreads witnessed during the global credit crisis. The ECB's liquidity programme¹⁴ has been an important driver of gross issuance in recent years given the eligibility of securitisation products (such as MBS and ABS), as has the repackaging of existing downgraded structures.

In Europe, spreads are on a par with unsecured bank debt, but significantly wider than spreads on covered bonds

If we compare the funding costs of alternative financial securities at the end of 2010, we find that the spreads on European prime RMBS were at similar levels to those of senior unsecured bank debt. Prime RMBS spreads in the two key European markets (UK and the Netherlands) had narrowed to around 150 basis points above euribor by the end of 2010¹⁵, from peaks of more than 350 basis points in 2008. In comparison, lower-rated senior unsecured bank debt could be issued at similar spreads relative to the swap curve¹⁶, while covered bonds could be issued at significantly lower spreads (around 25-50 basis points above the swap curve in the case of German Pfandbriefe). Covered bond issuance has surged in the past year since the asset class benefits from lower funding

costs and relatively preferential regulatory treatment.¹⁷

Spreads are also improving in the US, but agencies continue to crowd out private-label issuance

In the United States, the federal mortgage agencies now fund more than nine out of ten new mortgages, largely crowding out private origination. By May 2011, only two private-label RMBS deals had been launched since the onset of the financial crisis, the most recent transaction at a relatively tight 50 basis points above government-guaranteed agency levels¹⁸. While funding costs are returning to more favourable levels for issuers, investor demand remains timid and secondary market activity relatively illiquid.

Other factors are more likely to be inhibiting the recovery

While spreads have narrowed and securitisation has become more attractive as a diversified source of bank funding, a number of other factors are likely to inhibit a complete recovery in the near term. Key segments of the market continue to rely on government-backed programs, which have the effect of crowding-out private-label issuance; the full impact of regulatory reform efforts remains unclear; and investor confidence remains shaken. The costs and reputational risks associated with wide-ranging regulatory reform could inhibit a recovery in securitisation, prompting investors to demand higher premiums from the asset class in the future.

V. Investor demand remains weak

Investor confidence in securitisation has yet to recover

Investors were badly burnt by securitised assets during the global credit crisis, and the reputation of the entire asset class was tarnished. Capital flight and illiquidity infected the wider market for collateralised products. Investors are now burdened with more uncertainty regarding regulatory changes and increased due diligence requirements. In the current economic climate, investors have again become risk-averse, and continue to be burdened by legacy structured product that remains on their balance sheets.

The banking sector was the key pre-crisis investor, but remains under pressure from regulatory change

Banks have traditionally been the key investor in securitisation markets but are now facing the need to rebuild capital, reduce leverage, and change the mix of assets they have available to meet regulatory liquidity demands. It has been estimated by some market participants that around half of the pre-crisis investor base had disappeared, including bank-sponsored SIV, CDO and ABCP conduits that were responsible for fuelling demand for securitised products at the height of the boom. It also remains uncertain as to which part of the investor community will be capable of filling this void. A full recovery in the demand for securitised products is unlikely if securitisation remains excluded from the list of eligible assets under the Basel III capital and liquidity regulations. Tougher capital requirements contained within Solvency II are also likely to dampen demand for securitised product from insurance companies (see

Section VI of this article for further information on key regulatory changes).

Investor demand for simpler structures with high-quality collateral is returning

Investors are also demanding stricter credit terms, improved disclosure, simpler structures, and a reputable originator. These stricter credit terms¹⁹ include prime-only loans with low collateral risk, and clean pools that start out with zero impairment. Yields need to be attractive enough to compensate investors for the limited liquidity available in the secondary market, while heightened sovereign risk has also affected issuance levels in a number of countries. Demand for securitisation could diminish until 2013; some European investors perceive senior bank debt to be carrying an implicit government guarantee until 2013, in light of developments in Ireland.

Investors are widening their search for yield-enhancing assets

Nonetheless, demand for highly rated European securitisation is slowly recovering as narrowing corporate bond spreads and returning risk appetite encourage investors to reassess these higher-yielding assets. In 2010, demand was strongest for prime RMBS in the UK and the Netherlands, auto loans in Germany, and credit card receivables in general²⁰. Anecdotally, there have been signs that private investor demand is also returning to the market from hedge funds and commercial banks, as they cast their nets wider in search of higher returns. However, hedge fund demand is notoriously volatile, and following a two-year rally in prices, the hedge fund sector cannot be relied upon to provide long-term support to the market.

