BBVA | RESEARCH

Working Paper
Number 13/21

Global Financial Regulatory Trends and Challenges for Insurance & Pensions

Economic Analysis
Madrid, June 2013

Global Financial Regulatory Trends and Challenges for Insurance & Pensions

Javier Alonso, Tatiana Alonso, Santiago Fernández de Lis, Cristina Rohde y David Tuesta

June, 2013

Abstract

The financial system is undergoing an important regulatory overhaul, gradually increased during the last five years. Solvency II and Basel III are two of the most relevant global initiatives that try to reformulate the future landscape for finance. Under this scenario the Insurance and Pensions (I&P) industry, less affected in the crisis, is undergoing important changes that come from different channels. In this regard, this paper focuses on the main global regulatory trends affecting I&P, either directly from its own regulation or indirectly from changes in the banking sector regulation and strategies. After discussing the relevant characteristics of the different pieces of regulation, this study concludes that there is a great disparity among countries in the initial situation of the I&P sectors, both in terms of solvency levels and the diversification/riskiness of investment portfolios, which will cause different effects from a country base perspective: Notwithstanding this, there is a common challenge about how to reconcile more risk-sensitive regulation with the search for a yield in a world with consistently low interest rates. As a consequence of these new pieces of regulation, it is possible to anticipate a scenario of: higher fees; lower appetite for corporate debt; higher cost of derivatives hedging; reduced securitisation activity, an I&P industry more involved in infrastructure funding, and more real estate financing activity from the insurance sector. As regards sovereign debt, the present regulatory statu quo favours a higher demand of these securities by I&P, but the debate on whether to maintain its zero risk weight in Basel III and Solvency II may imply some changes in the future. What is clear in the near future is that regulators of banks, pensions and insurance sectors should analyse the interactions of new regulations; the associated trade-offs and risks and their consistency with a view to avoid creating wrong incentives for the long run.

Keywords: Basel III, Solvency II, Regulation, Insurance, Pensions, Banking.

JEL: G18, G28, G38.

1. Introduction

The global financial regulatory framework has been undergoing an important overhaul since the last decade. The rapid creation of different products and financial innovation, the consequences of continuous cyclical global adjustments (e.g. the dotcom crisis, Asian and Russian crises, among other events), and the recent global financial burst that started in 2007, have gradually accelerated the implementation of different regulatory initiatives. While there are many relevant domestic initiatives mainly aimed at providing a more sustainable financial sector in the long term (while avoiding future dangerous scenarios as those just seen) it is possible to identify some common trends.

Solvency II and Basel III frameworks are two of the most relevant global initiatives trying to reformulate the financial scenario. Basel III seeks to strengthen banks' capital and liquidity and to reduce their leverage. This is done through three main pillars, the first one based on minimum quantitative requirements, the second one based on qualitative requirements securing a good internal governance and an effective supervision, and a third one enforcing market discipline through enhanced transparency. On the other hand, Solvency II, targets the Insurance and Pension (I&P) Industry[1] by adopting the same three pillar approach. Meanwhile, the application of an adapted Solvency II for pensions continues to be immersing in a long debate among regulators and the industry. Under this scenario, where important global regulatory changes are being implemented, the I&P industry, which was less directly affected in the present crisis, is going to experience important effects from different sides.

One of the main objectives of this study is to focus on the different channels brought about by the current global financial regulation which are going to affect directly and indirectly the I&P industry. This sector has been gaining importance over time and now represents more than 50% of GDP (even over 100% in some mature economies). This big relative size makes of the I&P industry systemic in nature and so deserves special attention by regulators and supervisors, much as other systemically relevant financial segments.

Other aspect that deserves special attention is the interaction among different pieces of regulation, originally designed to target a specific activity of the financial sector, but in the end generating a set of direct and indirect incentives in the markets that redefines the I&P industry environment, - bringing about different consequences in a way that regulators probably had not thought about in the design phase. Beyond that, these new regulations are being adopted in the middle of profound structural changes in the global economy, generating in particular a protracted period of abnormally low interest rates. This situation coincides with more stringent requisites for portfolio management and more demanding financial regulation, which poses enormous challenges in the future.

The main focus of this report is to describe all the aspects enclosed in the current global regulatory trends, affecting the I&P markets from direct sources -such as Solvency II- as well as in direct sources (Basel III). The text is organized as follows: after this introduction, section 2 deals with the description of the main global financial regulatory trends, underlining how they interplay in the area of I&P; section 3, discusses the new configuration of the regulatory context for I&P sector and the likely overall impact on this market; finally, section 4 presents the main conclusions.

1: Treated as companies in Europe that can provide both types of products.

2. Some regulatory trends in the financial sector

The insurance and pension (I&P) industry is undergoing important regulatory changes around the world. The channels that affect their future performance are both direct and indirect. The direct path comes mainly from the current regulatory debate on Solvency II, which was originated in Europe, but is gradually extending to other geographies as an inspiring model. The indirect trends affecting I&P are related to the new regulatory changes affecting the banking system and the capital markets.

This section summarizes the main aspects of these financial regulatory trends in order to depict the new configuration that I&P companies will have to consider and the likely incentives introduced into the market which will determine the future costs and benefits as well as the decisions to be taken.

2.1 New regulation affecting the I&P sector: Solvency II

Work on Solvency II began in 2002 after identifying deficiencies in Solvency I –the first version of this regulatory setting- during times of economic crisis, such as those experienced at the end of the nineties with the over valuation of internet companies. Solvency II is directly inspired by the trends set for the banking sector by Basel II.

Although this standard was born in the core of the European Union, it is important to note the global influence it is having on insurance regulation, where many countries beyond Europe have incorporated it as the standard of market conduct. Three pillars are considered: risk management, improvement in the control systems available to the regulator and improved reporting quality.

First pillar, sets quantitative requirements for the calculations of technical provisions and capital requirements. It computes its available capital as the difference between the market value of assets and liabilities, taking into consideration all the risks incurred. Accordingly, the best estimate of the liabilities is obtained, to which a risk margin is added for non-replicable risks on the market (See Figure 1).

Insurance companies will be required to estimate the Solvency Capital Requirement (SCR) which can be interpreted as the estimated economic capital and, accordingly, takes into consideration the global risk assumed by the insurance company. It estimates the resources required to for the insurer to meet its obligations within one year with a 99.5% level of confidence. To estimate the SCR, companies will use a standard formula or an approved internal model which considers all the risks a company faces.

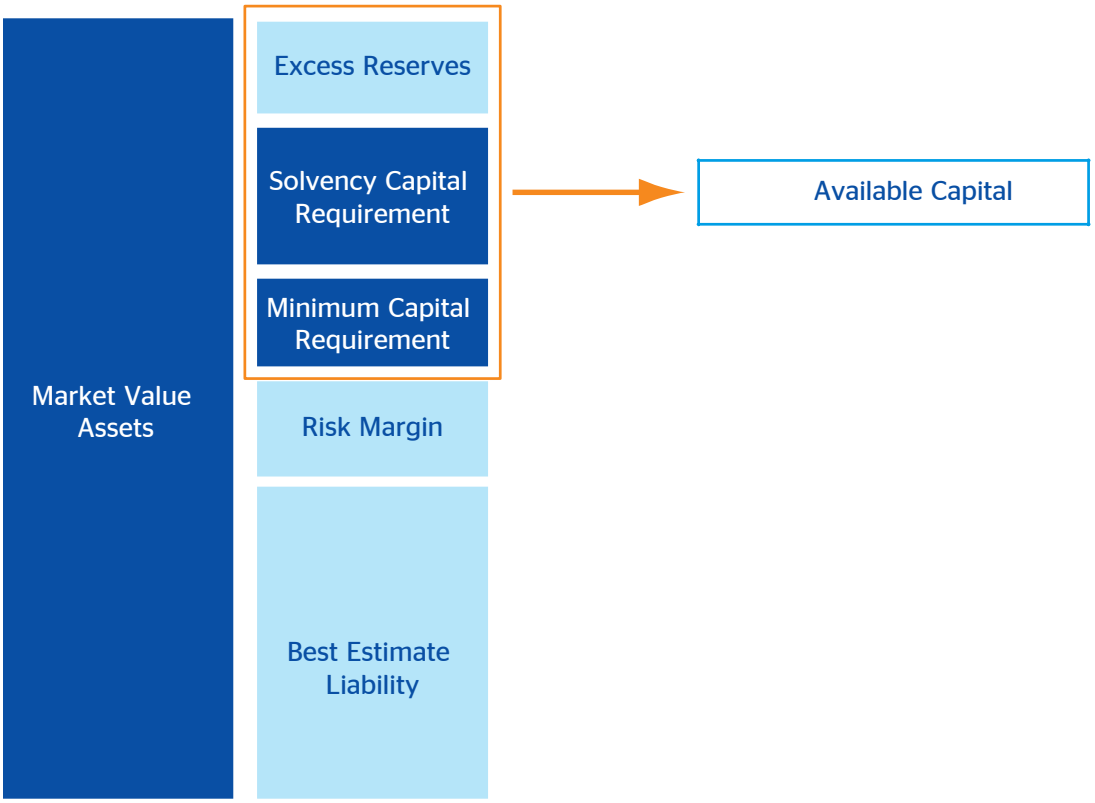
The Minimum Capital Requirement (MCR) is the minimum amount of capital required to operate, and it represents a lower level of security.

