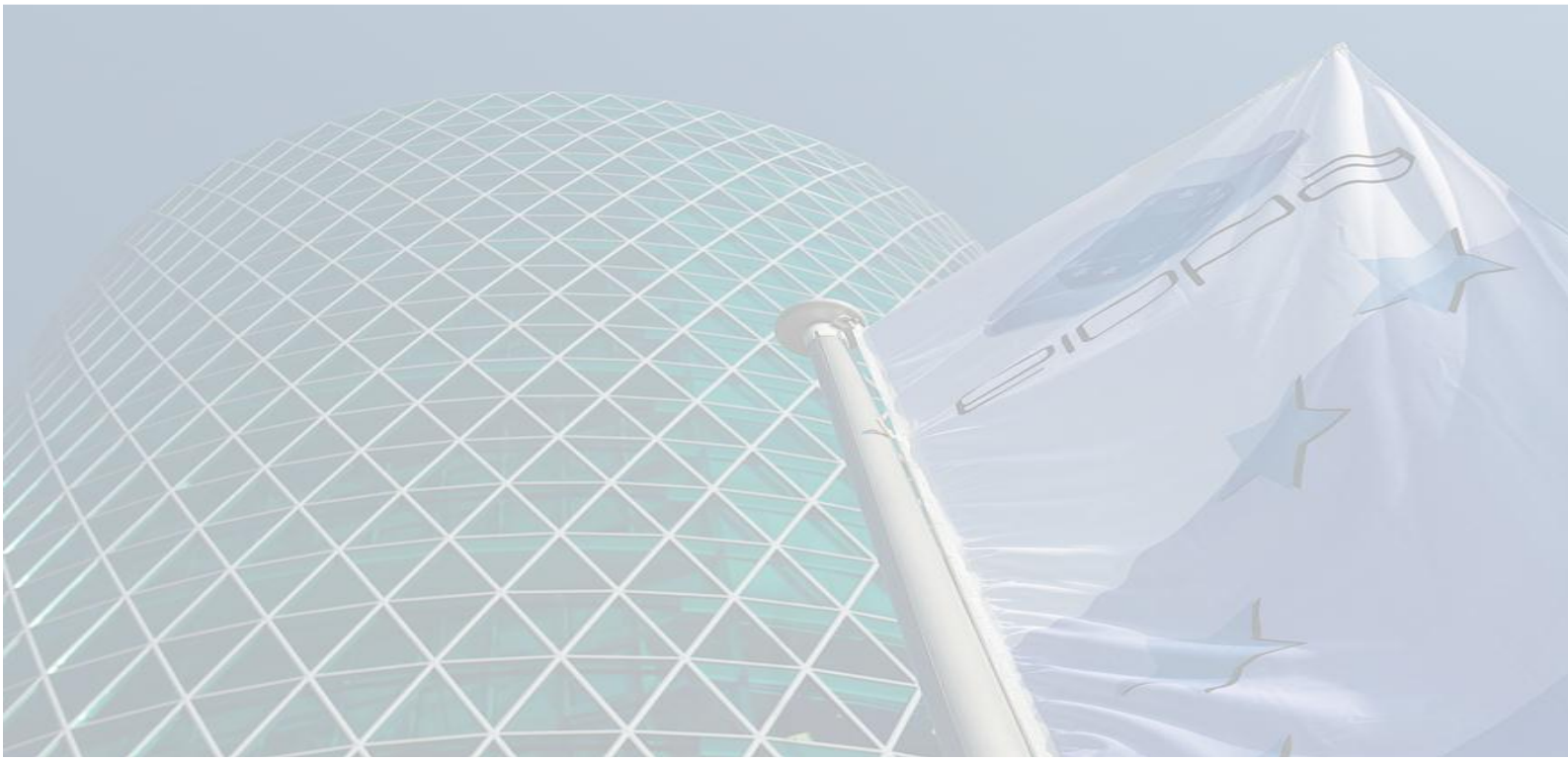
EIOPA-FS-14-044
14 May 2014

EUROPEAN INSURANCE
AND OCCUPATIONAL PENSIONS AUTHORITY

Financial Stability Report

May 2014



About EIOPA Financial Stability Reports

Under Article 8 of Regulation 1094/2010, EIOPA is, inter alia, mandated to monitor and assess market developments as well as to undertake economic analyses of markets. To fulfill its mandate under this regulation EIOPA performs market intelligence functions regarding its supervisory universe, develops a market surveillance framework to monitor, and reports on market trends and financial stability related issues. The findings of EIOPA's market development and economic analyses are published in the Financial Stability Report on a semi-annual basis.

(Re) insurance undertakings and occupational pension funds are important investors in the financial market and provide risk sharing services to private households and corporates. In the financial markets, they act as investors, mostly with a long-term focus. Their invested assets aim to cover liabilities towards policyholders or members of pension fund schemes to which long-term savings products are offered, e.g. in the form of life assurance or pension fund schemes. Aside from offering savings products, (re)insurance undertakings provide risk sharing facilities, covering biometric risks as well as risks of damage, costs, and liability.

Financial stability, in the field of insurance and pension funds, can be seen as the absence of major disruptions in the financial markets, which could negatively impact insurance undertakings or pension funds. Such disruptions could, for example, result in fire sales or malfunctioning markets for hedging instruments. In addition, market participants could be less resilient to external shocks, and this could also affect the proper supply of insurance products or long-term savings products at adequate, risk-sensitive prices.

However, the insurance and pension fund sectors can also influence the financial stability of markets in general. Procyclical pricing or reserving patterns, herding behavior and potential contagion risk stemming from interlinkages with other financial sectors, are examples that could potentially make the financial system, as a whole, less capable of absorbing (financial) shocks. Finally, (re)insurance undertakings might engage in non-traditional/non-insurance business such as the provision of financial guarantees or alternative risk transfer, which also needs to be duly reflected in any financial stability analysis.

The Financial Stability Report draws on both quantitative and qualitative information from EIOPA's member authorities. Supervisory risk assessments as well as market data are further core building blocks of the analysis.

First half-year report 2014

EIOPA has updated its report on financial stability in relation to the insurance, reinsurance and occupational pension fund sectors in the EU/EEA. The current report covers developments in financial markets, the macroeconomic environment, and the insurance, reinsurance and occupational pension fund sectors as of 23 April 2014 unless otherwise indicated.

Table of Contents

Foreword by the Chairman

As we approach the middle of 2014, the broad economic outlook for Europe has improved, but the key risks we have previously identified for the insurance and pensions sectors remain. There is still the risk of a fall back into weak macroeconomic conditions, while the low yield environment and credit risk associated with exposures to sovereign and financial institutions still weigh on the sectors. Furthermore, the potential for a reversal in the investment flows that has been compressing spreads on higher yielding assets is something we are maintaining a close watch on, as well the entry of insurers into new markets and new asset classes. On the pension front, low yields remain a drag on performance and cover ratios continue to be a point of concern. While we have some cause for overall optimism, this needs to be tempered by an awareness of underlying risks facing the insurance and pensions sectors.

In recent days EIOPA has launched its 2014 Stress Test for the insurance sector, which will give us a greater insight into its resilience and the potential vulnerabilities it faces. This comprehensive test will encompass the market and credit risks that we have been highlighting in successive Financial Stability Reports, along with a set of specific insurance shocks. It will also include a specific low yield module as a follow-up to EIOPA's Opinion on the supervisory response to a prolonged period of low interest rates. This exercise will be a big challenge for firms and undertakings, national authorities and EIOPA in what is already a busy year in terms of the Solvency II Preparatory Phase and getting ready for Solvency II implementation on 1 January 2016. Nevertheless, it is a key element in EIOPA's toolkit for assessing risks to the insurance sector and making appropriate recommendations if necessary.

In the current report, EIOPA is introducing some new analytical tools that are part of our ongoing work to develop new methodologies for financial stability assessment in relation to insurance and pensions. New quantitative tools require data for their calibration and use, a data need that will be met by the improved reporting of supervisory data under Solvency II. In addition, the development of new tools and methodologies will benefit from discussion among supervisors, industry and academia, as well as presentation of new applied research to a wider audience. In line with this objective, this report is presented in two parts. The first covers the regular analysis and assessment of risks and vulnerabilities, while the second presents thematic articles aimed at deeper analysis of specific issues and broader policy discussions. This format will become a regular feature of the Report and in this edition the articles cover econometric modelling of premium income and an overview article on Globally Systemically Important Insurers.