VI. Are regulatory reform efforts likely to inhibit a recovery in securitisation?

The impact of regulatory reform efforts is as yet difficult to assess, although likely to delay the recovery

Significant regulatory reform efforts are now underway in both Europe and the United States to address the shortcomings of the securitisation market and the wider banking industry. The consensus continues to be that it remains difficult to assess the cumulative effects on the securitisation market. While new regulations are necessary and may make sense on an individual basis, there remains a possibility that the full cumulative impact of regulatory reform (including non-intended and/or interacting consequences) could be unexpectedly high. This uncertainty could preclude or delay some investors from returning to the market in the short term. However, in the medium term, it seems likely that regulatory efforts are likely to bolster investor confidence by helping to realign incentives, improve disclosure requirements, and increase product transparency through the standardisation of data, representations and warranties. The following are a number of key regulatory changes.

Risk retention rules

Risk-retention rules are likely to increase “skin in the game” for issuers, and marginally raise costs

The introduction of “risk retention rules” will force issuers to retain an ownership interest of at least 5% in the assets they securitise, thereby addressing a key shortcoming of securitisation by increasing “skin in the game.” In *Europe*, risk retention requirements came into effect in January 2011 under Article 122a of the Capital Requirements Directive (CRD II), and require issuers to retain a material net economic interest of not less than 5% on an ongoing basis. The Article also requires originators and crucially investors to undertake heightened due diligence²¹, risk management and disclosure practices on an on-going basis or face punitive penalties. In the *United States*, the 5% retention rule is to be applied as part of the July 2010 Dodd-Frank framework²². Retention rules are likely to lead to higher administrative and capital costs for originations and increase the due diligence burden of both issuers and investors.

Impact of Basel III liquidity requirements

Under Basel III, bank liquidity ratios are likely to exclude securitisation

Proposed Basel III liquidity requirements are likely to limit future demand for securitised products by the banking sector, which has traditionally been the largest investor in the asset class. In its present form, Basel III banking regulations propose that Asset Backed Securities (ABS) be excluded from the list of securities eligible for meeting the proposed Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR)²³. In this context, ABS comprise all collateralised securities, including mortgage-backed issues. In contrast, covered bonds and highly rated corporate bonds attract a more favourable risk weighting²⁴. With banks thought to comprise more than one-third of the securitisation investor base, Basel III reforms are likely to lead to a reallocation in investor demand away from structured-finance securitisation and toward covered bonds. While the liquidity ratio requirements are not slated for implementation until 2015, it is possible that they could be incorporated into the upcoming EU Capital Requirements Directive (CRD IV) to support bank stress-testing as early as 2012. Stricter capital requirements for insurance companies contained in Solvency II²⁵ are also likely to temper investor demand for securitisation.

Credit Rating Agency Reform²⁶

Credit rating agencies are also being targeted by regulators

Credit Rating Agencies (CRAs) also played a contributing role in the lead up to the credit crisis, with faulty ratings and flawed assumptions leading to significant losses for the holders of securitised products. As a result, rating agencies are now facing a raft of regulatory changes aimed at remedying the shortcomings pertaining to limited oversight, inherent

conflicts of interest, and inadequacies of the “originate-and-distribute” model. Regulatory efforts are targeting improvement in transparency and disclosure requirements, internal governance structures, supervisory oversight, and registration requirements for the credit rating agencies. Moreover, differential rating scales must now be applied to structured finance products, while regulators in Europe additionally require credit rating agencies to disclose the sensitivity of the assigned credit rating to changes in key credit risk modelling parameters. Increasingly, regulators are also toying with the idea of creating institutions that would act as alternatives to rating agencies. Reforms in the United States already propose that federal agencies remove all statutory references to credit ratings from their rules and regulations (Securities & Exchange Commission and Dodd-Frank legislation, Section 939A)²⁷, and replace them with appropriate alternative standards.

Collateral eligibility criteria

Central banks are tightening their eligibility criteria for securitisation

Central banks have begun tightening the collateral criteria for securitised products they deem acceptable in their repo operations. In January 2011, the European Central Bank (ECB) raised the haircut applicable to ABS (asset backed securities, including mortgage-backed securities) from 12% to 16%. In addition, to be eligible for repo from March 2011 on, ABS will need to carry two triple-A ratings at issuance, and a single A rating over the life of the security. By mid-2012, the ECB also plans to implement “loan-level reporting requirements” for ABS it accepts in its repo operations, and the Bank of England is expected to implement a similar “loan level data initiative” by the end of 2011²⁸. While these loan-level initiatives are likely to improve disclosure and transparency within the securitisation market, the general tightening in collateral eligibility criteria may further deter banks from investing in securitised products in order to generate liquidity. There have been suggestions by some market analysts that the ECB’s implicit funding of the securitisation market could inhibit a full recovery in private-label issuance. Until such a time that liquidity support and government guarantee programs are scaled back, a revival in European and US private-label issuance is likely to be limited.