The excess capital available is obtained by comparing the SCR with the available capital, which is determined on the basis of the economic balance sheet. In this context, the authorities are developing assessments exercises that measure the expected impact of Solvency II on the insurance sector, known as Quantitative Impact Exercises (QIS).

In the case of technical provisions, these will be calculated as the sum of the Best Estimate Liability (BEL) and a risk margin, and they should be equal to the amount an insurer would have to pay to another insurer in order to transfer its current obligations.

Both the technical provisions and the MCR and SCR constitute the new solvency framework for insurers.

Chart 1
Diagram showing Pillar 1 of Solvency II and G-SIFI framework



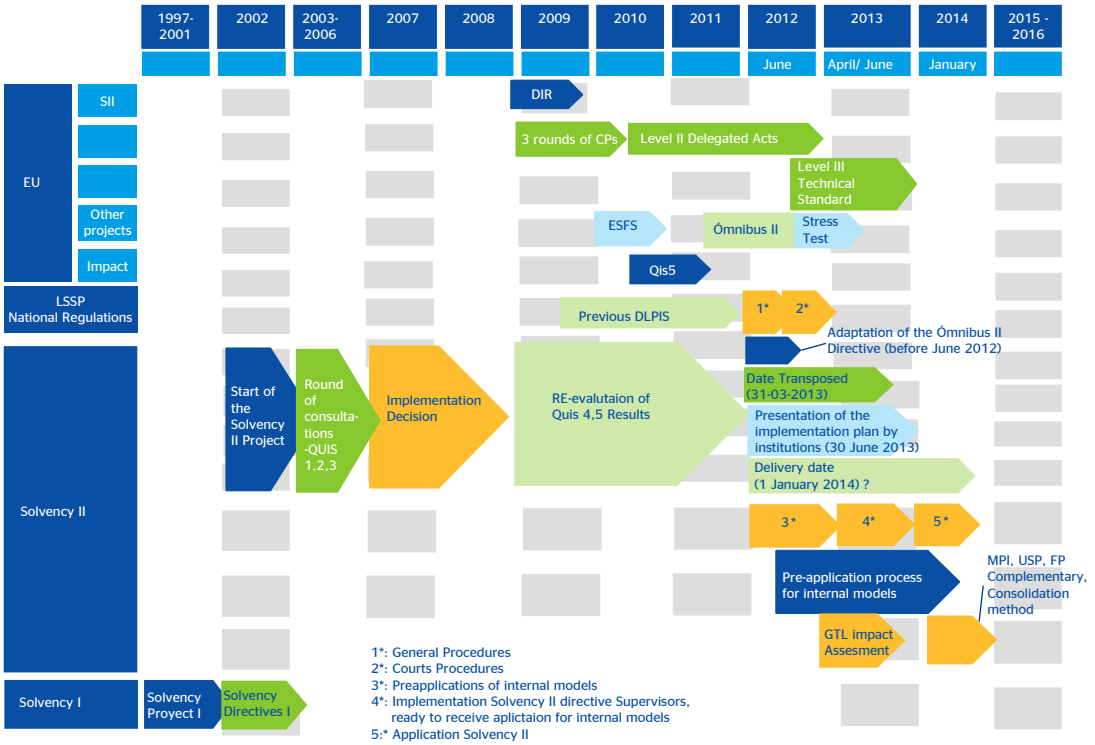
Source: BBVA Research

The ***second pillar*** of Solvency II sets qualitative requirements regarding risk management and supervision, and underscores the necessity to reinforce the supervisory strength of P&I industry through own governance, internal control and audit in order to ensure sound and prudent risk management practices.

Finally, the ***third pillar*** relates to market discipline and aims at requirements for supervisory reporting, disclosure of information and enhanced transparency. Solvency II also requires per-line business management (e.g. life, non-life and pensions) based on the particular risks of each of them. This means that contrary to the previous situation, insurance companies cannot offset the risk in excess taken by certain lines of business to compensate for others. In addition, the new regulation underlines that the assets must not be managed independently of liabilities, and both, assets and liabilities, must take into account a projected financial scenario with all the current and future risks.

All these reforms have required an herculean work making the implementation process sluggish at the moment. For instance, the possibility of companies establishing their own SCR quantification models implies a challenge for the role of the local regulator as project validator. At the same time, the enormous diversity of European insurance markets, along with the diverse effects imposed by Solvency II on their companies, (predominantly on capital requirements for some long-term life insurance products) also complicates harmonization of regulations. Lastly, the on-going economic crisis and, above all, the European banking and sovereign debt crisis, raises questions about the likely procyclical impact of Solvency II. Furthermore, many voices warn that the current configuration of Solvency II may reduce European companies' competitiveness compared to their American and Japanese counterparts, given the more demanding requirements in terms of risk coverage. In fact, there are now technical contacts between EIOPA and the North American Regulatory Authority to debate this relevant matters (see EIOPA, 2012a).

Chart 2
Timeline of I&P regulations in Europe



Source: BBVA Research and Rodríguez-Ponga (2012).

In January 2011, the European Commission published the proposal for the Omnibus II Directive, deferring the date for transposing Solvency II directive until 30 June 2013. The date of application is now 1 January 2014, although further delays cannot be excluded (see Figure 2)[2]. These delays in Solvency II implementation are closely associated to highly volatile financial markets that impose a challenging environment for insurance companies in terms of complying with the new requirements. For instance, the gap created as a result of the higher valuation of liabilities (risk-free interest rates) with respect to the valuation of assets (market interest rates) may be notably increasing solvency requirements on the part of the insurance companies. This situation is particularly clear in the case of companies with life insurance holdings due to the valuation of their technical provisions. According to Lubelli (2012), these fluctuations are not a result of the company's risk profile, but rather the lack of mechanisms to recognise the mitigating effects of asset and liability matching. In short, they would be looking for mechanisms to avoid the pro-cyclicality of the insurance sector with countercyclical measures. Solvency II should include regulatory measures to ensure that short-term market movements are appropriately treated with regards to insurance business of a long term nature. However, such measures should not produce permanent capital relief that could imply unrecoverable losses or under-provisioned risks.

For this purpose, EIOPA reports to the European Parliament the Green position on long-term guarantee measures.

2: Explanatory notes:
DIR: Directive 2009 (Solvency II)
CPs: Consultation Papers
ESFS: European System of Financial Supervisors
QIS 5: Quantitative Impact Assessment of Solvency II
DLPIS: Draft Law of Private Insurance Supervision
GTL: General Taxation Law
USP: Undertaking Specific Parameters

There is still no agreement on a definitive outline for the solutions, although a series of measures were tested in an exercise conducted by EIOPA in March 2013 (Long-Term Guarantees Assessment -LTGA-). The LTGA exercise is a set of regulatory measures to ensure appropriate control treatment of long-term guarantee products that are affected by volatile market conditions.

The LTG package focuses primarily on the quantitative/capital requirements (Pillar I), despite all these measures will have to be accompanied by appropriate elements of risk management, transparency and disclosure (Pillar II and III).

This assessment covers six LTG measures that are tested in various combinations through 13 scenarios. The conclusions of the study were published in June 2013. The main measures tested and findings are the following:

- Adaptation to the relevant risk-free term structure or Counter-Cyclical Premium (CCP): it is a crisis measure in order to complement the observations of the market when they are determined to be unreliable during a period of time or unsuitable for precautionary purposes owing to the spread-related crisis in financial markets. According to the conclusions of the report, **CCP does not seem appropriate to adequately reduce the impact of short term volatility. Maybe because the graduality of the implementation of the measure could not be suitable. In practice, it is unlikely to fulfill its general purpose of financial stability because some countries increases significantly the capital requirements of undertakings.**

- **Extrapolation:** these are properties of the models which are used to valuate liabilities with the aim of complementing the market observations if no reliable market information is available. According to the conclusions of the report, this approach for the Euro would benefit from an extension of the convergence period significantly beyond 10. For other currencies, the characteristics of the local bond and swap markets must be taken into account.

- **"Classical" Matching Adjustment:** it is a permanent measure that provides a risk-free rate adjusted for the (re)insurance annuities administered under a strict asset liability matching regime (when resulting in an immaterial exposure to the volatility of the short-term market). According to the conclusions of the report, this measure seems to be the most effective tool within the tested LTG package to mitigate short-term volatility from the Solvency II balance sheets of portfolios.

- **Extended Matching Adjustment:** The extension of the previous measure intended to cover the business of a long-term period, but with a lower degree of certainty and predictability of cash flows. **According to the conclusions of the study it is possible that this measure could create a competitive disadvantage for small and medium size undertakings as they might not be able to apply the adjustment due to its complexity. Therefore EIOPA advises to exclude the Extended Matching Adjustment from the LTG package.**

- **Transitional measures:** it is a measure that provides a smooth transition to Solvency II for specific long-term guarantees business and economic and prudential conditions underwritten under Solvency I, omitting disturbing events but assuring the good incentives. These are aimed at providing a smooth transition between different regulatory regimes which would ultimately lead to more stability in the insurance sector. EIOPA advises to implement transitional measures as part of the LTG package.