Notwithstanding the challenges in front of us in 2014, I am confident that EIOPA will positively contribute to the overall financial stability of the European insurance and occupational pension sectors and I look forward to further developments in this area.

Gabriel Bernardino

Executive Summary

While the current European economic outlook is rather positive, the key risks and vulnerabilities for the insurance companies and occupational pension funds remain: the vulnerable macroeconomic climate, the low yield environment and credit risks arising from the exposure to sovereigns and financial institutions. Credit default swap spreads both on sovereign and financial bonds might indicate decreasing credit risk. Heavily indebted private and public sectors, high unemployment and market fragmentation have been the main sources of vulnerabilities. However, the overall economic activity in Europe still remains substantially behind the average world economic growth. European insurers continue to make inroads into emerging markets. Attracted by higher profit margins from less developed markets, insurers have increased their exposure to political, legal and other risks in these markets. But because rising individual wealth and aging populations present a growth potential for insurers and pension funds worldwide, this development could help insurers to grow at a profitable rate. In the current difficult environment alternative capital is on the rise as its return is relatively attractive. Nevertheless, this development needs monitoring. The additional reserves build-up imposed by some governments will also depress insurers' earnings in some countries as well as the erosion of tax advantages, especially for life insurers.

For them, overall premium growth following years of subdued sales was reported, but growth is not uniform across all countries. Low interest rates also led to new developments. Lower guarantees on new business and increasing sales efforts for unit-linked products are examples of this trend. The overall profitability of insurers is still relatively robust, but results remain pressurised. Solvency I levels both for life and non-life insurers are well above the regulatory minimum requirement.

The global reinsurance sector continued its robust growth in 2013. Major loss events from natural catastrophes in 2013 compare favourably with previous years. In the case of reinsurers, profitability is relatively high. An unchanged combined ratio and return on equity help reinsurers secure stable earnings, but low interest rates already weigh on the investment income. Reinsurers also face rather high Solvency I capital levels. The strong demand from investors for catastrophe bonds continues its upward trend and reached its highest level ever.

For the European occupational pension fund sector, the current low yield environment is putting significant pressure on their profitability. Only a few national authorities reported cover ratios in 2013 that are sufficiently high. Longevity risks make traditional defined benefit (DB) schemes less affordable for employers and less sustainable for insurers. Total assets increased somewhat in 2013, while the investment allocation across the sector remained broadly unchanged.

The gradual economic recovery in Europe that was observed for both life and non-life insurers is supported by EIOPA's quantitative and qualitative assessment, but it still projects very weak gross written premium growth, at least throughout 2015. Prospects for a more positive outlook are likely in emerging markets, where companies react to a positive gap between domestic and emerging markets' economic growth. Insurers are vulnerable to equity price shocks, while sensitivity to reduced interest rates varies as the embedded value reports published by major European insurers reveal.

The report contains two parts – the standard part and the thematic article section. The standard part is structured as follows: the first chapter discusses the key risks identified for insurance and occupational pension sectors. The second, third and fourth chapter elaborate on these risks covering all sectors (insurance, reinsurance and pension). The fifth chapter provides the final qualitative and quantitative assessment of the risks identified in the first chapter and further monitored in the subsequent chapters. This assessment is done in terms of the scope as well as the probability of their materialization using econometric techniques and questionnaires.

The newly introduced second section with two thematic articles elaborates on two specific topics in more detail and underpins the analysis and discussions provided in the standard part. The first article focuses on econometric modelling of GWP and provides empirical evidence that insurers expand their international activities in periods when domestic growth opportunities are low. The second article discusses globally systemic relevant insurers.

PART I

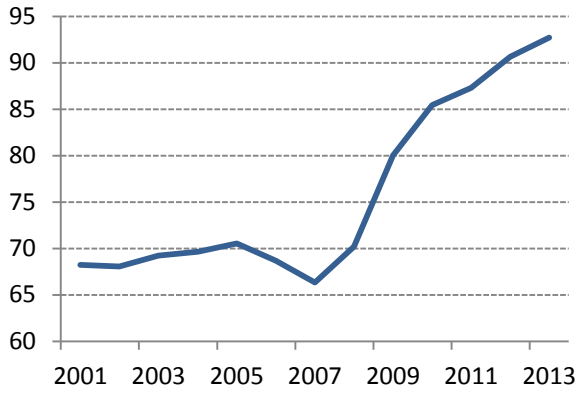
1. Key macro-prudential risks

The macroeconomic environment in 2014 still remains challenging in many European countries, although the overall economic outlook continues to improve in most countries.

1.1. Vulnerable macro-economic climate

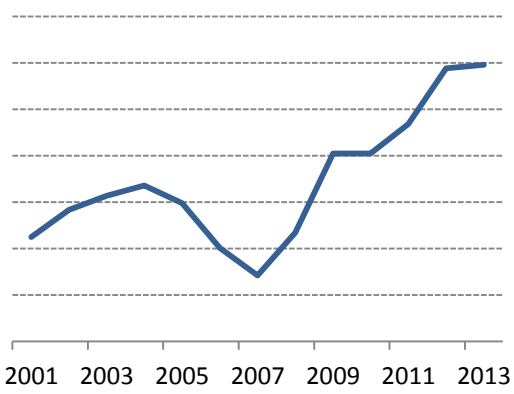
Economic conditions in European countries improved but remain fragile. The European economy is currently more vulnerable to sharp increases in interest rates as government debt increased since the financial crisis emerged in 2008 (see Figure 1). The current very high unemployment (see Figure 2) resulted in a negative impact on long-term market growth for the insurance and pension sectors. Unemployment in Europe is not expected to decrease significantly in the short to medium run.

Figure 1: EU average government debt (as % of GDP)



Source: ECB

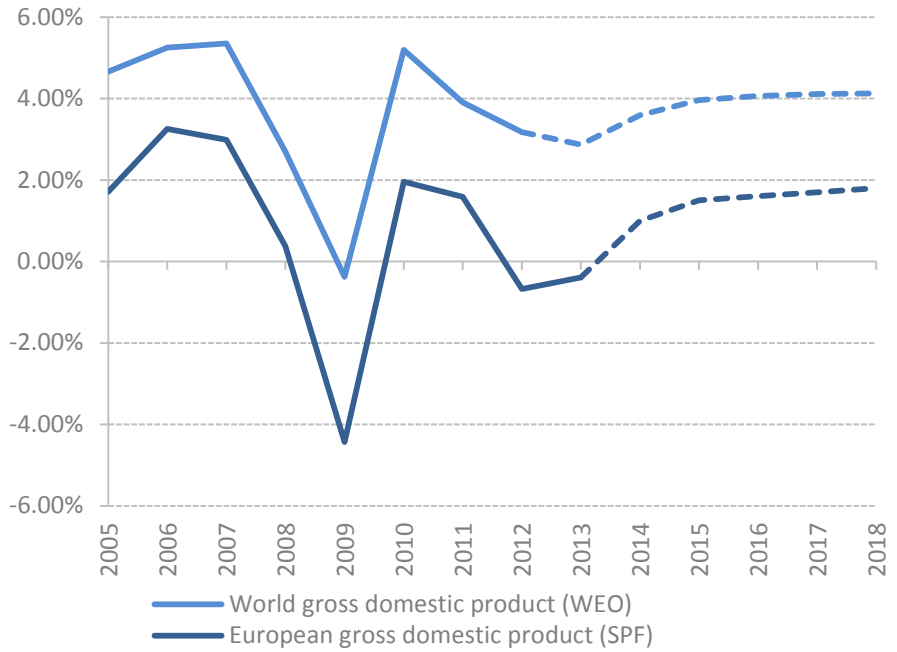
Figure 2: EU average unemployment rate (as a % of labour force)



Source: ECB

Diverging economic climates within Europe prevail. The different situation in labour markets partially explains the existing market fragmentation in Europe. Substantial rigidities and differences in national social securities, unemployment benefits and pension systems still persist and limit free labour movement. The unemployment rate varies substantially, from 5% in some countries to almost 30 per cent in others. The overall growth of economic activity in Europe still remains substantially behind average world economic growth (see Figure 3).