VII. Housing finance reform and securitisation in the United States

Federal mortgage agencies monopolise the market for securitised product in the United States

The Government Sponsored Enterprises (GSEs) of Fannie Mae and Freddie Mac were placed in government conservatorship in September 2008 during the worst of the global financial crisis. In addition to Ginnie Mae, these three government-guaranteed federal mortgage agencies are now funding 90-95% of new US mortgages. The remainder of mortgages are in large part being retained on bank balance sheets. In response to the

housing market collapse and ensuing financial crisis, the US government raised the maximum GSE conforming-loan limit in high-cost areas from USD 417 000 to USD 729 790 in 2008, which had the effect of crowding out private-label RMBS issuance. This temporary increase in the conforming-loan limit is set to expire in September 2011 and fall back to USD 625 000. A return in the GSE conforming-loan limit to its original pre-crisis level of USD 417 000 might become a pre-requisite for incentivising the return of private sector investors to the securitisation market. To additionally encourage competition from the private sector in the shorter term, policy makers have also proposed raising GSE guarantee fees and gradually increasing the qualified mortgage down-payment target. Indeed, a full recovery in the non-agency securitisation market is likely to materialise only after much-needed mortgage reforms are put in place.

The US government plans an eventual exit of Fannie Mae and Freddie Mac from the securitisation market

A February 2011 report on US housing-finance reform²⁹ proposed a number of strategies that could allow for the eventual exit of the Government Sponsored Enterprises (GSEs) from the housing market. The reform plan proposes that “the government’s future primary role would be limited to robust oversight and consumer protection, targeted assistance for low and moderate-income homeowners and renters, and carefully designed support for market stability and crisis response”. The housing reform white paper also proposes the winding down of Fannie Mae and Freddie Mac in favour of a fully privatised system, with options for either a government backstop or government reinsurance program to support the market during times of stress. While the outcome of the reform effort remains uncertain, the proposed changes are likely to take years to fully implement, and until such a time, the US housing market will remain heavily reliant on government support.

The proposal to create a US covered bond market might also help unlock credit

In the absence of a healthy US securitisation market, the proposal by policy makers to create a US covered bond market could also help unlock credit, encourage private sector capital, and support an eventual market exit by the Government Sponsored Enterprises. A bill supporting the US Covered Bond Act was introduced in the House of Representatives in March 2011. It proposed the creation of a US covered bond market that could fulfil the role of funding a wide array of assets, from mortgages to student loans – the very asset classes that securitisation has traditionally funded in the US. However, a number of significant hurdles are yet to be cleared.

VIII. Conclusions

Securitisation markets are expected to

The US subprime securitisation market played an important contributing role in the recent global financial crisis. Significant

recover at such a time that the impact of regulatory efforts becomes clearer

regulatory reform efforts have since been undertaken to improve the disclosure and transparency for this asset class in general, the eventual and cumulative effects of which are yet to be fully assessed. Once pre-conditions for a recovery are in place, investor confidence is expected to return, allowing securitisation to once again become an important channel for both debt markets and the general economy over the medium term.

In the shorter term, a recovery in issuance may be inhibited

During this transition period, it is important for market participants and regulators to weigh the costs associated with regulatory changes versus the benefits that securitisation can offer through the redistribution of credit risk. The risk remains that should a recovery in securitisation fail to materialise, banks will be forced to raise capital from other sources in order to meet heavy securitisation redemption schedules over the coming years. The financial sector depends upon a well-functioning securitisation market, one that is built on simple structures and a high level of transparency and disclosure. Creating the appropriate regulatory framework at the current point in time will help ensure sustainability of the securitisation market over the longer term.

Long-term recovery in the securitisation market remains in the hands of policy makers and regulators

A sustained recovery in private-label securitisation is unlikely to occur until policy makers have enough confidence in their economies to allow securitisation markets to be weaned off government support. In this context, important steps are being put in place that should allow the banking sector in developed countries to return to a modicum of good health. Improvement in housing market conditions is also important to re-establish confidence among consumers, investors and financial sector participants. In the medium term, the US Administration is planning an eventual exit from the securitisation market by its government-sponsored agencies, in favour of a return by private interests in the housing-related securitisation markets. This process is likely to take a number of years.