- **Extension of the Recovery Period:** it is a powerful measure that allows an adjustment of the monitoring reaction of the supervisors to a specific gap of the solvency capital requirements in scenarios of exceptional falls in financial markets. As well as CCP, this one is a crisis tool, but this can be applied for different types of financial market crises. EIOPA advises to implement the Extension of the Recovery Period.

- After the publication of the Technical Findings on the Long-Term Guarantees Assessment on 14 June 2013 (EIOPA, 2013), the Insurance Industry has welcomed the report but said that a preliminary review, "raises significant concerns that the measures proposed would

not work as intended". It is now actively lobbying to modify some of the report's recommendations.

- In conclusion, there is still uncertainty over the timetable and final shape of the Solvency II regime.

Although pension funds are excluded in Solvency II, there is a working group that pursues to include occupational and defined benefit pension funds under this regulatory umbrella. The European prudential framework for the Institutions for Occupational Retirement Provision (IORPs) directive, adopted in 2003, acknowledges the importance of workplace pensions in supplementing declining public pension benefits and to secure the retirement income of European citizens by three main ways:

- Getting sufficient assets coverage for pension commitments
- Promoting professionally qualified governing bodies, sound administrative procedures and adequate internal control mechanisms
- Compulsory transparency towards plan members communicating the target level of benefits, risk exposure, costs, etc.

The current IORP Directive shows great concern about countries where regulation favours defined benefit (DB) schemes due to SCR requirements mentioned above. In the context of the population ageing problem and the insufficiency of public pensions systems, there is consensus among analysts, academics and policy-makers on the desirability of moving towards defined contribution (DC) systems. Notwithstanding recent improvements in the measurement of investments risks proposed by the UK, the Directive looks to revive DB plans, although this specific issue continues under open discussion (see Williams, 2012).

Another important regulatory measure potentially affecting insurance firms is the new framework for Global Systemically Relevant Financial institutions (G-SIFI) that introduces enhanced requirements for these entities in terms of supervision, resolution and loss absorbing capacity. For banks (G-SIBs) the policy framework was finalised in late 2011 and the new capital requirements will be phased in by 2019. For non-bank G-SIFIs the policy framework is still under development, reportedly guided by similar principles than those applied to G-SIBs. In particular, for Global systemically important insurers (G-SIIs) the International Association of Insurance Supervisors (IAIS) is finalizing the identification methodology and the policy measures and a final methodology is expected for the second quarter of 2013.[3] Among the policy measures to be proposed, G-SIIs will be required to have a higher loss absorption capacity to reflect the greater risks that G-SIFIs pose to the global financial system in the form of an extra capital buffer. The application of this G-SII buffer is not as straight as that for the G-SIB buffer because, contrary to Basel rules for banks, there is no global solvency standard for insurers (although in EU the reference would be Solvency II of course).

On January 1, 2014, EIOPA expects to make a review between EU member countries of the degree of compliance of SII and their plans of implementation in the short term.

2.2 Regulatory trends in Banking (Basel III and others)

The new regulation that targets banks raises a number of direct and indirect costs for insurance and pension companies, depending on whether the banking sector is (i) a financial services provider (hedging, securitisation), (ii) a direct competitor (e.g. in project financing)) or (iii) an investment objective (equity or debt buying bank).

Among the direct costs, there is the need to abide by new rules for over the counter (OTC) derivatives and financial market infrastructures even when insurers and pension funds decide to operate directly in the markets. These new regulations lean towards more standardisation

3: IAIS (2012). The identification methodology proposed is quite similar to the one applied to G-SIBs, but with important differences aimed at reflecting the particularities of the insurance business model. In particular, the systemic relative score of an insurer would be calculated upon its size, global activity, substitutability and interconnectedness (same as for banks) and also the involvement in non-traditional insurance and non-insurance activities (considered to be the main drivers of potential systemic risk within the insurance sector).

and higher requirements in terms of margins and collateral posting. In some cases, direct exemptions can be expected, such as for example those foreseen under the European Market Infrastructure Regulation (EMIR) and the Capital Requirements Directive IV (CRDIV) for Pension Funds (though not for insurers). Leaving aside these exceptions, in many cases this could significantly raise the costs associated to the use of derivatives, which are used intensively by insurers and pension funds to hedge the risks associated to long-term investments.

Although not exactly in the field of the global financial regulation, there has been an increasing trend towards the taxation of the financial sector, either in the form of bank levies (that tax banks' balances or activities) and/or financial transaction taxes (FTT).This trend could also harm insurers and pensions funds unless they are specifically exempted, which is not generally the case for insurance companies and not even necessarily for pension funds. For example, in the latest proposal by the EU Commission of an FTT for 11 EU countries the P&I industry is bound to pay for the FTT).

The biggest impact will come from Basel III, the new revision of the Basel Accord that was expected to enter in to force in 1 January 2013 with a gradual phase-in until 2019. It is estimated that due to Basel III banks will have to raise US$2 trillions of new capital (assuming no credit rationing at all). This is because under Basel III the regulatory capital ratios will increase considerably between 2013 and 2019, especially the core equity tier 1 ratio (CET1). The new conservation buffer and SIFI buffers will be added and eventually a countercyclical buffer too (in cyclical positions where there are concerns that a credit bubble is underway). Meeting these higher targets poses a challenge due to two reasons (BIS 2011b).

1. **Less eligible capital.** The definition of high-quality capital is considerably narrowed so that less asset classes will be eligible for capital requirements:
   - There are significant deductions from Core Equity Tier 1 (CET1), such as Goodwill, Deferred Tax Assets (DTAs) and also deficits of any defined benefit (DB) pension funds in the bank balance. In this last case, the deduction applies even if the pension is legally separate and the employer has no legal obligation. This deduction can only be offset for assets to which the bank has unfettered access (i.e., they would be available to protect depositors or creditors in a restructuring or resolution process), provided that the bank includes such assets in its risk-weighted assets as if the banking organisation held them directly and always after supervisory approval.
   - Tier 1 and Tier 2 securities will only be recognised if they are loss-absorbing. This means that many existing Tier 2 securities will no longer be accepted to be computed for capital regulatory purposes (within a phase-in period of ten years, beginning in 2013) and will hence have to be replaced by new loss-absorbing capital. This is to be complemented with another key element of the new regulatory setup: the **resolution framework,** aimed at ensuring that all banks can be resolved in an orderly way without having recourse to public money. In order to be able to do so they include, among other things, a bail-in mechanism by which all non-secured debt must be capable, under a resolution scenario, of being either converted into equity or even written down if the bank is close to liquidation.
2. **Higher Risk Weighted Assets (RWAs).** Basel II.5 already introduced a significant revision in the treatment of market risk (trading book and securitisations), increasing their associated risk weights. In addition Basel III affords tougher treatment of counterparty credit risk.

The biggest impact of the financial regulatory reform over the I&P business could come indirectly from changes in the banks' business and environment as a result of the big regulatory overhaul affecting the banking sector (see Table 1). Although banks will be able to offset part of these effects through better management of their balance sheet, the combination of all the new measures will probably reduce the return on equity, with a possible fundamental impact on the way business is conducted.

Certain types of capital will no longer be allowed to be computed for regulatory purposes, so banks will mostly be discouraged or completely uninterested in issuing them, giving rise to a potential gap in their supply of fixed-income assets. Also, most unsecured bank debt will be

required to absorb losses under a resolution process before any injection of public money. As a result, this kind of debt will become less appealing to institutional investors, reducing, once again, the spectrum of suitable bank assets. On the other hand, banks might be compelled to slow down their activity in certain businesses (project finance, market making in repo, money and bond markets, hedging with tailored derivatives and securitisation), which will be particularly penalised by the new regulation.

Table 1 depicts the main regulatory initiatives targeting the banking sector and also the financial markets on a global scale.

Table 1
Overview of main new regulatory measures in the banking sector and financial markets

	Description	Possible effects
Basel III-capital	• Minimum 7% CET1 ratio with stricter definitions • Plus conservation, countercyclical , SIFI buffers • Enhance loss-absorbing capacity • RWA: Higher charges for risky assets/activities	Banks to deleverage. issue more equity; reduce activity in securitization, repo, derivatives trading, prop trading…)
Basel III-liquidity	• Liquid assets must cover net cash outflows under a 30 days stress episode • Weighted long term assets must be 100% funded with long term stable liabilties	Lquidity management becomes cricial. More appetite for domestic and high grade sovereigns & covered bonds Need to match long term A&L
Basel III- leverage	• - Tier 1 capital to total assets cannot exceed 3%	Deleveraging, limited capital saving through IRB models
Bail in	• Mandatory bail in (capital, hybrids and even senior debt to absorb losses), RRPs , higher collateal	Reduced appettite for bank debt as it becomes more risky/less atractive
OTC derivatives	• More standardization, higher margin and collateral requirements, Obligation to go through CCPs. Disclosure requirements	More plain vanilla, less tailor made Increases cost of trading wth derivatives
Taxation	• Tax transfers or holdings of deposits, equity, bonds, derivatives	Higher intermediation costs

Source: BBVA Research

Together with capital requirements, Basel III also introduces a minimum leverage ratio of 3% that could make some activities less appealing for banks. The types of products more negatively affected by these reforms include market making in repo, money and bond markets, project finance, tailored derivative hedging and securitisations, which play an important role in insurers' long term asset holdings. Insurance companies and pension funds have traditionally looked for a higher return than that available from project financing before the crisis.