Figure 3: Economic growth



Source: World Economic Outlook and ECB survey of professional forecasters
Note: The dash lines correspond to the IMF forecast and ECB survey of professional forecasters.

Expansion into new emerging markets is driven by subdued growth in developed economies. Insurers continue to make inroads into emerging markets. These markets typically benefit from higher profit margins than developed markets, but expose insurers to other risks such as legal risks and political risks.[1] However, rising individual wealth and aging populations in emerging markets present a growth potential for insurers and pension funds in Europe, while the low interest rate environment challenges them. Moreover, some countries have high growth projections in vehicle ownership, while in other countries micro insurance for small and medium enterprises is on the rise, with insurance firms collecting premiums via prepaid and electronic debit cards.

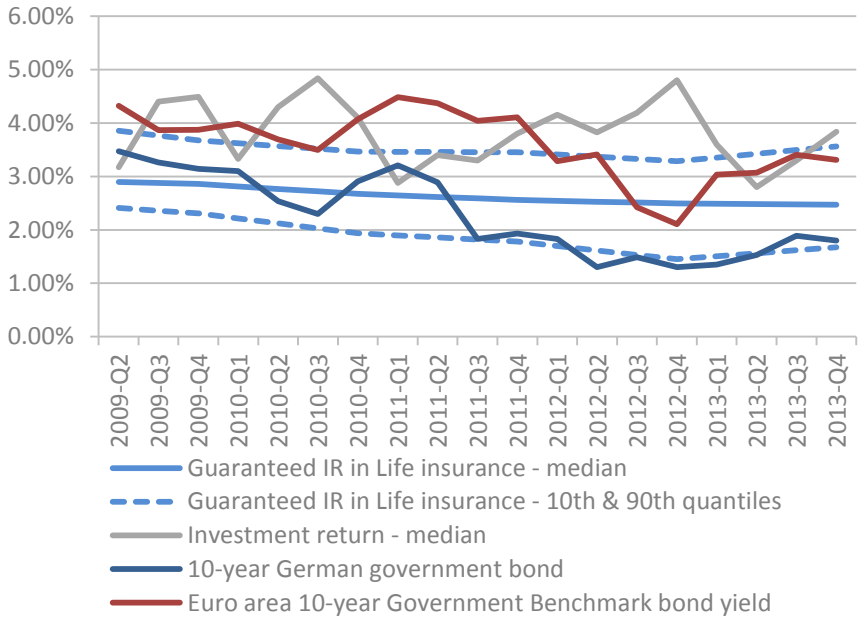
1.2. Low yield environment

The prolonged low interest rate environment remains a key risk in many jurisdictions. In particular, this is the case for insurance companies operating in markets with a large portfolio of traditional life business with guarantees which are currently higher than the available risk free return in many markets.

[1] For example, some large insurance groups operate in the Ukraine and might be affected by the current political turmoil.

Also, assets with a similar duration to the related liabilities are typically not available, which implies a reinvestment risk.[2]

Figure 4: Guaranteed interest rate in life insurance vs. investment return, German and Euro area 10Y government bond



Source: EIOPA (sample based on large insurance groups in EU and Switzerland) and ECB
Note: The figures represent annual guaranteed rates for businesses where such guarantees are applied

Prospects for earnings still depend on the future development of interest rates. The low interest rate environment puts pressure on insurers' and pension funds' investment returns. It has subsequently a negative impact on their ability to maintain long-term profitability and stable financial profiles. Ongoing pressure on investment earnings can be observed resulting in decreasing dividend capacities. The importance of this risk has been reflected in the preparation of the upcoming EIOPA comprehensive stress test which will be run with the protracted low interest rate environment as a central part of this

[2] Indeed, life insurers have liabilities that sometimes go beyond 30 years, while it is not always easy to find corresponding assets of such duration which expose companies to reinvestment risk.

exercise. The stress test will also include a specific module assessing the impact of a long-lasting scenario with low rates for all maturities.[3]

Box 1: EIOPA Stress Test

EIOPA stress test comprises two completely independent main blocks - the core module and the low yield module. Both modules use the standard stress test methodology applying Solvency II market consistent valuation assessing the immediate impact of instantaneous shocks, but there is no additive property to the two pieces (i.e. the core and low yield module), nor could there be as they are based on different samples of undertakings.

The first block includes two types of independent stresses - financial market scenarios and insurance specific shocks. Two adverse financial market scenarios prepared in cooperation with the ESRB will be tested. The narrative of the adverse scenarios takes as its starting point a sudden rise in the global risk aversion. This triggers a worldwide shock to asset prices such as government and corporate bond prices, equity prices and real estate prices. Initially the shock is assumed to affect mostly the non-financial corporate bond markets and the equity markets, where risk premia have been particularly compressed. These shocks are assumed to propagate quickly to other financial markets. The sovereign debt crisis in the euro area would aggravate, with the spread of all euro area government bonds widening in relation to the SWAP rates, albeit with differences across countries. Sovereign yield spreads outside the euro area would also widen. Credit spreads on bank debt would increase more than those on corporate debt, because of an assumed lagging of bank balance sheet repair. Tightening credit conditions, in combination with rising unemployment and weakened domestic demand is assumed to result in a steep fall in real estate prices. In this environment of financial turmoil and weakened macroeconomic conditions, financial market expectations of the accommodative monetary policy are assumed to push SWAP rates below current low levels. German sovereign bonds yields would not fall along with SWAP rates, reflecting an assumed loss of safe haven status. On the other hand, insurance specific shocks related to longevity, mortality, catastrophes and lapses will impact liabilities only and are articulated as independent stresses. The specific factor insurance tests are conceived as a separate element of the exercise and are not combined with the financial market scenarios in some form of overarching scenario.

The second block is a low yield module designed to follow up from the EIOPA opinion issued in 2013. Thus it is an even more independent element, as it has a different design, scope and focus than the core module. For that very reason, shocks are not comparable and therefore should not be compared.

Some tendencies towards search for yield can be observed. When insurers seek better yields to reduce negative spreads, higher risk assets are often involved that in turn increase other risks (e.g. market risk and credit risk) as

[3] The low yield satellite exercise is one of the follow-up actions specified in EIOPA Opinion on Supervisory Response to a Prolonged Low Interest Rate Environment (28 February 2013).

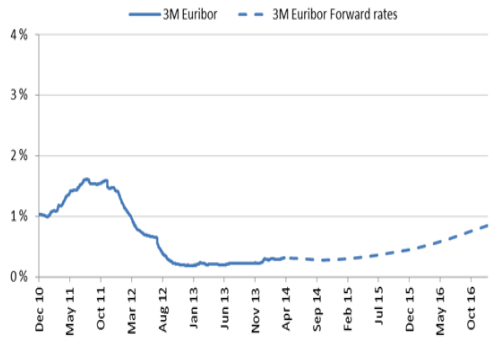
well. In order to offset these, strategies to invest in infrastructure financing, direct loans, real estate assets, equities and establishing partnerships with banks to fund direct loans to medium and large corporates are recorded. There is also some evidence towards the restructuring of the bond portfolio towards lower quality corporate bonds away from low yield but higher quality government bonds. However, the overall asset allocation has not changed significantly.

Signals of a changing trend decreasing risk of the low yield environment are still ambiguous. Modest increases in the 10 Year SWAP rates and short term forward rates indicate a market expectation of future raises in the risk free rate. However, the likelihood of a change in the current low yield environment has decreased due to the deflationary tendencies in Europe, which may lead to the maintenance of the European monetary policy strategy. Hence, a rapid change of profitability is unlikely.

Figure 5: 10 Y Swap rates

Source: Bloomberg

Figure 6: 3M EURIBOR



Source: Bloomberg
Note: Forecast is based on the forward 3M EURIBOR rate

Market risk in most insurance groups and pension funds account for the highest portion of economic capital requirements. Hence, the further interest rate development will have a crucial impact on their profitability and solvency. For this reason apart from the low yield environment, the impact of a sudden increase in yields (reducing the value of their portfolio and making life insurance products less competitive compared with short term banking products) needs to be tested.