Notes

1. Structured finance securitisation refers in this document mostly to private-label securitisation products. Another category of securitisation is linked to the pass-through securities issued by the US federal mortgage agencies (*e.g.* Fannie Mae and Freddie), (IMF, 2009). Covered bonds could also be considered a form of structured finance, but we will treat them as a separate category as they do not involve tranching or SPVs, instead remaining on the balance sheet (see Blommestein *et al.*, 2011).
2. Blommestein (2008a).
3. Altunbas *et al.* (2009).
4. Blommestein (2008b).
5. Even in the US, not all securitisation can be classified as “unsound”. For example, securitisation of several prime assets (such as automobile loans) can be considered as “proper” securitisation activity.
6. Nawas and Yeoh (2010).
7. Without putting in place the pre-conditions for “sound” securitisation (that is, the creation of a framework with proper incentives for valuing credit risks), banks will face (*ceteris paribus*) a structural contraction of their funding sources.
8. Blommestein (2008a).
9. European banks create internally-structured securitisations (typically Residential Mortgage-Backed Securities) that can be used as collateral for liquidity generation via the ECB, in turn freeing up their own balance sheets for further lending.
10. Reflects an average EUR/USD daily exchange rate of 1.26 in 2006, when comparing non-agency issuance in the US to placed issuance in Europe.
11. AFME (2011). Compare this to 7% retained issuance (as % of total issuance) at the end of 2007.
12. Barclays Capital (2011).
13. Recent US FASB accounting changes (SFAS 166/167) will make it more difficult for issuers to use off-balance sheet treatment for securitisations (on-balance-sheet treatment is required when the bank has “control” of the assets). Other recent changes to capital requirements will affect re-securitisations (in Europe), ABCP conduits, and the exposures of bank trading books.
14. The ECB accepts ABS as collateral for its regular repo operations, meaning that institutions with a euro zone banking licence can access ECB liquidity against their ABS holdings. ABS holdings are considered as eligible collateral in ECB monetary policy operations.
15. In December 2010, UK prime RMBS (35% of European RMBS market) had narrowed to +150 basis points and Dutch RMBS to +142 basis points (22% of market). Data from JP Morgan European ABS Outlook: H1 2011.

16. The iBoxx Senior Financials Index was priced at around 140 basis points above the swap curve, Dec. 2010 (Markit).
17. See Blommestein *et al.* (2011).
18. California-based REIT Redwood Trust launched the US\$290m the Sequoia Mortgage Trust 2011-1 RMBS transaction in February 2011 (See Reuters' article "IFR-Sequoia details bolsters case for RMBS market revival" dated 1 Mar 2011). In comparison, investor resistance was evident in the US CMBS market in July 2011. Investors forced Goldman Sachs and Citigroup to restructure and improve the credit enhancement on two CMBS issues they were bringing to the market, and improve pricing on the lower-rated tranches.
19. The increase in credit enhancement was in most cases not the result of investor pressures but driven by underlying fundamentals.
20. AFME Securitisation Data Report Q4:2010.
21. Investors are now required to "demonstrate a minimum level of due diligence when investing in structured finance securities". This regulation is designed to reduce investor reliance on credit ratings.
22. The US retention rule excludes both federal mortgage agencies and Qualified Residential Mortgages (QRM) that have a down payment of more than 20% (or a loan-to-value ratio of less than 80%).
23. In addition, Basel III stipulates that securitised products that were previously held in trading books, must now meet the higher capital requirements that apply to the banking book. These changes, in turn, will also result in higher capital requirements for securitisation, on the margin.
24. Covered bonds and corporate bonds rated AA- or higher will be classified as Level 2 liquidity assets in the LCR calculation. Level 2 assets are subject to a 15% haircut and are capped at 40% of total liquid assets. In the NSFR calculation, covered bonds and corporate bonds rated AA or higher are required to finance only 20% of their exposure via stable, long-term sources of funding (compared to 100% for securitisation issues).
25. Solvency II is a EU directive, establishing the framework for risk-based capital assessment of insurers.
26. See Fitch Ratings (2011) for more complete information regarding regulatory changes affecting credit rating agencies.
27. The SEC proposal would see credit rating references removed from the S-3 form (a key document for primary offerings of public securities), applicable to companies that have issued more than \$1 billion in debt securities over a three-year period.
28. See Bank of England (2010).
29. The Department of the Treasury and the U.S. Department of Housing and Urban Development (2011).

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Annex A

Securitisation Structures

“Securitised products” can be identified and classified in a number of ways. The following classification of securitisation structures focuses more on the US market but could be equally applicable to Europe and Asia.

1. Mortgage-Backed Securities (MBS)

(i) Pass-through mortgage-backed securities

Pass-through MBS are the most common and simplest structure in the US market. Mortgages are pooled together by the US federal mortgage agencies or private-label originators, and a pro-rata share of all interest and principal repayments is “passed through” to investors. The pool of mortgages is packaged together and a single security is created. There are three US federal mortgage agencies. The two Government-Sponsored Enterprises (GSEs) are best known as Freddie Mac (Federal Home Loan Mortgage Corporation) and Fannie Mae (Federal National Mortgage Association). The GSEs are chartered by Acts of Congress and were owned by private shareholders prior to the global financial crisis, but are now under government conservatorship, which provides them with an effective government guarantee. The third US federal mortgage agency is Ginnie Mae (Government National Mortgage Association), and is responsible for guaranteeing mortgage-backed securities backed by federally insured or guaranteed loans - in most part from the Federal Housing Administration (FHA) and Department of Veteran Affairs (VA).