The third main element (beyond capital and leverage of Basel III)- the new liquidity standards- sets a minimum threshold on the amount of liquid assets that a bank must hold both in the short and in the long term. All in all, liquidity management is likely to grow in importance for banks. In fact liquidity could emerge as a new asset class for which banks would be able to pay a premium (estimated at present at 40-240 bps depending on the asset class, according to an RBS analysis). Since pension funds and insurance companies hold large untapped resources of liquid assets, it seems reasonable to expect that they could consider lending them to banks in exchange for an extra yield. Moreover, the provision of credit lines by banks to insurance and pension firms may be reduced or become more costly in order to compensate for regulatory costs. Finally, if covered bonds are finally accepted for liquidity coverage ratio (LCR) purposes (as it seems they will be, according to recent Basel Committee publications) (BIS 2013) they could get a significant boost with I&P becoming big investors.

As a consequence of all this regulatory pressure, banks decisions will be certainly affected. For example, the increased costs of holding project finance debt, especially those that do have the highest ratings (both due to the increased cost of capital and liquidity requirements) will translate into lower bank margins and hence a certain retrenchment from such activity. In this new situation, pension funds may find themselves able to compete with banks on pricing and take advantage of the fact that their funding is better suited to the long-term nature of project finance debt than that of banks. This is clearly illustrated in Table 2, which shows a significant

(reportedly intended) retrenchment from all kinds of banking activities, especially in corporate banking and for asset management activities.

Table 2
EU global banks considering a reduction in banking activities and/or assets (out of a sample of 23)

	Number of EU banks	As a %
BANKING ACTIVITIES		
Investment	13	57%
Corporate	16	70%
Retail	15	65%
ASSETS		
Banks subsidiaries/branches	8	35%
Insurance	5	22%
Asset management	12	52%
Securities companies	6	26%
Shadow banks	11	4%

Source: IMF GFSR, April 2012

3 Overall impact of new regulations over the insurance and pensions sector: direct and indirect effects

The current debate on the global financial regulatory framework discussed above will have significant consequences on the I&P industry. One important element is the interaction of more stringent requirements in terms of solvency in an scenario of long-term low interest rate. This situation imposes different challenges to an industry whose importance is not only based on the key economic function of assuring its financial commitments, but also in its relevant role as a long term lender to different economic agents.

In this section, we will focus first on the overall impact on I&P from Solvency II in the context of the ongoing debate to adapt a similar global regulation for pensions. Secondly, the text will discuss the different implications that banking regulation would have on the I&P industry, which involve both challenges and opportunities.

3.1 Overall impact over the I&P industry

The insurance and pensions sector is extremely important for economic growth. Its risk assurance fosters consumption and investment, by dispelling uncertainly of economic agents which can therefore maximize the utility if their intertemporal decisions. Furthermore, the financial dimension attainable makes it a strategic and vital sector for global financial stability. For instance, the volume of pension funds in countries such as Holland and Switzerland exceeds 100% of the GDP, whereas in Australia, Canada, the UK and USA it represents 50%. In terms of life insurance, assets managed in Japan, Sweden, Switzerland and the UK are particularly significant. The Insurance and Pensions sector is, accordingly, one of a systemic nature in international financial markets (see Table 3).

Table 3
Overview of main new regulatory measures in the banking sector and financial markets

	Pension Funds					Insurance companies (life)			
	Total	% portfolio				Total	% portfolio		
Country	% ofGDP	Bonds and Bills	Cash and Deposits	Equity	System	% of GDP	Bonds	Loans	Equity
Australia	82.5	12.8	16	54.4	DB/DC	2.3	53.1	3.7	21.9
Austria	5	54.9	9.8	26.8		0.1	17.6	0.3	na
Belgium	4.1	40.8	6.2	34.5		4	81.4	6.9	7.2
Canada	60.3	35.2	3.9	33.9	DB/DC	22.7	38.4	2.6	22.4
France	0.77	na	na	na	DC	16.8	76.3	0.6	20
Germany	5.2	40.8	3.3	6.1	DB	29.5	35	33.3	3.5
Italia	4.1	49	6.4	11.1	DB/DC	6	91.8	na	3.3
Japan	20.6	47.7	6.4	13.7		52.76	54.5	16.34	5.36
Korea	3.6	33.8	40.2	2.7	DB/DC	23.9	40.5	23.7	6.3
Mexico	12.2	80.6	1	14.9	DB/DC	1	84.9	1.5	0.4
Netherlands	129.4	46.5	3.6	32.2		34.8	57.9	11.5	16.8
Spain	8.1	59.2	18.5	12.1	DB/DC	1.62	na	na	na
Sweden	8.2	60.9	2.97	31.4		52.9	55.5	0.6	35.5
Switzerland	100.6	36.5	na	25.7	DB	46.7	55.7	12.6	1.6
UK	66.6	4.2	28.6	39.6		94.7	33.3	1.79	43.8
USA	68	31.4	2.2	45.4	DB/DC	3	79.9	12.9	3.4
Average	**36.20**	**42.29**	**10.65**	**25.63**		**24.55**	**57.05**	**9.17**	**13.68**

Source: OECD (2011, 2012)

However, the weight of the insurance and private pensions sector over the economy varies enormously among countries. For example, while Holland's assets under management as pension funds account for 129% of its GDP, in France this figure barely reaches 0.77%. In general, countries that have previously developed a defined contribution pillar, following the reform of traditional pay-as- you-go systems, show higher values of managed funds.

Once again, the risk assumed in the different holdings across countries varies significantly for each case. In terms of pensions funds, it is clear that Anglo-Saxon and Benelux countries have a particular appetite for risk, since equity investments in their portfolios has a proportion that exceeds 30% in all the cases and even 54% in the case of Australia. This pattern is also seen to a lesser extent for life insurance, with the exception of the United States (See table 3). Although 43% of assets are invested in equity, countries such as Switzerland, Italy and Germany barely reach 4%.

Thus, it is basically clear that the introduction of measures that tend to limit the risk related to I&P holdings through imposing greater provision, would affect each country differently given the varying risk profile. At the same time, meeting the commitments to returns offered on DB pension funds and other savings products will be difficult given the low interest rate scenario that is likely to persist for several years. These factors, as well as others that we will address below, make it difficult to reach agreements on the regulatory harmonisation of Solvency II.

3.1.1 Implications for the insurance sector

The implications for the I&P sector of the application of Solvency II are difficult to quantify due to the fact that they could face diverse incentives, sometimes with contrary effects among them. Additionally, there are many different companies in terms of typology, management and conditions of solvency that makes difficult to arrive to a general financial diagnose.

Notwithstanding this, based on its current design, the application of Solvency II could bring higher capital requirements due to more detailed and risk-sensitive quantification for some insurance companies. In addition, the SCR is expected to rise (for some insurers) due to the

new liabilities forecast within a low-interest rate scenario, as well as the release of unrealised capital gains associated to assets held under own funds. If insufficient capital is generated, insurance companies would have to approach the market in order to obtain new capital (BIS, 2011a).

Nevertheless, the latest quantitative impact assessment of Solvency II (QIS 5), conducted in the end of 2010 on the majority of the companies in the sector, revealed that there is sufficient capital (own funds) to cover new solvency requirements. The industry, in average, arrived to a comfortable SCR of 165% at participating institutions. This was the case even though the total surplus of capital was approximately 25% higher than the older regulation, casting doubts on the relevance of applying internal estimation models in each company (ORSA).

In fact, this impact assessment shows some variations in the assets under management, meaning either the consequence of the application of the new Solvency II requirements or the low-interest rate scenario, or even a combination of both. Beyond that, it is also necessary to consider that in many cases some company's strategies are mainly driven by their particular business model. All in all, the general trend in portfolio management would be to invest in lower risk assets with fewer capital requirements, or in their absence, the introduction of suitable hedging instruments, such as in particular:

- Transfer more risk to reinsurance companies or in the form of securitisation.
- Greater use of derivatives for hedging purposes, interest rate *swaps*, particularly on swaps and futures, inflation swaps and equity options.
- Insurance companies will attempt to minimise the duration gap between assets and liabilities, since the risk associated with this gap must be covered by capital.
- Nevertheless, businesses that have acquired commitments to a return on the investment of various products may need to find higher-yield assets (thus with a greater risk and greater capital consumption) in order to cover their commitments.