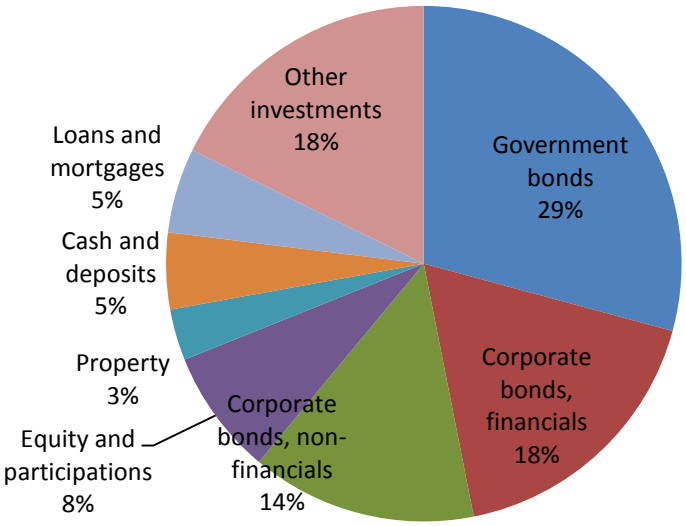
1.3. Credit risk

Contagion risks from the exposure to sovereigns and financial institutions remain a challenge for the insurance sector. Although CDS spreads both on sovereign and financial bonds might indicate decreasing credit risks, heavily indebted private and public balance sheets and weak financial sector profits remain the main sources of vulnerabilities. Recent turbulences in

key emerging markets have increased the likelihood of a sudden reassessment of global risk premia with a negative impact on insurers' assets. The sovereign risk will further continue to challenge the profitability of the insurance.

Government bonds and bonds of financial institutions are still the first choice to match insurance liabilities in a specific country. At the end of 2013, large European insurers were estimated to hold almost 30 per cent of their investment portfolio in government bonds and 18 per cent in financial bonds (see Figure 7). A deterioration of sovereign credit quality and rating downgrades poses a risk for the insurance sector. Hence, risk mitigation strategies that improve the diversification of bond portfolios by industry and geography should be considered.

Figure 7 Average composition of the investment portfolio of large European insurers at the end of 2013 (4th quarter)



Source: EIOPA (sample based on large insurers in EU and Switzerland)

1.4. Other Challenges

In Europe, Solvency II has finally been agreed, and will be fully implemented in 2016. The Omnibus II Directive defined the concrete areas in which EIOPA will be able to draft technical standards and also clarified its role in ensuring more harmonised technical approaches on the calculation of technical provisions and capital requirements. Consistent implementation and application of Solvency II will be crucial for the success of the new regulatory regime in the following years.

Box 2: Solvency II

Solvency II aims at building up both the single European rulebook and the single EU Supervisory practices handbook, which will become applicable in 2016 to all insurance and reinsurance undertakings, and supervisors in the EU internal market. Solvency II is called to materialize the most important piece for the insurance sector of the ambitious plan developed during the last years by the European Union for the strengthening of the regulation and supervision of the financial sector, improving its contribution to economic growth in the Union, and enhancing policyholders' protection.

Preserving financial stability is an important element of Solvency II. The following is a non-exhaustive list of more specifics objectives for Solvency II:

(1) Improving the risk management of EU insurers and reinsurers.

(2) Providing for an EU-harmonized, internationally convergent and cross-sectoral consistent prudential regime.

(3) Enhancing transparency towards the supervisors and the market.

(4) Increasing the quality of the capital elements available for the insurers and reinsurers.

As a consequence of this approach, undertakings, supervisors and financial markets will have access to a high-quality and fully comparable broad set of information which appropriately reflects the market movements.

Solvency II will consider the potential impacts of the insurers and reinsurers decisions on financial stability. In that sense Solvency II incorporates measures such as to avoid artificial volatility of insurance balance sheets, measures to prevent pro-cyclical investment behaviour, measures to foster investments for the economic growth and measures to mitigate undue potential pro-cyclical effects in crisis situations, in which the ESFS (European System of Financial Supervision) plays a strong role.

The efficiency of all these measures and in particular how they fit with the protection of policyholders need to be monitored and assessed in the first years of implementation of Solvency II. Hence, attending to the principles and objectives, Solvency II is conceived to anticipate adverse macro-prudential developments or even to prevent the accumulation of excessive risks within the financial system.

However, a prudent approach advises to closely monitor how the new framework works, the ways it influences financial markets and insurers' behaviour, and hence whether any adjustment is needed.

The success in achieving and maintaining the objectives mentioned above relies on the ability of the regulators, supervisors and insurance industry, working

together, to identify the appropriate timing and the best manner to continuously evolve the framework towards the general interest of the citizens the Union.

Insurers may be affected by cyber risk in two ways, i.e. by means of operational risks and as underwriter of such risks[4]. Both financial and traditional companies are reported to be hit by cyber-attacks. The motivation can be financial gain (either directly by targeting fund transfer systems, or indirectly by seeking to sell stolen data such as customer data), or political targeting of institutions by social groups to disrupt services. Banks in particular have experienced targeted attacks on their systems. As for any other company with a website, insurers face the risk of relatively non-sophisticated attacks such as distributed denial of service (DDoS) attacks. These attacks effectively block the service for a limited period of time and often get media attention which might affect the company's reputation negatively.

In addition to that, insurers are vulnerable to more sophisticated malicious attacks aimed at obtaining or manipulating customer data. Such data could include payment details (e.g. credit card information), log-in information or important confidential personal data such as health data and insurance history files of individual policyholders. Depending on the exact type of the compromised information, insurers face the risk that a security-breach may result in legal actions with very high redress and litigation costs.

Management actions observed over the last years showed that insurers can be exposed to increased operational risks from cyber-attacks particularly in the mobile space, if there is pressure to get products to markets. It is necessary that undertakings ensure sufficient testing before they go live to ensure there are no security holes when the product is available for the market. New types of risks require new methods of risk management.

An additional source of vulnerability coming from cyber risk relates to the role of insurers as underwriters of such risk. There is some evidence of some undertakings willing to write cyber risk in order to reach for a higher rate of return. These developments need to be closely monitored by supervisors.

Alternative capital is still on the rise as a result of the relative attractiveness of the returns it offers. It now accounts for about USD 45bn of global catastrophe limits (about 11% of the global catastrophe market). In 2013 the biggest growth has come from collaterised reinsurance followed by insurance-linked securities (ILS) and sidecars. Industry Loss Warranties (ILW) on the other hand have been declining during this time. These instruments offer returns that are driven by typical market forces and can diversify an existing portfolio. In addition to risk management benefits, ILS transactions also offer

[4] Box 3 reports on cyber risks too.

sponsors potential costs savings over alternatives such as traditional reinsurance.

Effects from natural catastrophe events in 2013 not fully known yet but 2013 gave the reinsurance industry a respite. According to first estimates, 2013 global insured losses (USD 31bn) were far below losses in 2012.

Additional reserving requirements imposed by some governments will further influence the insurers' earnings in some countries. This is because guaranteed business will require reserve strengthening which will contribute to stronger capital levels. Additional reserving will enable insurers to build up additional capital buffers to meet maturing obligations promptly.

Erosion of tax advantages also heralds harder times ahead for life insurers. During the past, premiums for savings orientated life products have risen predominantly on the back of fiscal incentives advantaging life products over other savings media. However, during recent years many of these fiscal advantages have started to disappear, which will have an impact on growth prospects but also on increasing competition and on earning levels. Banks and other financial institutions also compete increasingly on equal terms with insurers in the savings market.

2. The European insurance sector[5]

The life sector faces new growth opportunities with the aging of populations worldwide, while the non-life sector may look for new innovative products. Structural budget deficits are forcing governments to shift responsibility for pensions from the state to individuals.