(ii) Residential mortgage-backed securities (RMBS)

RMBS are debt instruments secured by residential mortgages. They differ from pass-through securities in that more than one security is created from the same pool of mortgages. These multiple securities – or tranches of the RMBS structure – have different credit characteristics, and typically provide a trickle down repayment structure to the benefit of investors in the higher-rated securities.

(iii) Commercial mortgage-backed securities (CMBS)

CMBS are debt instruments secured by commercial property such as offices, shops, factories and warehouses, as well as apartment complexes and hotels. They enable banks to pool and repackage their commercial property loans. Similar to RMBS, a CMBS structure contains a number of tranches or securities.

(iv) Collateralised mortgage obligations (CMO)

Collateralised mortgage obligations repackage pass-through mortgage-backed securities into a number of different bond tranches with different maturities, better meeting the needs of investors by reducing the prepayment risk that is prevalent within RMBS structures. To compensate for this reduced prepayment risk, CMOs offer lower interest rates than a conventional pass-through security.

2. Asset-Backed Securities (ABS)

In the context of this classification, asset-backed securities are defined as collateralised-bonds backed by assets other than real estate. *(Under an alternative classification structure, the term ABS could be interchangeable with the term “securitisation” which also encompasses mortgage-backed securities).*

Asset-backed securities are collateralised by the cash flows attached to a specific pool of underlying assets that may include loans, leases or receivables, and are typically issued by special purpose vehicles (SPVs). These underlying assets can include:

- (i) **Auto loans:** vehicle loans as the underlying collateral.
- (ii) **Credit card receivables:** receivables on credit cards as the underlying collateral.
- (iii) **Consumer Loans:** personal loans as the underlying collateral.
- (iv) **Student Loans:** student loans as the underlying collateral (prevalent in the US).
- (v) **Equipment Leases:** leases on business equipment as the underlying collateral.
- (vi) **Whole Business Securitisation (WBS) Loans:** can be likened to securitised leveraged buy-outs (LBOs). They are based on the residual cash flows from an operating business, and often involve the pledge of shares. WBS loans are most prominent in the UK market.
- (vii) **Home Equity Loans (HEL):** a loan using the equity in one's home as collateral.
- (viii) **SME loans:** collateral is based on loans to small and medium-sized enterprises (and are similar to lease ABS). SME loans can also include mezzanine debt and are most prominent in the Spanish and German markets.

3. Collateralised Debt Obligations (CDOs)

Collateralised Debt Obligations (CDOs) are structured asset-backed securities (ABS) that are issued by special purpose vehicles (SPVs), and collateralised by debt obligations (bonds and loans, in addition to other asset-backed securities). They differ from simple ABS products in that the related SPV issues several tranches offering varying degrees of risk and return to meet the needs of investors. These include senior tranches (typically rated AAA), mezzanine tranches (rated BB to AA), and junior or equity tranches (unrated). The trickle-down repayment structure of a CDO implicitly creates leverage for the holders of below-senior tranches, which therefore carry a significantly higher premium. The more common CDO classifications are CLOs and SF CDOs, but can include a number of less-familiar structures:

- (i) **Collateralised Loan Obligations (CLO):** backed primarily by leveraged bank loans resulting from the leveraged buyout (LBO) activities of private equity or M&A investment banking interests. CLOs can also include the repackaging of other loans/assets from a bank's balance sheet into a CDO structure.
- (ii) **Structured Finance CDO (SF CDO) or ABS CDO:** CDO structures backed by other asset-backed (ABS) and mortgage-backed (MBS) securities. In 2006, it was estimated that more than 50% of all CDOs were categorised as Structured Finance CDOs, and not atypically would contain the lower-rated (mezzanine or BBB) tranches from subprime RMBS structures.
- (iii) **Other CDO Structures:** include Collateralised Bond Obligations (CBOs - whose assets can include high-yield or emerging market debt); Commercial Real Estate CDOs (CRE CDOs); or Collateralised Insurance Obligations (CIO CDOs).
- (iv) **Derivatives of CDOs:** the more exotic CDO structures include Synthetic CDOs (whose underlying assets are Credit Default Swaps or CDS); and CDO squared (a CDO of CDOs).

OECD Statistical Yearbook on African Central Government Debt: Summary and Overview*

by

Hans J. Blommestein and Perla Ibarlucea Flores**

The borrowing requirements of African governments in financing their budget deficits are increasingly met by selling marketable instruments but also by the issuance of non-marketable debt in the form of bi-lateral, multi-lateral and concessional loans.

The second edition of the OECD Statistical Yearbook on African Central Government Debt provides comprehensive quantitative information on African central government debt instruments, including both marketable and non-marketable debt. Individual country data are presented in a comprehensive standard framework to facilitate cross-country comparison.