In terms of organisation within the insurance company sector, a very likely effect of the new regulation could be a progressive specialisation of insurance companies based on product type; specifically a preference to supply those that were low risk and thus did not consume capital. In this regard, life insurance companies could also distance themselves from products offering long-term guarantees and instead offer those with returns that better reflect the changing conditions of the market (unrelated products, variable annuities). Simultaneously, there may be a hike in prices applied in order to increase available capital and transfer risk to the consumer.

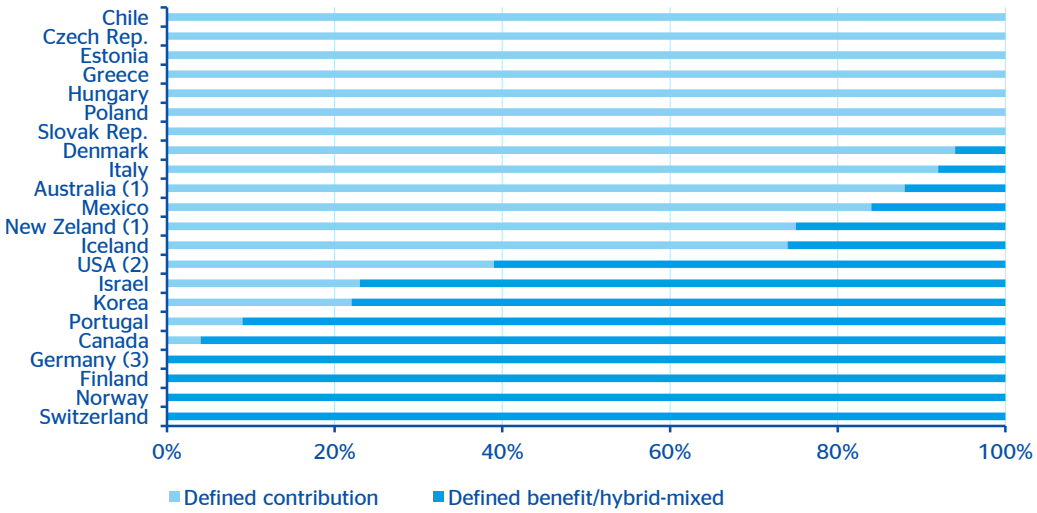
3.1.2 The implications on pension funds

With regard of the pension industry, the possible medium or long-term effects remain vague owing to the lack of consensus in application of a global regulatory framework. Generally, the structure chosen by any particular country, whether a Defined Contribution (DC) or Defined Benefit (DB) plan, or in the other side, whether pension products are offered by specialized pension firms or insurance companies, are the consequence of specific financial conditions and the institutional stance that policy makers, workers and companies have with respect of how to save for pensions and pay them in the old age stage. These institutional stances seem to be important, especially when all the stakeholders have been organized around a well-known market structure, with very familiar financial products, and a high financial depth of the industry.

Beyond these considerations, there are contrasting financial scenarios when carefully analysing the characteristics of DC and DB plans. Conditions the ways of tackling the problem while the first are fully-funded plans due to their structure, the second may not have committed rules on financial equilibrium, arising in significant funding problems. Both perspectives are in most of the cases the core of the current debate about how to configure future regulatory recommendations. Some effects on the sector can be foreseen.

Current trends point towards a gradual disappearance of DB pension's funds, as companies cease offering DB plans in favour of the DCs, considering that the latter are risk-free products for the company and do not generate capital consumption (Figure 4). Countries such as Holland and the UK, for example, are already reducing their exposure to DB products. Figure 3 depicts the varying bias of private pension plans towards one conceptual framework or another, thus highlighting that there are still a significant number of countries where DB plans represent a very significant percentage.

Chart 3
Relative shares of DB and DC pension fund assets in selected OECD countries, 2011 As a percentage of total assets

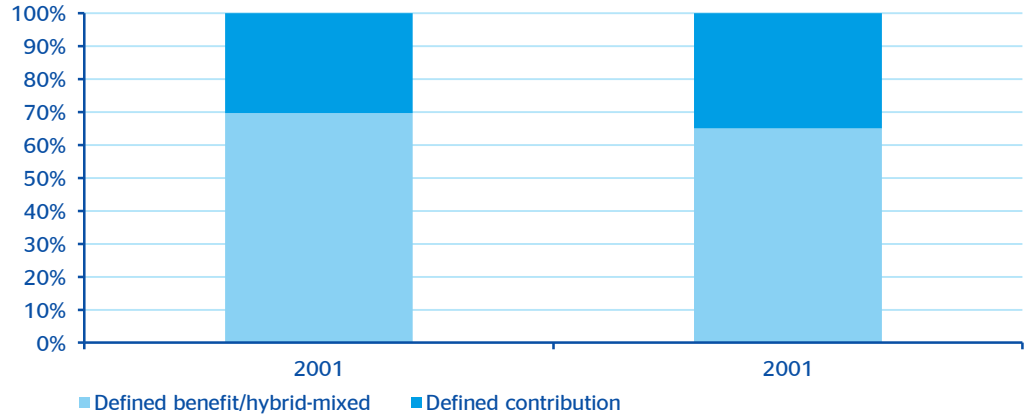


Source: OECD (2011)

Having said that, the lack of progress with Solvency II or any specific adaptation to pension markets, is mainly derived from the way the "matching portfolios" strategy could interact with assets and liabilities. At the moment, each country is trying to ensure that its pensions sector is not affected in excess by new regulatory proposals. Different stances are observed:

- Countries such as the UK and Spain have long-term insurance products. Nonetheless, while Spain performs *matching* with the asset portfolio until the liability matures, the UK holds asset portfolios at 3/5 years. France is most at pains to adopt the specific case of the UK and Spain (it considers that it would give an incentive for investment in low-quality assets). UK and Spanish model may eventually be accepted by Germany and Italy, providing that the package of measures also approve some measures that will solve their own problems.
- The current line of thought is to relax the requirements to apply matching portfolios, considering that it serves as a solution to the sector's problems in other countries. Nevertheless, it seems that if they are too much relaxed, they will not be accepted by the regulators.
- Other countries (such as Chile, Mexico, USA, etc.) are awaiting the final results of this debate before making any move.
- Longevity risk hedging and a low-interest rate scenario are pushing up the price of pensioners' life annuity, which is a problem for the system if it wants to provide sufficient and adequate pensions.
- In a low-interest rate scenario, DC pension funds accumulate fewer assets, which may reduce the attractiveness of these kinds of savings with respect to others (e.g. real estate assets) as a means of ensuring retirement funds.

Chart 4
Defined benefit (traditional and hybrid-mixed) vs. Defined contribution pension fund assets in total selected OECD countries, 2001-2011. As a percentage of total assets



Source: OECD (2011)

3.1.3. Interaction between a low-interest rate scenario and insurance and pension regulations

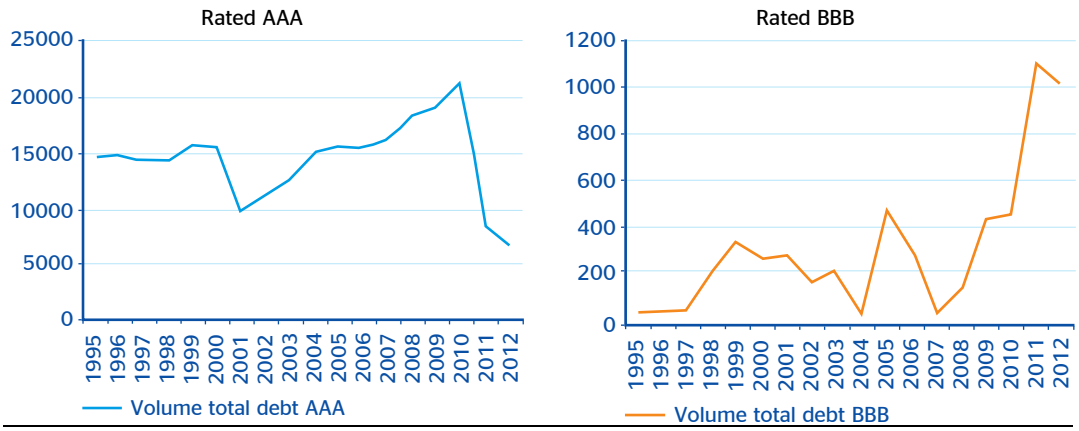
A prolonged low-interest rate scenario may entail a rising impairment on the balance sheets of both insurance companies and pension funds. On the one hand, a prolonged decrease in interest rates rises the present value of liabilities more than it increases the value of assets, because the former usually have a longer duration, raising the cost of insuring the risk with the possible need for greater capitalisation. On the other hand, DB pension funds may face problems in fulfilling their commitments for returns and could require strong capital injections, in the absence of which systemic risk in the global financial system may rise.