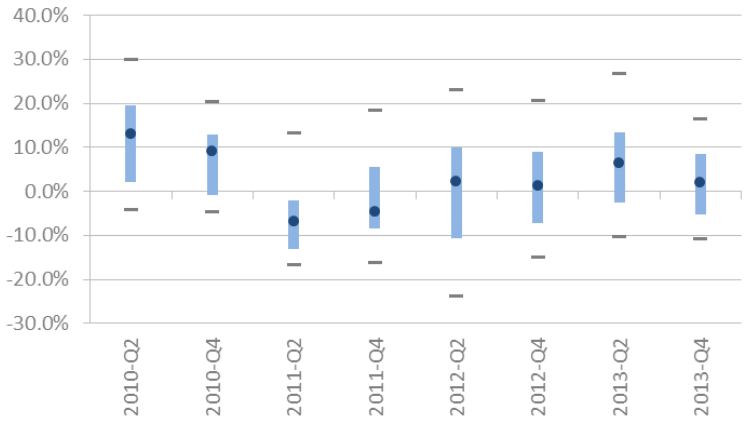
2.1. Market growth

LIFE INSURERS

Overall growth in life premiums remains positive. Over the last years, life insurers in particular reported subdued sales as a result of consumers' reduced purchasing power and weak European and global GDP growth. However, GWP (gross written premiums) growth in the life sector has improved slightly in 2012 and in 2013. An increased marketing of policies through the banking channel has also helped insurers in some regions to increase sales. The private pension market in most of Europe is on the verge of exponential growth as retirement planning for the citizens of most major EU countries is considered inadequate.

Figure 8 shows the recovery in GWP since 2011. The median company reported growth of 6.4% in the second quarter and 2% in the fourth quarter in 2013 (compared to around 2% and minus 5% in 2012 and 2011 respectively). However, some companies are still reporting a negative development as illustrated by the 90th percentile.

Figure 8 Year-on-year growth Gross written premiums - Life. Median, interquartile range and 10th and 90th percentile



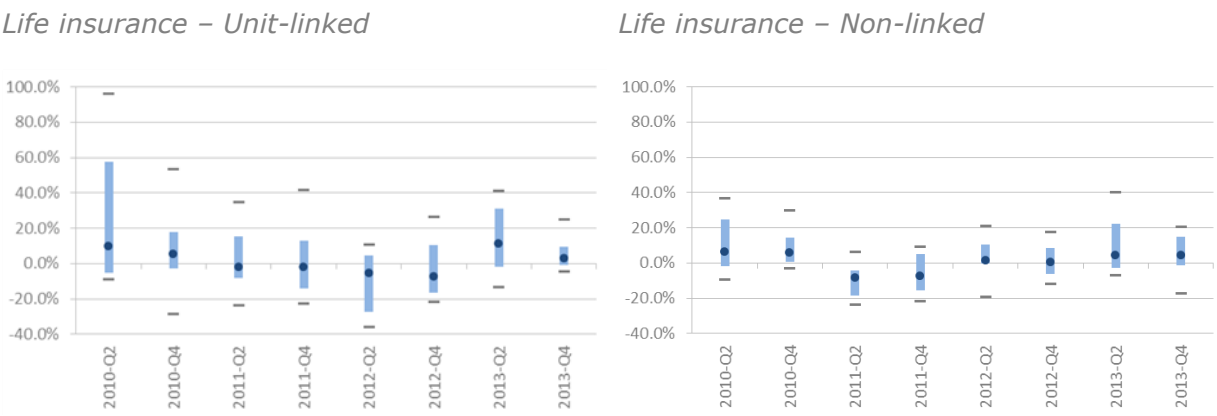
Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

[5] Note the data coverage and disclaimer note given in the Appendix which applies to the data presented in this chapter.

Domestic growth is not uniform across countries. Despite positive growth in life premiums reported by the largest European insurers in 2013, several European markets still report reduced sales. Supervisors expect this trend to continue. Reasons for this are high unemployment, the low yield environment (some high guarantee products are no longer offered), increased premiums taxes in some countries and the non-renewal of shorter term saving products that reached maturity.

Unit-linked products largely outperform growth in traditional (non-linked) life insurance in the first quarters of 2013 (see Figure 9). Several companies reported a shift from 'fixed-guaranteed' products to more 'unit-linked-type' products. This development is generally seen as a response to the low interest rates in many European markets. Life insurers are gradually lowering guarantees on new business, whilst they increase sales efforts on unit-linked products. These changes shift investment risk to consumers and bring insurance more directly into competition with UCITS (Undertakings for Collective Investment in Transferable Securities) and other funds.

Figure 9: Year on year growth in gross written premiums, linked and non-linked. Median, interquartile range and 10th and 90th percentile



Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

New types of products are evolving. In some countries, alternatives to traditional guarantees are currently explored. For example, some products may be marketed with a relatively high interest rate guarantee for the first years and with a possible upwards adjustment for the remaining part of the contract. Life insurers also increasingly focus on biometrical products (term life, disability and health insurance) as well as on fee business and asset management.

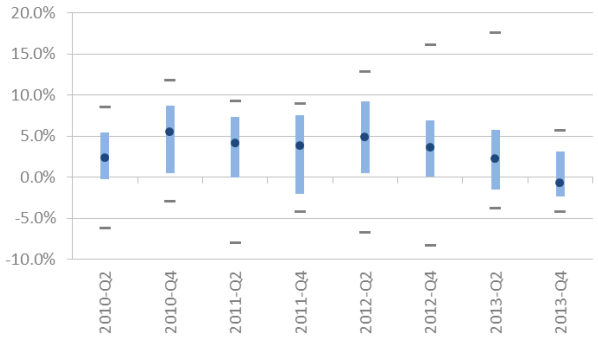
NON-LIFE INSURERS

Non-life premiums are declining. For the first time since the financial crisis, many non-life companies report a slight decline in premiums. Although the decline is marginal for the median company, some companies are reporting more dramatic falls (see Figure 10).

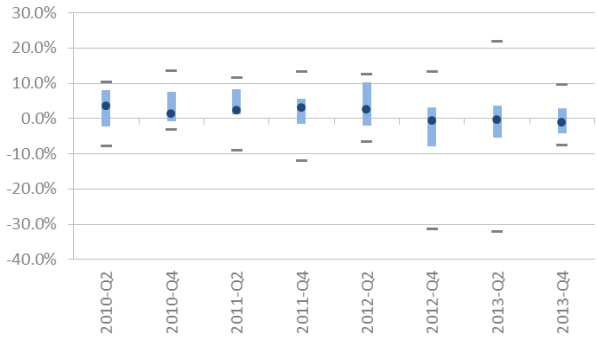
The trend seems to be driven to a large extent by the fall in compulsory motor vehicle third party liability due to falling disposable income which has been apparent over the last two years. This is a business line that was traditionally considered to be relatively isolated from the macroeconomic environment. EIOPA reported in the Autumn 2013 Financial Stability Report that this line of business was actually loss-making in a number of European countries. Hence the decline could also indicate a strategic pull-back on supply. The improving economic conditions in some EU regions and developing markets are likely to bring higher growth in non-life insurance as car sales are on the rise in these regions.

Figure 10: Year on year growth in gross written premiums, non-life. Median, interquartile range and 10th and 90th percentile

Non-life insurance



Non-life insurance – Motor vehicle third liability



Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

LIFE AND NON-LIFE INSURERS

Insurers, life and non-life insurers alike, are looking for new growth opportunities in emerging markets. Low growth potential at home has led many large European insurers to look for growth in emerging markets. Although emerging markets may offer more immediate opportunities to non-life companies offering e.g. house ownership protection and motor insurance, life insurers are also in a position to increase revenues in these markets as life expectancy and wealth accumulation improves. Such expansion may allow a diversification of the insurance lines written and provide a possibility to widen the product portfolio in markets that are relatively underpenetrated. However, it also poses new challenges in terms of risk management, new product developments and group supervision. Moreover, in order to offset low interest gains, some tendencies towards less liquid investments can also be seen. Market growth for insurance and pension is currently driven mainly by acquisitions or subsidiaries in Central and Eastern Europe and emerging markets (China, South East Asia, Latin America and Africa). Still, firms are focused on profitability and solvency rather than on top line growth.

Box 3: Market for cyber risk insurance policies

The importance of information and communications (IT) technology in the financial sector has grown substantially over the past years with IT-systems now supporting nearly all processes within an organisation. As IT systems become increasingly complex and the volume of data grows, operational risks become an increasingly important source of risk.

Cyber risk can be seen as a particular type of operational risk. As more and more (traditionally internal) systems are connected to Internet front-ends (e.g. customer portals) and communicate using common Internet protocols and network lines, the number and effects of cyber-attacks and other malicious attacks upon IT systems are rising.