JEL Classification: G2, G28, H63

Keywords: African borrowing requirements and debt instruments, public debt management, OECD Statistical Yearbook on African Central Government Debt

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The *Statistical Yearbook on African Central Government Debt* is an OECD publication that provides unique and comprehensive information on African central government debt instruments, debt stocks, maturity structure, and interest rates. The objective of this part of the *OECD Project on African Public Debt Management and Bond Market* is to disseminate annually revisions and updates in the form of paper and electronic editions.

A. Key responsibilities of government debt managers

Meeting borrowing needs at lowest cost

The key responsibilities of government debt managers are the issuing of debt instruments to meet the borrowing needs of governments at the lowest possible cost,¹ the management of the outstanding stock of debt, and the contribution to the development of an efficient market infrastructure in order to maintain good access to the markets for government bills and bonds. The type of debt instruments to be issued, and the amounts to be raised, depend not only on the volume of borrowing requirements but also on the liquidity of the various outstanding instruments, preferences of investors and, more generally, the financial and macroeconomic environment. Successfully raising funds through marketable instruments will depend on factors such as access to well-functioning primary and secondary markets (in particular the degree of market liquidity), and the presence of a well-developed institutional and retail investor base.

B. The Statistical Yearbook as analytical and policy tool

Debt managers from a growing number of African markets are facing challenges similar to those of their counterparts in advanced markets due to competitive pressures from global finance and the related need to implement OECD leading practices in this policy area.²

The Statistical Yearbook provides reliable and consistent information on sovereign debt in African markets

The *Statistical Yearbook* provides greatly improved statistics on African central government debt instruments and debt stocks, that are both reliable and consistent. The statistics provide detailed data on both marketable and non-marketable debt instruments in African countries, with a view to providing an analytical tool to not only government debt managers, but also financial analysts from commercial financial institutions, research institutions, central banks, international financial institutions, and government agencies.

C. Statistics presented within a standard framework to facilitate pan-African analysis

Facilitating pan-African comparative analysis

Statistics in the *Statistical Yearbook on African Central Government Debt* refer to both resident and non-resident holdings and are presented within a standard framework to facilitate Pan-African (cross-country) analysis. The publication includes Pan-African comparative statistics as well as information about individual African countries on: i) outstanding amounts of marketable and non-marketable debt (Table 1), ii) accumulations and decumulations of marketable and non-marketable debt, iii) term to maturity and refixing of

marketable and non-marketable debt, iv) ownership of local currency marketable debt, v) interest rates (YTM in secondary markets), and vi) macroeconomic indicators such as GDP (Table 2) and exchange rates.

Table 1. Central Government Debt

As a percentage of GDP

	2003	2004	2005	2006	2007	2008	2009
Angola	70.3	55.9	39.0	23.1	24.6	33.1	38.8
Cameroon	61.0	61.7	55.9	21.2	16.5	13.2	14.1
Gabon	61.0	52.9	41.0	33.3	37.3	19.6	26.8
Kenya	61.0	58.8	53.0	48.6	44.1	40.1	44.6
Madagascar	93.1	90.3	85.0	36.6	31.6		
Malawi	160.7	141.2	130.5	31.4	35.0		
Mauritius	58.7	55.1	53.4	47.3	46.4	41.8	49.9
Morocco	60.8	58.2	62.1	57.3	53.5	47.4	47.1
Mozambique	87.5	80.0	74.3	48.1	41.9	39.3	39.2
Namibia	30.0	33.7	32.2	28.6	22.5		
Nigeria	68.8	53.9	28.6	11.9	11.4	11.5	15.4
Sierra Leone	251.1	189.5	162.5	138.5	46.9	48.0	58.2
South Africa	35.5	34.9	34.6	32.7	30.2	27.8	27.1
Tanzania	10.7	10.7	15.1	14.3	15.0	10.8	8.3
Tunisia	60.4	59.7	58.1	53.7	50.7	47.5	47.2
Uganda	67.7	59.7	54.6	48.9	22.8	21.9	
Zambia	137.6	132.3	61.1	23.5	23.7	23.1	24.5