In this scenario, Solvency II may have a significant impact in a low-interest rates environment, given that insurance companies and pension funds are among the major global sources of saving. Significant changes in the international financial markets may result from these trends, such as:

- A mismatch between supply and demand. The initial consequence of focusing more on liability driven investment (LDI) t in insurance companies and pension funds is an increase in the demand for high-quality fixed-income securities. This in turn increases the risk of a huge mismatch between supply and demand in the long-term bond market, which ceteris paribus would cause returns to fall. As we can see in Figure 5, during the last few years of the crisis there has been a dramatic fall in the outstanding amounts of high-rated public debt (S&P AAA) in the world[4], falling USD 20,000 billion in 2010 to a little over USD 6,000 billion at present. At the same time, there has been an increase in lower-rated debt, for example BBB.

4: The amount includes Australia, Austria, Denmark, France, Germany, Ireland, Iceland, Japan, Norway, Spain, Sweden, USA, Canada, Finland, Netherlands, Luxembourg, Switzerland, UK

Chart 5
The evolution of outstanding balances for public debt with respect to rating (in billions of US$)



Source: IMF and BBVA Research calculations based on S&P

- Effects on the yield curve. The risk-free yield curve level out due to a greater demand for high quality long-term bonds, particularly if insurance companies and pension funds use longer term government bonds to manage the duration *gap* in their balances whilst cutting the duration of their corporate bond holdings.
- Systemic dominant position. The growing demand of government bonds from insurance companies may give them a dominant position in this market, particularly in the long-term segment. If the investor base is less diverse, it may increase the risk of funding, particularly during times of stress. At the same time, there is some concern regarding a possible lack of investors to fund the banking institutions in the medium term, due to the adoption of a bail-in principle in the context of the banking resolution debates.
- The growing importance of risk management implies increased dependency on derivatives, such as interest rate *swaps* and *swap options*. One positive effect of this development is that the use of interest rate derivatives may help easing pressures away from long-term public debt markets, since they allow insurance and pension fund companies to extend the duration without having to acquire the underlying bonds.

3.2 Indirect impact on I& P from the banking sector reform: opportunities and challenges

In general, the aim of Solvency II and Basel III is to enhance solvency in the insurance and banking sectors respectively. However, due to the different nature of the risks relating to both businesses, the requirements established by both sets of rules are not completely consistent. For example, while Solvency II gives preferential treatment to bonds with good credit ratings and short maturities, Basel III requires banks to establish more stable, long-term sources of funding.

This will create different incentives for asset holding depending on the differing capital requirements implied by each regulation. The joint effect of this new combined regulatory setup and the search for yield (to compensate for protracted low interest rates) will alter the investment incentives of insurance firms and pension funds. As a general rule, they will seek to maximise their yield income while minimising the capital requirement associated to each investment.

In this search, it seems reasonable to expect that they could turn their attention, once again, to the banking industry, with which they already have strong financial ties. On the one hand, I&P play a key role in banks' funding even when they don't have close ties through cross holdings or shared corporate parents. On the other hand, banks are big providers of financial services that are crucial for the risk management of insurance companies and pension funds, e.g. liquidity, hedging (through IRS, Swaps, etc.) or portfolio securitisation (ABS, CDOs, etc.),

among others. Lastly, although it is not very common, they may compete to provide certain financial services (pensions, insurance and deposit-like products). Ceteris paribus, the appetite of insurers and pension funds for (more) bank risk will be mostly determined by the banks' ability to offer them high-quality assets, measured both in terms of yield and capital consumption under Solvency II.

I&P and the banking sector are also closely connected, through their traditional commercial transactions and their existing shareholding connection. During the recent financial crisis, the insurance sector has remained relatively unaffected, barring some cases such as AIG, where the insurance company incurred in sizeable risks in OTC credit derivatives issued by banks (see Pieschacón, 2012). Nevertheless, EIOPA(2012b) states that there are some signs that the financial crisis is spreading from the banking sector to the insurance sector. Both the macroeconomic scenario, characterised by weak growth, sovereign debt crisis and low interest rates, together with the incentives as a result of Solvency II and Basel III could change the traditional relationships between I&P and banking. This change could be analysed from three different approaches, depending on whether banks are seen as (i) investment target, (ii) providers of services or (iii) competitors of the I&P industry.

3.2.1 Banks as investment target for P&S

Due to the financial crisis and the increasing regulatory pressure, banks will be offering returns that are below those offered in the past. Moreover, under the new regulatory regime (Basel III and the different resolution frameworks in the EU and elsewhere) unsecured bank debt becomes "bailinable", in the sense that the holders of such bonds (including senior ones) may be subject to loss absorption in case of trouble. This increases the risk associated to that debt, making it less attractive for a given rate of return.

From the point of view of demand, Solvency II penalises long maturities and high-risk bank assets in terms of cost of capital. This could reduce the appetite for long-term bank debt and could imply that the insurance industry reduces its role as a holder of long-term bank debt, as compared to the previous situation. Conversely, Basel III liquidity requirements for banks give them more incentive to stable long-term funding (Zähres, 2011). This implies that banks would be willing to move their debt issuance maturities up to the 5-10 year range, while I&P investors (as a result of Solvency II new incentives) would develop a higher appetite for corporate debt (including bank debt) been issued in that maturity range.

There could also be a happy marriage with covered bonds, which would not be bailinable. But banks would not only be interested in issuing covered bonds (due to their lower cost and their eligibility for LCR purposes) but could also be interested in buying covered bonds issued by other banks. Therefore, a tough competition could develop for these products between banks and I&P investors. The same could happen for domestic and/or high grade sovereign bonds, for which Solvency II sets no capital charge under the standard model. This stiff competition would exacerbate the problem of sovereign debt yields going down (see figure 5).

3.2.2 Banks as providers of services for I&P

Traditionally, the banking sector has provided the I&P sector with the (tailored) derivatives needed to match their portfolios. Basel III penalises non-standardised derivatives through higher capital requirements and introduces mandatory settlement through a CCP, with higher collateral posting and margin requirements. This would lean towards a standardisation of derivatives as banks would reduce their issuance of OTC derivatives.

At the same time, the I&P industry is moving towards shorter-term debt holding, exacerbated by a shortage of AAA sovereign bonds. This will make them more reliant on derivatives (for example IRS) to hedge duration, but banks will be less prone to offer those tailor made services. This mismatch between a reduced supply and increased demand will increase the cost of using derivatives for I&P firms, implying higher costs of capital.

As for the securitization activity, another important service traditionally provided to I&P firms by banks, it becomes heavily penalized under Basel III and Solvency II. Therefore it can be expected that the cost of portfolio securitisation (ABS, CDOs) services will go up and the scope for tailor made solutions will be more limited. Since both the demand and the supply of these services will be reduced, the final effect over prices remains undetermined thus far.

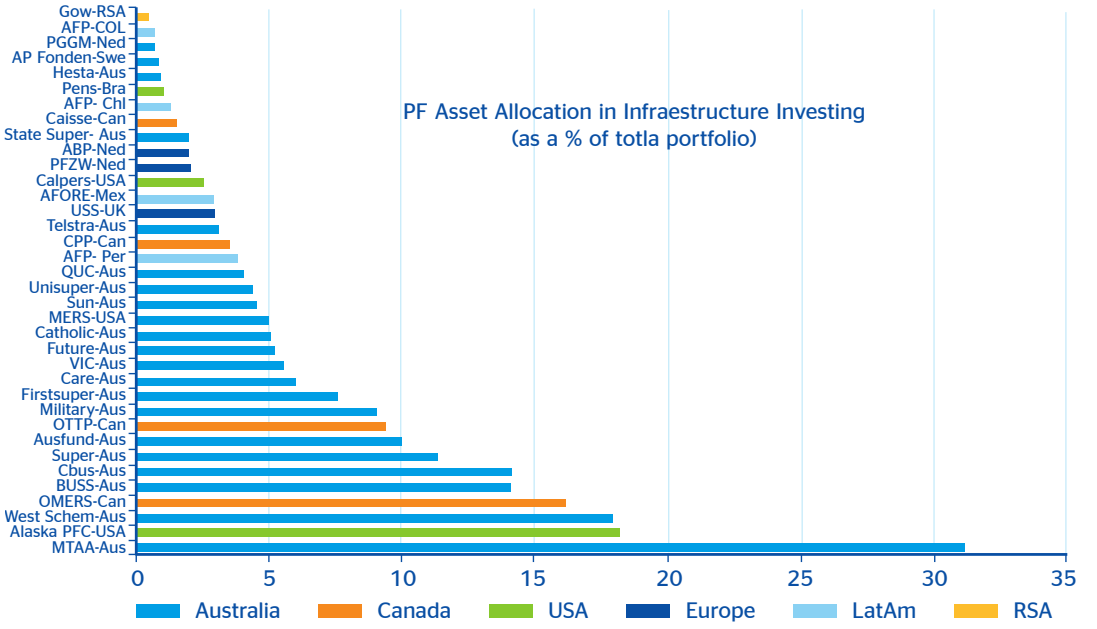
Finally, the I&P industry traditionally places large amounts of money with banks in the form of corporate deposits. However, these corporate deposits become heavily penalized in the Basel III new liquidity framework, in particular the NSFR ratio so banks are expected to reduce the return being offered on them, which will in turn reduce the appetite to take these deposits. This could press down further the return on the investment of the I&P business.