Both financial and traditional companies are reported to be hit by cyber-attacks. The motivation can be financial gain (either directly by targeting fund transfer systems, or indirectly by seeking to sell stolen data such as customer data), or political targeting of institutions by social groups to disrupt services. Banks in particular have experienced targeted attacks on their systems designed to interfere with the payment processing or to steal credit card information. Once a system is compromised, losses can be large even in attacks of short duration. Several companies have also seen an increase in high-profile distributed denial of service (DDoS) attacks, were their websites are overloaded with traffic and become unable to respond to normal customer requests.

Redress and litigation costs as consequences of materialized cyber-related threats can be high. There is therefore an increasing interest by companies to insure against such risks, and by insurers to underwrite insurance against cyber-attacks.

Currently, the market for the cyber insurance policies is not very developed, and seems to consist of relatively customised policies dominated by a few big insurance providers. Not all cyber protection policies cover litigation and redress costs for instance, partly because it is difficult to establish a correct pricing for such products due to lack of data. However, several insurance companies, including some European companies, are positioning themselves, either with research reports or through product offering in this market, which is expected to grow in the coming years. Some products already on the market cover for instance protection against involuntary breach of privacy regulations and against claims for damages made by third parties if customer data is lost or made public. Even costs of notifying customers, hiring Public Relations consultants, and lack of revenue can be covered in some policies.

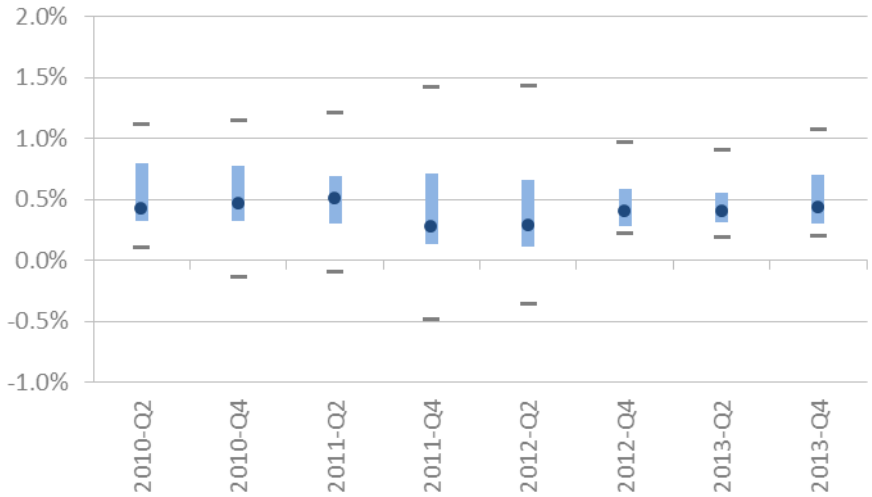
Cyber risk insurance may provide growth opportunities for insurers once such policies and the understanding of the inherent risks mature. However, these products require thorough risk management, and insurance supervision needs to be adapted to adequately understand the potential risks in such underwriting.

2.2. Profitability

LIFE INSURERS

The return on assets (ROA) for the median life company records 0.4% (Figure 11). On the one side, improvements in cost efficiency in many countries have contributed to relatively stable and positive results. On the other side, bond yields have been falling continuously from 2009 onwards. Although a slight recovery in bond yields is expected over the next year, this will not fuel to a materially improved earning situation.

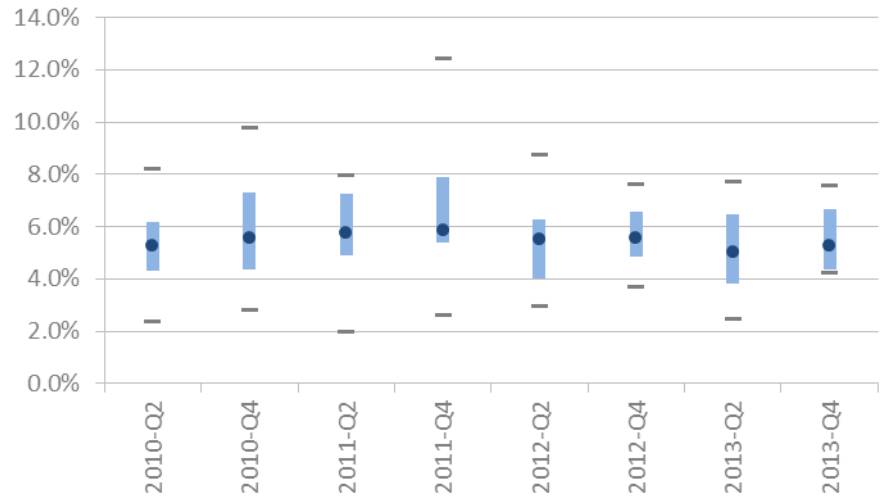
Figure 11: Returns on Assets - Life. Median, interquartile range and 10th and 90th percentile



Average guaranteed interest rates have decreased in recent years to about 2.5% for the median life insurance company and are about to decline even further. However, the current guaranteed rate for the median company is still higher than the yield on a 10-year German government bond (see page 10 in this report).

Some life savings contracts can often be cancelled without the imposition of severe penalties. In the last quarter of 2013, lapse rates increased from 5.9% to 6.2% on average. Although this increase is very modest, (and rates remain slightly below the last year's averages), this figure should be interpreted carefully as it hides the heterogeneous development across entities.

Figure 12 Lapse rates – Life. Median, interquartile range and 10th and 90th percentile



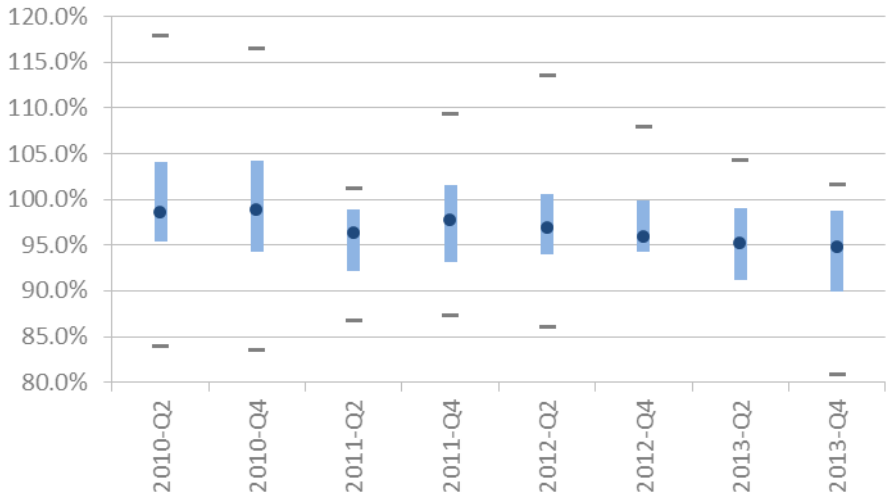
Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

The earnings of an insurer are the main source of future capital growth or depletion. A prolonged period of poor results or significant volatility in earnings can erode the capital base. Although past earnings not necessarily explain the future ones, trends in historic performance often provide some indication of the levels of profitability that can be expected going forward.

NON-LIFE INSURERS

The non-life sector benefits from relatively low underwriting risks, reflected by a median Combined Ratio of about 95 per cent. In terms of underwriting results, the natural catastrophes claims owing to floods in Central and Eastern Europe in early 2013 and the hailstorms in Northern Germany will not have a detrimental impact on the Combined Ratio as according to first estimates 2013 global insured catastrophes losses were below losses in previous years.