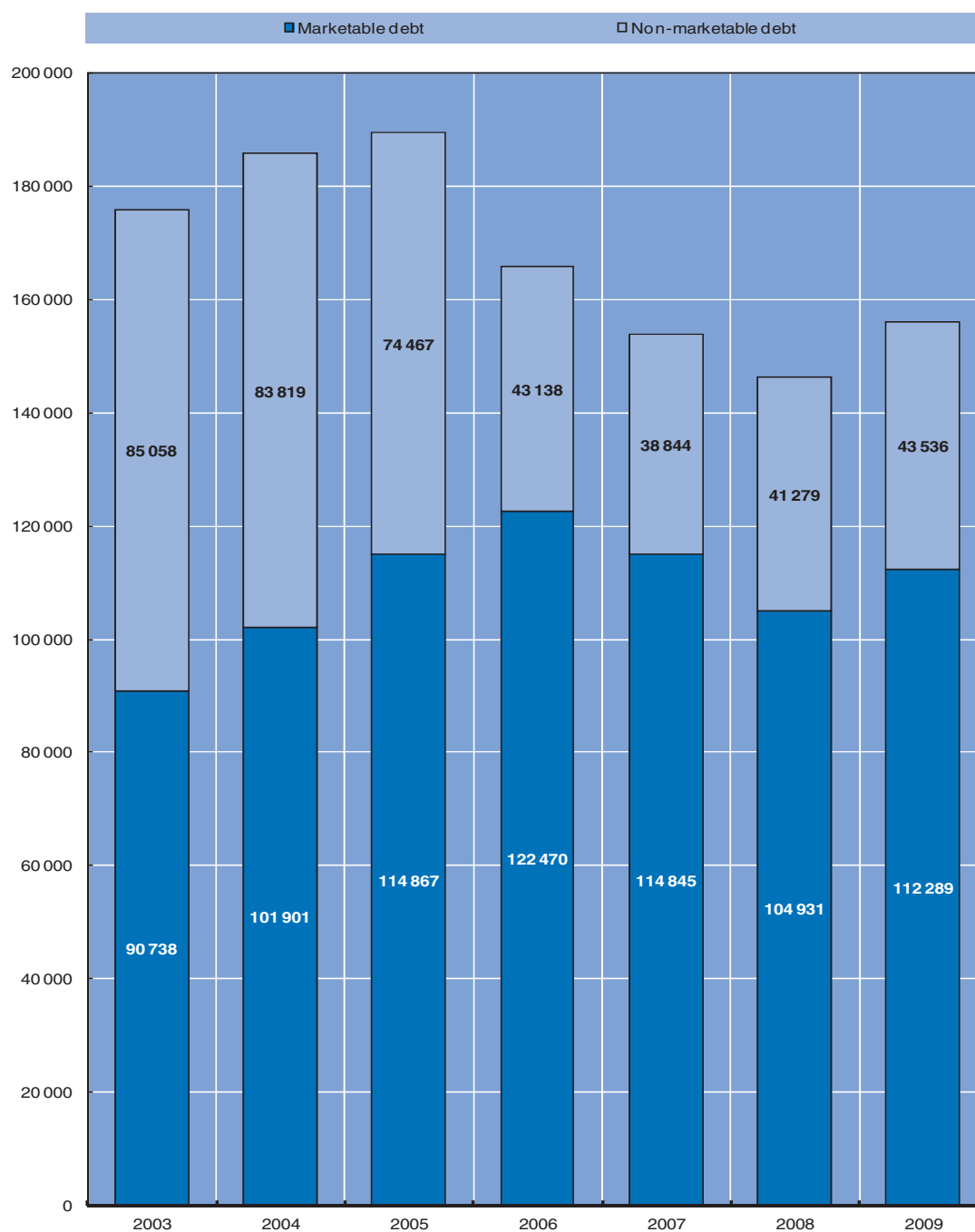
Source: OECD (2011), *African Central Government Debt*, Statistical Yearbook 2003-2009

Table 2. Gross domestic product

*Fiscal year
Million Euros*

	2003	2004	2005	2006	2007	2008	2009
Angola	14 255	20 815	25 199	34 119	41 887	59 613	46 749
Cameroon	12 069	12 705	13 339	14 311	14 928	16 204	15 968
Gabon	5 365	5 781	6 968	7 609	8 431	9 161	7 778
Kenya	11 878	12 017	16 419	17 570	19 410	18 953	20 843
Madagascar	4 670	3 293	4 069	4 670	5 548	6 044	5 534
Malawi	1 748	1 981	2 265	2 268	2 369		
Mauritius	4 672	4 524	5 057	4 565	5 510	5 783	6 311
Morocco	43 021	44 910	48 374	51 824	54 253	61 251	64 711
Mozambique	3 807	4 214	5 546	5 617	5 705	6 901	7 254
Namibia	4 116	4 738	5 260	5 126	5 254		
Nigeria	49 123	62 885	95 448	110 884	132 924	133 342	116 201
Sierra Leone	567	732	999	1 074	1 142	1 354	1 168
South Africa	139 286	167 453	179 294	214 767	189 496	162 402	183 011
Tanzania	8 895	9 659	11 550	10 422	12 363	12 858	13 973
Tunisia	21 016	21 405	23 263	24 074	24 924	27 032	28 114
Uganda	5 802	6 608	8 304	8 596	9 359	10 258	12 796
Zambia	3 646	4 005	7 819	6 750	8 147	8 028	10 161

Source: OECD (2011), *African Central Government Debt*, Statistical Yearbook 2003-2009

Figure 1. African central government debt*Million Euros*

Note: Countries included are Angola, Cameroon, Gabon, Kenya, Madagascar, Mauritius, Malawi, Morocco, Mozambique, Namibia, Nigeria, Sierra Leone, South Africa, Tanzania, Tunisia, Uganda and Zambia.