3.2.3 Banks as source of new business opportunities for I&P

The banking sector crisis along with the requirements of Solvency II and Basel III may alter the relationship between I&P and the banks, creating new business opportunities that had not previously been explored in great detail.

- **Buy divested banking assets,** such as the insurance business or trading desks. The requirement of many banks to raise capital, in order to meet the higher capital requirements , may cause some banks to sell the insurance and pensions branch of their business, as they may not be considered to be strategic assets. In this scenario, it is highly likely that these assets would be purchased by companies specialising in I&P, thanks to the significant returns of scale they would obtain. These changes could create other kinds of commercial alliances that exploit insurance banking and reduce competition in the sector.
- **Financing of real estate operations:** as banks retreat from this business (due to its associated higher capital consumption) this could open the door for some insurance firms with higher risk appetite to increasingly stepping in this business as a means of diversifying their investment portfolio
- **Competition/partnership in project finance for** infrastructure funding. The search for alternative investment assets by I&P may generate more interest in the funding of infrastructures. There are some success stories in Australia, Chile, Canada, etc., where infrastructure assets account for a significant percentage and where the risk/return ratio is very interesting. This may make more companies within the sector think about infrastructure assets as a feasible investment alternative. Accordingly, banking and insurance may make a very complementary combination in the Green Field Project Finance and PPP (Figure 6).

Chart 4
Infrastructure assets in total I&P Portfolios (in percentage)



Source: Tuesta (2012)

While the concession process continues to require short-term funding, the banking sector can enter this field. During the operational phase, the I&P sector may take over the banking sector, since it fits in with its very long-term business profile, simultaneously freeing up capital from the banking sector itself (see Escrivá *et al*, 2009 and Rozas *et al*, 2012)

4 Final remarks

This document has synthesized the main global financial regulatory trends affecting directly and indirectly the I&P industry, dealing with the relevant characteristics of each piece of global regulation and their effects on firms decisions and the future of the industry in consequence. We underscore the idea that different financial rules have been designed following a piecemeal approach (i.e., each one targeting a specific area of the financial system), although their effects trickle down to other areas, going beyond the expected regulatory borderline. The future interplay between banking and I&P regulation will generate new strategic behaviours that will need to be studied more deeply in the future.

Table 4
Title Table

Overall impact over the I&P industry	Indirect impact on I&P from the banking sector reform: opportunities and challenges
• Delays in Solvency II implementation associated to highly volatile financial markets. Looking for mechanisms to avoid the pro-cyclicality of the insurance sector with countercyclical measures. **Depending of risk situation of each company-country:** • Transfer more risk to reinsurance companies or in the form of securitisation. • Transfer more risk to clients and increase of fees. • Greater use of derivatives for hedging purposes, interest rate *swaps*, particularly on swaps and futures, inflation swaps and equity options. • Insurance companies will attempt to minimise the duration gap between assets and liabilities, since the risk associated with this gap must be covered by capital. • In the present statu quo long-term bonds issued by the governments of the EEA and other countries with a high-credit rating are expected to be particularly favoured. The debate on zero risk weight of sovereign debt, however, may change this trend. • Businesses with commitments to a return on the investment of various products may need to find higher-yield assets (thus with a greater risk and greater capital consumption). • Gradual disappearance of DB pension's funds, as companies cease offering DB plans in favour of the DCs, considering that the latter are risk-free products for the company and do not generate capital consumption. • Longevity risk hedging and a low-interest rate scenario are pushing up the price of pensioners' life annuity, which is a problem for the system if it wants to provide sufficient and adequate pensions. • In a low-interest rate scenario, DC pension funds accumulate fewer assets, which may reduce the attractiveness of these kinds of savings with respect to others (e.g. real estate assets) as a means of ensuring retirement funds.	**Banks as investment target for P&S** • Banks would move their debt issuance maturities up to the 5-10 year range, while I&P investors would develop a higher appetite for corporate debt (including bank debt) been issued in that maturity range. • It could develop a competition between banks and I&P for covered and high grade sovereign bonds **Banks as providers of services for I&P** • As Basel III penalises non-standardised derivatives, this would lean towards its standardisation and banks would reduce their issuance of OTC derivatives. • I&P industry is moving towards shorter-term debt holding making them more reliant on derivatives to hedge duration, but banks will be less prone to offer them. This mismatch will increase the cost of using derivatives for I&P firms, implying higher costs of capital. • Banks are expected to reduce the return being offered on corporate deposits. I&P would reduce the appetite to take these deposits. **Banks as source of new business opportunities for I&P** • Buy divested banking assets, such as the insurance business or trading desks. • As banks retreat from of real estate operations, it could open the door for I&P as a way to diversifying their investment portfolio. • Competition/partnership in project finance for infrastructure funding.

Source: BBVA Research

The report found that there is a great disparity among countries in the initial situation of the I&P sectors, both in terms of solvency levels and the diversification/riskiness of investment portfolios, which will cause Solvency II to have different effects.. But there is a common challenge: how to reconcile more risk-sensitive regulation with the search for yield in a world with consistently low interest rates. This challenge is compounded by (i) very demanding banking regulation and (ii) the scarcity of high quality paper, partly as a result of the sovereign debt crisis. As a consequence of this, it is possible to anticipate a scenario of: higher fees;

lower appetite for corporate debt, including junior or senior bank debt; higher appetite for sovereign debt (although the debate on zero risk-weight is open); higher cost of derivatives hedging; less securitisation activity, with an uncertain impact on prices; I&P being more involved in infrastructure funding (although there are limits to this process); and more real estate activity from the insurance sector.

From the perspective of banking regulations, this will put additional strain on the relationship with banks, although new potential opportunities could arise if the regulatory framework is adequate.

What is clear in the near future is that regulators of banks, pensions and insurance sectors should analyse the interactions of new regulations; the trade-offs and the risks; ensure their consistency; and revise those regulations that create the wrong kind of incentive in the long run.

References

Bank for International Settlement (BIS) (2011a) "Fixed income strategies of insurance companies and pension funds". Committee on the Global Financial System. CGFS papers nº 44.

Bank for International Settlement (BIS) (2011b) Basel III: A global regulatory framework for more resilient banks and banking systems - revised version June 2011

EIOPA (2012a) "EU-U.S. Dialogue Project Technical Committee Reports Comparing Certain Aspects of the Insurance Supervisory and Regulatory Regimes in the European Union and the United States".

EIOPA (2012b) "Financial Stability Report 2012. Second half-year report" EIOPA-FS-12-097. Frankfurt.

Escrivá JL., Fuentes E. and García-Herrero A (2009): *Balance y Proyecciones de la experiencia en infraestructura de los fondos de pensiones en Latinoamérica* . BBVA Research.

IMF (2012) "Global Financial Stability Report" in *World Economic and Financial* Surveys. April 2012. Washington DC.

IAIS (2012) "Frequently Asked Questions for the IAIS Global Systemically Important Insurers Project". October 2012.

Lubelli, L (2012) "Estado actual de Solvencia II" Colección: Documentos electrónicos. MAP20120040526. Ponencia presentada en la presentación del Informe El mercado español de seguros en 2011, el 19 de septiembre de 2012, en FUNDACIÓN MAPFRE.

McKinsey (2010) "Basel III and European banking: Its impact, how banks might respond, and the challenges of implementation". McKinsey Working Papers on Risk, Number 26. November 2010.

OECD (2011): *Pensions at a Glance 2011: Retirement-Income Systems in OECD Countries*. Paris.

OECD (2012): *Insurance Statistics Yearbook 2011*. Paris

Pieschacón, C.(2012): *Riesgo Sistémico y Actividad Aseguradora*. VI premio internacional de seguros, Julio Castelo Matrán. Fundación Mapfre.

Rodríguez-Ponga M.F (2012): "El seguro español y su proceso de adaptación al nuevo entorno". Dirección General de Seguros y Fondos de Pensiones.

Rozas P. Bonifaz J.L. and Guerra-García, G. (2012): *El financiamiento de la infraestructura. Propuestas para el desarrollo sostenible de una política sectorial*. CEPAL. Santiago de Chile.

Tuesta, D. (2012) Latin American pension fund and infrastructure investing.Panel on long term investing and infrastructure investments. Lecture given by David Tuesta at OECD/IOPS Global Forum on Private Pensions. Santiago de Chile, October 24th, 2012. BBVA Research

Zähres M. (2011) "Solvency and Basel III. Reciprocal effects should not be ignored". International topics. Current Issues. September. Deutsche Bank Research.

William J. (2012) "Revised IORP can revive DB plans" in *Investment&Pensions Europe* December 2012.

Working Papers

2013

13/01 **Hugo Perea, David Tuesta y Alfonso Ugarte:** Lineamientos para impulsar el Crédito y el Ahorro. Perú.

13/02 **Ángel de la Fuente:** A mixed splicing procedure for economic time series.

13/03 **Ángel de la Fuente:** El sistema de financiación regional: la liquidación de 2010 y algunas reflexiones sobre la reciente reforma.

13/04 **Santiago Fernández de Lis, Adriana Haring, Gloria Sorensen, David Tuesta, Alfonso Ugarte:** Lineamientos para impulsar el proceso de profundización bancaria en Uruguay.