Figure 13: Combined Ratio – Non Life. Median, interquartile range and 10th and 90th percentile



Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

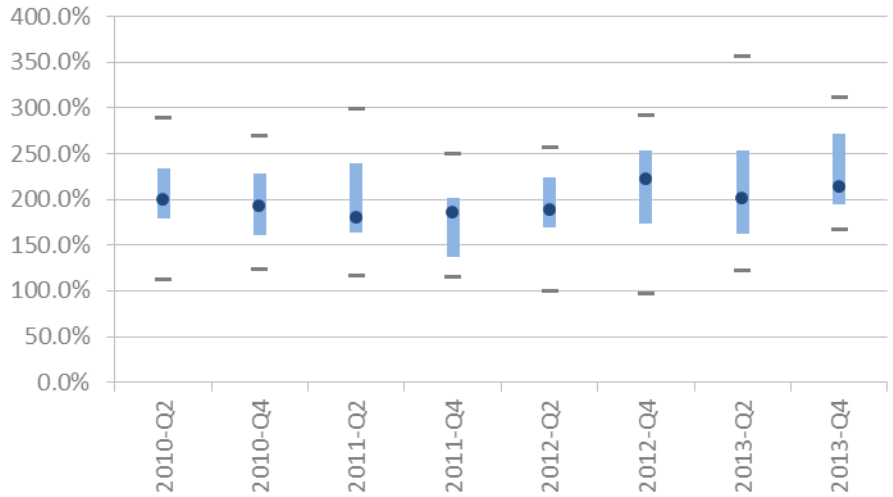
LIFE AND NON-LIFE INSURERS

The overall profitability of insurers is still relatively robust. Insurers are currently producing strong earnings. The total return on equity (ROE) is above 10% at the end of 2013 for the median company (Figure 14). However, earnings may be declining for some companies due to increased competition for insurers which will continue to place downwards pressure on future earnings levels.

2.3. Solvency

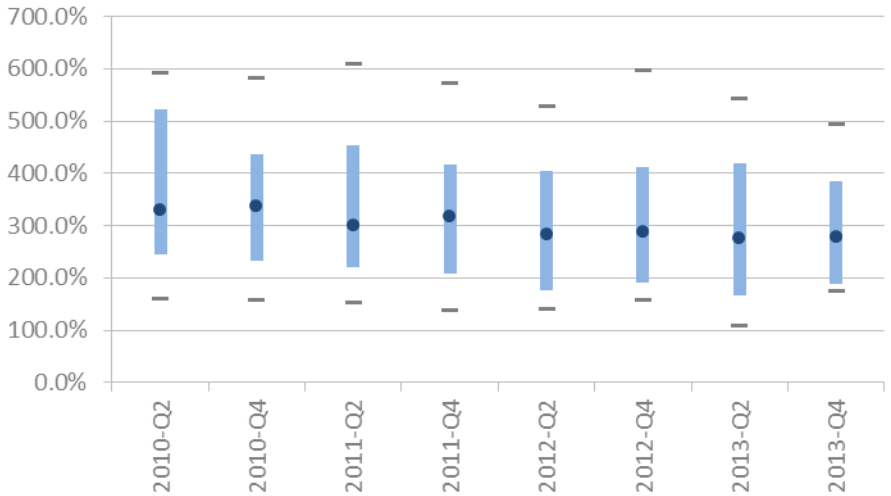
The required minimum solvency margin (Solvency I) for life insurers and non-life insurers is well above the regulatory minimum requirement. The median Solvency I ratio for life insurers (Figure 15) improved slightly in the last quarter of 2013. It compares at about 280 per cent very favourably with the ratio for non-life insurers (Figures 16) that has a median of about 210 per cent in 2013.

Figure 15 Solvency Ratio – Life. Median, interquartile range and 10th and 90th percentile



Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

Figure 16 Solvency Ratio – Non Life. Median, interquartile range and 10th and 90th percentile



Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

2.4. Regulatory developments

Trialogue negotiations (comprising the European Commission, European Parliament and Council of the EU) in February 2014 finally prepared the way for Solvency II regulations for insurers. The Omnibus II Directive, agreed by the trialogue in November 2013, sets out a key milestone of the Solvency II framework, implementation timeframe and transitional measures.

Within Solvency II the Own Risk and Solvency Assessment (ORSA) is the tool of the risk management system that brings together in a comprehensive way risk and capital management. When assessing the "overall solvency needs" as part of the ORSA, insurance companies should consider their risk profile, enterprise risk management framework, approved risk tolerance limits and business strategy.

The next step on the road towards Solvency II implementation will be the publication of the Delegated Acts by the European Commission this Autumn. EIOPA has provided the EU Commission with extensive advice on these measures and recently has also analysed the design and calibration of the capital requirements for certain long-term investments.

Currently the Solvency II Preparatory Phase is in place. In December 2013 an EU Directive was adopted that sets up the new deadline for the implementation of Solvency II – 1 January 2016. This means that both national supervisors and insurance companies have two more years in order to prepare for the new regime. For this purpose, EIOPA issued its Guidelines on preparing for Solvency II that became applicable as of 1 January 2014.

Certain activities such as mortgage loan insurance, agreements on liquidity swaps with banks and direct granting of loans may raise specific concerns. With the implementation of the banking, insurance and financial Directives the European Commission has undertaken initiatives to reinforce capital requirements, accounting rules on consolidations and disclosure requirements. The measures included in Solvency II refer to direct loans to be subject to capital requirements, securities vehicles to be authorised by national supervisor authorities, on-going regulatory requirements on risk management, solvency, governance and reporting.

Box 4: Shadow banking system and liquidity swap transactions

The shadow banking system can broadly be described as credit intermediation that involves entities and activities outside the regular banking system or short non-bank credit intermediation.

These activities usually perform basic functions in the financial system, enhance liquidity in the markets and minimise settlement risks. The volume and size of such transactions have significantly expanded after the financial crisis. It may source the risk of (i) regulatory arbitrage and prudential rules circumvention (capital requirements) and (ii) the building-up of hidden leverage. It might have systemic implications when shocks propagate and amplify through the financial markets due to the interplay between regulated and shadow banking systems.

The insurance sector is included in the shadow banking perimeter as insurance and reinsurance undertakings issue or guarantee credit products or engage in a securities financial transaction.

The secured lending market is a main component of the shadow banking as it includes liquidity swaps transactions which are a type of secured lending. One party, usually the insurer, pledges high-credit quality or highly liquid assets and receives in exchange either less liquid assets (in a securities lending transaction) or cash (in a repo transaction), typically from a bank. Banks on the one hand obtain liquid assets, which they can use to access central banks' financing facilities or to meet regulatory requirements. Insurers, in turn, can obtain higher yields and depending on the maturity of the transaction, enhance their asset-liability management or optimise their liquidity position.

Liquidity swaps are typically bank-driven, either by a related or by an unrelated entity. Risks are both relevant from a microeconomic perspective (such as counterparty, liquidity, concentration and operational risks) and from a macroeconomic perspective. In the latter case transactions can increase the interconnectedness between banks and insurers through their risk transfer potential and spill-over effects in the financial system.

Although the level of this risk differs by country, there is no evidence that the use of liquidity swaps represent a threat to the viability of the European insurance sector overall. Also, many transactions are short-term and therefore not always captured in the annual financial statements or by other type of reporting requirements.

3. The global reinsurance sector[6]

3.1. Market growth

The sector continued its robust growth in 2013, but the outlook remains challenging. Global life reinsurance premiums increased by 2.9% in 2013 whereas the global non-life reinsurance sector was stable in 2013.

Major loss events from natural catastrophes in 2013 compare favourably with previous years. The overall losses and the insured losses caused by global natural disasters declined further in 2013 and are far below the 2012 result. The insured losses fell by more than 50 per cent to USD 31bn (2012: USD 65bn).

Table 1: The 6 largest natural catastrophes (by overall losses) in 2013

Date	Event	Region	Victims	Overall losses USD bn	Insured losses USD bn
30.5-15.6.2013	Floods	Central Europe	25	15.2	3.0
June 2013	Floods	Canada	4	5.7	1.6
27-28.7.2013	Hailstorms	Germany	0	4.8	3.7
8.11.2013	Typhoon, storm surge	Philippines, Vietnam	7354	3.2	1.5
18-20.5.2013	Thunderstorms, Tornado	USA	28	3.1	1.8
18-19.3.2013	Thunderstorms	USA	2	2.2	1.6

Source: Munich Re, NatCatService; Fitch (April 2014)

In 2013 around 49 per cent of the worldwide overall losses and 82.5 per cent (equal to USD 37bn) of the insured losses were caused by natural catastrophes.

The year 2013 was characterised by a quiet hurricane season. Only two windstorms achieved hurricane force (category one) and not a single storm of hurricane strength reached the US mainland. In Europe, however, exceptionally high losses from weather-related catastrophes were reported. These led to an unusual worldwide distribution of the insured losses. In 2013 Europe accounted for nearly 30 per cent of the worldwide insured losses, nearly twice as much compared with the 30-year-average.