Source: OECD (2011), *African Central Government Debt*, Statistical Yearbook 2003-2009

Data are provided in national currency for the relevant fiscal year. Aggregate data are converted into Euros (Figure 1). Financial derivatives are excluded, unless otherwise indicated.

The second edition of the Statistical Yearbook provides greatly improved statistics on African central government debt instruments and debt stocks:

- Statistics in the first section includes Pan-African comparative tables within a new standard framework to facilitate cross-country analysis.
- Revised supplementary macroeconomic indicators such as GDP and exchange rates.
- Country data on outstanding amounts of marketable and non-marketable debt show historically revised figures and more accurate time series.
- Historically revised data on accumulations and decumulations of marketable and non-marketable debt and ownership of local currency marketable debt.

D. Countries included in the *Yearbook* differ significantly in terms of development and public debt situation

Yearbook benefited from active contributions from African governments

The Statistical *Yearbook* could not have been accomplished without the active contributions by African debt managers and the generous financial contribution by the Icelandic government. Countries included in this second edition are: Angola, Cameroon, Gabon, Kenya, Madagascar, Malawi, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Sierra Leone, South Africa, Tanzania, Tunisia, Uganda, and Zambia. These countries differ significantly in terms of development (Table 2) and government debt as a percentage of GDP (Table 1).

However, all African governments, regardless of development level, can potentially benefit from implementing OECD leading practices in this policy area. A sound framework for public debt management and market development will enable governments to use local savings to finance the budget deficit and, at the same time, encourage the development of domestic currency bond markets.³

E. Publication based on the methodology of the OECD Statistical Yearbook on Central Government Debt

Publication based on the methodology of the OECD Statistical Yearbook

The publication is based on the methodology of the *Statistical Yearbook on Central Government Debt* for OECD countries. Accordingly, the African Yearbook covers detailed data on central government debt as well as bilateral, multilateral, and concessional loans provided to the central government. Both marketable debt and non-marketable debt are included. Statistics are derived from national sources based on a questionnaire prepared under the auspices of

*on Central
Government Debt*

the OECD. Concepts and definitions are based, where possible, on the System of National Accounts (SNA). It is important to emphasise that statistics do not yet provide data on the overall government debt in African countries given that the institutional coverage is confined to central government only. However, it is envisaged to include in future editions information on general government debt. In the SNA, the general government sector is composed of three parts: central government, state and local governments and social security funds.

F. Third edition of the *Yearbook* will include additional countries

Efforts are under way to expand the publication. The third edition of the *Yearbook* the database is expected to include a further 14 countries, bringing the total number of participating countries to 31.

G. New OECD publication on African debt management and capital market policies

*A parallel OECD
publication will
focus on the policies
supporting public
debt management*

A parallel OECD publication on African debt management and capital market policies (in preparation) will focus on the policies supporting sovereign issuance, public debt management, and the trading of government securities. This future publication will describe and analyse on a country-by-country basis detailed information on the institutional and regulatory framework, as well as the policies underlying primary and secondary markets for debt instruments. Information on secondary market activities (volume, type of instruments, liquidity, prices) will also be included. It is envisaged that this new publication will be part of the work programme of the new *Centre for African Public Debt Management and Bond Markets*, a joint venture of the OECD and the National Treasury of South Africa.⁴

These new annual publications constitute an important pillar of the OECD Project on African Public Debt Management and Bond Markets, sponsored by the Icelandic Government. It complements other pillars, the OECD Forum on African Public Debt Management (focused on strategic debt management policy issues), and Bond Markets (focused on developing bond markets). These meetings constitute a forum for a structured policy dialogue with debt managers, bankers, exchanges, central bankers and other financial officials involved in public debt management and government securities markets. Through the policy dialogue and OECD-led African network, debt managers and policy makers from both sub-Saharan and North Africa are getting efficient and well-structured access to the global knowledge network of OECD debt managers.

Notes

1. While keeping market risk at an acceptable level (Blommestein, 2010).
2. Blommestein and Horman (2007).
3. Interest payments on local-currency debt often consume a larger share of revenues than those on foreign-currency debt, even though foreign-currency debt predominates in nominal terms. This is because local-currency debt is more costly than foreign-currency debt, reflecting the availability of externally-sourced funding on concessional terms and high real interest rates in the domestic market. The policy question arises concerning the appropriate balance between minimising cost and minimising risk, in particular taking account of the major risks related to foreign-currency debt (interest rate, exchange rate and refinancing) and possibility of other budgetary shocks, such as from a sudden drop-off in aid inflows (Blommestein and Horman, 2007).
4. The Centre was launched on 30 June 2011 in Midrand, South Africa.

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