13/05 **Matt Ferchen, Alicia Garcia-Herrero and Mario Nigrinis:** Evaluating Latin America's Commodity Dependence on China.

13/06 **K.C. Fung, Alicia Garcia-Herrero, Mario Nigrinis Ospina:** Latin American Commodity Export Concentration: Is There a China Effect?

13/07 **Hugo Perea, David Tuesta and Alfonso Ugarte:** Credit and Savings in Peru.

13/08 **Santiago Fernández de Lis, Adriana Haring, Gloria Sorensen, David Tuesta, Alfonso Ugarte:** Banking penetration in Uruguay.

13/09 **Javier Alonso, María Lamuedra y David Tuesta:** Potencialidad del desarrollo de hipotecas inversas: el caso de Chile.

13/10 **Ángel de la Fuente:** La evolución de la financiación de las comunidades autónomas de régimen común, 2002-2010.

13/11 **Javier Alonso, María Lamuedra y David Tuesta:** Potentiality of reverse mortgages to supplement pension: the case of Chile.

13/12 **Javier Alonso y David Tuesta, Diego Torres, Begoña Villamide:** Proyecciones de tablas generacionales dinámicas y riesgo de longevidad en Chile.

13/13 **Alicia Garcia Herrero and Fielding Chen:** Euro-area banks' cross-border lending in the wake of the sovereign crisis.

13/14 **Maximo Camacho, Marcos Dal Bianco, Jaime Martínez-Martín:** Short-Run Forecasting of Argentine GDP Growth.

13/15 **Javier Alonso y David Tuesta, Diego Torres, Begoña Villamide:** Projections of dynamic generational tables and longevity risk in Chile.

13/16 **Ángel de la Fuente:** Las finanzas autonómicas en boom y en crisis (2003-12).

13/17 **Santiago Fernández de Lis, Saifeddine Chaibi, Jose Félix Izquierdo, Félix Lores, Ana Rubio and Jaime Zurita:** Some international trends in the regulation of mortgage markets: Implications for Spain.

13/18 **Alicia Garcia-Herrero and Le Xia:** China's RMB Bilateral Swap Agreements: What explains the choice of countries?

13/19 **Javier Alonso, Santiago Fernández de Lis, Carmen Hoyo, Carlos López-Moctezuma y David Tuesta:** La banca móvil en México como mecanismo de inclusión financiera: desarrollos recientes y aproximación al mercado potencial.

13/20 **Javier Alonso, Santiago Fernández de Lis, Carmen Hoyo, Carlos López-Moctezuma and David Tuesta:** Mobile banking in Mexico as a mechanism for financial inclusion: recent developments and a closer look into the potential market.

13/21 **Javier Alonso, Tatiana Alonso, Santiago Fernández de Lis, Cristina Rohde y David Tuesta:** Global Financial Regulatory Trends and Challenges for Insurance & Pensions

2012

12/01 **Marcos Dal Bianco, Máximo Camacho and Gabriel Pérez-Quiros:** Short-run forecasting of the euro-dollar exchange rate with economic fundamentals. / *Publicado en Journal of International Money and Finance, Vol.31(2), marzo 2012, 377-396.*

12/02 **Guoying Deng, Zhigang Li and Guangliang Ye:** Mortgage Rate and the Choice of Mortgage Length: Quasi-experimental Evidence from Chinese Transaction-level Data.

12/03 **George Chouliarakis and Mónica Correa-López:** A Fair Wage Model of Unemployment with Inertia in Fairness Perceptions. / *Updated version to be published in Oxford Economic Papers: http://oep.oxfordjournals.org/.*

12/04 **Nathalie Aminian, K.C. Fung, Alicia García-Herrero, Francis NG:** Trade in services: East Asian and Latin American Experiences.

12/05 **Javier Alonso, Miguel Angel Caballero, Li Hui, María Claudia Llanes, David Tuesta, Yuwei Hu and Yun Cao:** Potential outcomes of private pension developments in China (Chinese Version).

12/06 **Alicia Garcia-Herrero, Yingyi Tsai and Xia Le:** RMB Internationalization: What is in for Taiwan?.

12/07 **K.C. Fung, Alicia Garcia-Herrero, Mario Nigrinis Ospina:** Latin American Commodity Export Concentration: Is There a China Effect?.

12/08 **Matt Ferchen, Alicia Garcia-Herrero and Mario Nigrinis:** Evaluating Latin America's Commodity Dependence on China.

12/09 **Zhigang Li, Xiaohua Yu, Yinchu Zeng and Rainer Holst:** Estimating transport costs and trade barriers in China: Direct evidence from Chinese agricultural traders.

12/10 **Maximo Camacho and Jaime Martinez-Martin:** Forecasting US GDP from small-scale factor models in real time.

12/11 **J.E. Boscá, R. Doménech and J. Ferria:** Fiscal Devaluations in EMU.

12/12 **Ángel de la Fuente and Rafael Doménech:** The financial impact of Spanish pension reform: A quick estimate.

12/13 **Biliana Alexandrova-Kabadjova, Sara G. Castellanos Pascacio, Alma L. García-Almanza:** The Adoption Process of Payment Cards -An Agent- Based Approach. / *B.Alexandrova-Kabadjova, S. Martinez-Jaramillo, A. L. García-Almanza y E. Tsang (eds.) Simulation in Computational Finance and Economics: Tools and Emerging Applications, IGI Global, cap. 1, 1-28 (Ver: IGI Global).*

12/14 **Biliana Alexandrova-Kabadjova, Sara G. Castellanos Pascacio, Alma L. García-Almanza:** El proceso de adopción de tarjetas de pago: un enfoque basado en agentes.

12/15 **Sara G. Castellanos, F. Javier Morales y Mariana A. Torán:** Análisis del uso de servicios financieros por parte de las empresas en México: ¿Qué nos dice el Censo Económico 2009? / *Publicado en Bienestar y Política Social, Vol. 8(2), 3-44. Disponible también en inglés: Wellbeing and Social Policy, Vol. 8(2), 3-44.*

12/16 **Sara G. Castellanos, F. Javier Morales y Mariana A. Torán:** Analysis of the Use of Financial Services by Companies in Mexico: What does the 2009 Economic Census tell us?

12/17 **R. Doménech:** Las Perspectivas de la Economía Española en 2012.

12/18 **Chen Shiyuan, Zhou Yinggang:** Revelation of the bond market (Chinese version).

12/19 **Zhouying Gang, Chen Shiyuan:** On the development strategy of the government bond market in China (Chinese version).

12/20 **Angel de la Fuente and Rafael Doménech:** Educational Attainment in the OECD, 1960-2010.

12/21 **Ángel de la Fuente:** Series enlazadas de los principales agregados nacionales de la EPA, 1964-2009.

12/22 **Santiago Fernández de Lis and Alicia Garcia-Herrero:** Dynamic provisioning: a buffer rather than a countercyclical tool?

12/23 **Ángel de la Fuente:** El nuevo sistema de financiación de las Comunidades Autónomas de régimen común: un análisis crítico y datos homogéneos para 2009 y 2010.

12/24 **Beatriz Irene Balmaseda Pérez y Lizbeth Necoechea Hasfield:** Metodología de estimación del número de clientes del Sistema Bancario en México.

12/25 **Ángel de la Fuente:** Series enlazadas de empleo y VAB para España, 1955-2010.

12/26 **Oscar Arce, José Manuel Campa y Ángel Gavilán:** Macroeconomic Adjustment under Loose Financing Conditions in the Construction Sector.

12/27 **Ángel de la Fuente:** Algunas propuestas para la reforma del sistema de financiación de las comunidades autónomas de régimen común.

12/28 **Amparo Castelló-Climent, Rafael Doménech:** Human Capital and Income Inequality: Some Facts and Some Puzzles.

12/29 **Mónica Correa-López y Rafael Doménech:** La Internacionalización de las Empresas Españolas.

12/30 **Mónica Correa-López y Rafael Doménech:** The Internationalisation of Spanish Firms.

12/31 **Robert Holzmann, Richard Hinz and David Tuesta:** Early Lessons from Country Experience with Matching Contribution Schemes for Pensions.

12/32 **Luis Carranza, Ángel Melguizo and David Tuesta:** Matching Contributions for Pensions in Colombia, Mexico, and Peru: Experiences and Prospects.

12/33 **Robert Holzmann, Richard Hinz y David Tuesta:** Primeras lecciones de la experiencia de países con sistemas de pensiones basados en cotizaciones compartidas.

12/34 **Luis Carranza, Ángel Melguizo y David Tuesta:** Aportaciones compartidas para pensiones en Colombia, México y Perú: Experiencias y perspectivas.

Click here to access the list of Working Papers published between 2009 and 2011

Contact details:

BBVA Research
Paseo Castellana, 81 - 7ª planta
28046 Madrid (España)
Tel.: +34 91 374 60 00 y +34 91 537 70 00
Fax: +34 91 374 30 25
bbvaresearch@bbva.com
www.bbvaresearch.com