The most significant natural catastrophe in Central Europe in terms of overall economic losses was the flooding in southern and eastern Germany and the

[6] Note the data coverage and disclaimer note given in the Appendix which applies to the data presented in this chapter.

neighbouring states at the beginning of June (overall losses totalled USD 15.2bn, and insured losses USD 3bn). Germany was hit again in July and August 2013[7], when a squall line with hailstorms crossed some regions in northern and south-western Germany. The hailstorms in late July alone accounted for USD 4.8bn of overall losses, and USD 3.7bn of insured losses. This was the costliest natural catastrophe for the insurance industry in 2013 and at the same time, the insurance industry´s most expensive hail event in German history. Europe was further hit by severe windstorms in the second half year of 2013. Storms Xaver and Christian each led to overall losses throughout Europe in the low single-digit billion range.

The exceptionally high losses in Europe and at the same time, the dampened losses outside Europe affect the insurance companies differently. Those insurance and reinsurance undertakings, which have a big market share in the regions and line of businesses most affected by the natural catastrophes, will be faced with increased combined ratios. This could be especially true for highly Europe-focused insurers and reinsurers.

3.2. Profitability

The Combined Ratio and the ROE remain broadly unchanged but investment income declined. Underwriting results in 2013 were positive due to a gradual strengthening of premium rates in some key markets. The overall combined ratio hovered around 86 per cent in late 2013[8], compared with 89.3 per cent in 2012. The ROE in 2013 is at 10%, in line with the 10.2% five year average.

However, investment yields declined in 2013 due to historically low interest rates manifesting themselves in a ROI of 3%[9]. At the January 2014 renewals season, the overall picture doesn't seem to have changed significantly, despite the expansion in terms and conditions of reinsurance policies[10]. Overcapacity of reinsurance capital, competitive markets and low investment returns are creating an increasingly price-sensitive demand. For that reason, profitability is expected to remain under pressure.

The overall expectation is that the reinsurance industry will continue to overperform the insurance sector but the risk that some reinsurers might not be able to continue to generate favourable returns is high.

[7] Sigma: Natural catastrophes and man-made disasters in 2013, 1/2014, page 10.
[8] See Fitch Global Reinsurers' 2013 Financial Results, 22nd April 2014
[9] See Swiss Re "Global insurance review 2013 and outlook 2014/2015.
[10] See AON Benfield "Reinsurance market Outlook January 2014, page 3.

3.3. Solvency

Solvency I capital levels of reinsurers continue to be rather high and global reinsurer capital increased at a moderate pace. The worldwide benign catastrophe activity in 2013 intensified the market pressure on rates, especially regarding the catastrophe business. The main reason for the competitive constraints is the further enhanced capital-inflow into the reinsurance market from non-traditional sources. Hedge funds and pension funds invest increasingly in insurance linked securities and collateralised reinsurance. A depressing effect on the rates will be sharpened by the low corporate and sovereign debt yields which will lead investors to deploy capital in the reinsurance segment lines, offering higher yields, raising the overcapacity for catastrophe and other reinsured risks. Global reinsures have maintained strong capitalisation levels in 2013. At the end of the first nine months of 2013 reinsurer capital has reached a new at all-time high of USD 525bn[11]. This corresponds with an increase of 4% since year end 2012. Reinsurance supply remains higher than demand in all global regions.

The excess of capital is making the market highly competitive, restricting the options for profitable investments and eventually threatening the reinsurers' financial position. It is unlikely to be sustainable but if it persists, as projected for 2014, share repurchase strategies might be significantly undertaken.[12] Thus, overall, the reinsurance market saw flat to modestly softening rates in 2013 and at January 2014 renewals. Considerable pressure on rates due to the inflow of alternative capital (USD 45bn by November 2013 or 11% of worldwide catastrophe limits) and rate declines could be observed especially in the US natural catastrophe business. At the January reinsurance policies renewals, the risk adjusted price reduction moved up to 25 per cent on U.S. Property Catastrophe and up to 15 per cent on International Property Catastrophe and between 10% and 15 per cent on typical property catastrophe reinsurance in Europe.[13] As a result, it looks like the overcapacity in the traditional reinsurance industry in combination with the additional capital inflows expected over the next years will continue to drive reinsurers to increase their capital levels and to put downward pressure on pricing, as already evidenced in 2013, with rates significantly declining.

3.4. Insurance-Linked Securities

Strong demand from investors for catastrophe bonds continues its upward trend. The insurance-linked securities (ILS) market saw a very active

[11] See AON Benfield: Reinsurance Market Outlook January 2014, page 4.
[12] See AON Benfield: Reinsurance Market Outlook January 2014, page 4.
[13] See "1st View", Willis Re, January 2014, page 3 and 5. See also See S&P: Past the tipping point: Competition and soft pricing could lead to rating pressure for global reinsures, January 2014, page 3.

year 2013. With an annual issuance volume of USD 7.4bn in 2013 the market reached its highest level since 2007. The total outstanding volume amounted to USD 20.3bn as of end 2013, the highest level in the market's history.[14]

The new record level of catastrophe bonds highlights the recent expansion of the ILS market. The large capital inflows into the ILS market stemmed from existing investors and new investors entering the market through increased commitments to dedicated funds and alternative capital vehicles[15]. Although the capital seems to spill over into other reinsurance lines, the US hurricane risk continued to dominate the market, comprising over 50 per cent of natural catastrophe issuance.

The ILS spread dropped significantly (up to 30 per cent) and is near to reach the reinsurance price levels. Nevertheless the persistent low interest rate environment and the uncertainties in the capital markets continue to attract investors, whose demand for catastrophe bonds remains strong with the effect of depressing the bonds' interest. Furthermore, the investor´s acceptance of indemnity-based triggers has increased in 2013 and along with that the spreads have tightened between indemnity and other trigger types.[16] This will raise the attractiveness of ILS further for sponsors both new and repeat sponsors, which are expected to issue into the ILS market for diversification and to complement overall reinsurance purchases.

The issuance conditions are increasingly driving investment managers to deploy capital in the alternative market. This additional capital has created strong demand from investors for new issuances of new cat bonds (USD 7.64bn in 2013 and of USD 1.5bn early 2014) which have not been sufficient to absorb the excess demand [17].

The ILS market is still a limited and complementary segment of the reinsurance market, but in a slow economic recovery situation continues to gain market share. Despite the fact, that available estimates on the ILS market substantially differ in growth projection, the overall trend is assumed to be positive throughout.[18] It remains to be seen to what extent this excess demand for catastrophic bonds creates a market of risk origination which underprices these risks and passes them on to investors who do not have the means to correctly price these risks and properly include them in their risk management.

---

[14] See AON Benfield: Reinsurance Market Outlook January 2014, page 9.
[15] See Swiss Re "Global insurance review 2013 and outlook 2014/2015, page 18.
[16] See Guy Carpenter: GC Briefing February 2014 and Swiss Re "Global insurance review 2013 and outlook 2014/2015, page 18
[17] See AON Benfield: Insurance-Linked Securities-annual report 2013, page 5 and Artemis: Cat bond investor demand continues to offset secondary seasonality, 18 March 2014.
[18] E.g. Munich Re estimates 4% growth, while Guy Carpenter's estimate is about 15% (see Munich Re: Topics Magazine 2/2012, Page 25 and Guy Carpenter: Mid-year Market Overview September 2013, page 7).

4. The European pension fund sector

Despite a challenging macroeconomic environment, the European occupational pension fund sector has remained stable. Total assets slightly increased in 2013 and investment allocation across the sector remained broadly unchanged. However, low interest rates and longevity risks make traditional defined benefit (DB) plans less affordable for employers and less sustainable for insurers. Overall, DB schemes still represent the larger part of the sector; they provide employees with a guaranteed final pension based on a predefined formula. In most countries, especially in the UK and NL, a clear trend towards defined contribution (DC) schemes can be observed where the risks are transferred to the individual members. Hybrid schemes containing elements from both DB and DC are also introduced.

4.1. Market growth

Total assets owed by occupational pension funds increased by 4.3% in 2013 following growth of 13 per cent in 2012. The European occupational pensions sector is dominated by the UK and the Netherlands which together account for about 86 per cent of the total assets (see Table 2). Cross-country differences are generally driven by the relative share of private and public provision of pensions based on countries' legislations and state supports. Pension funds under Pillar I are not covered by this chapter.

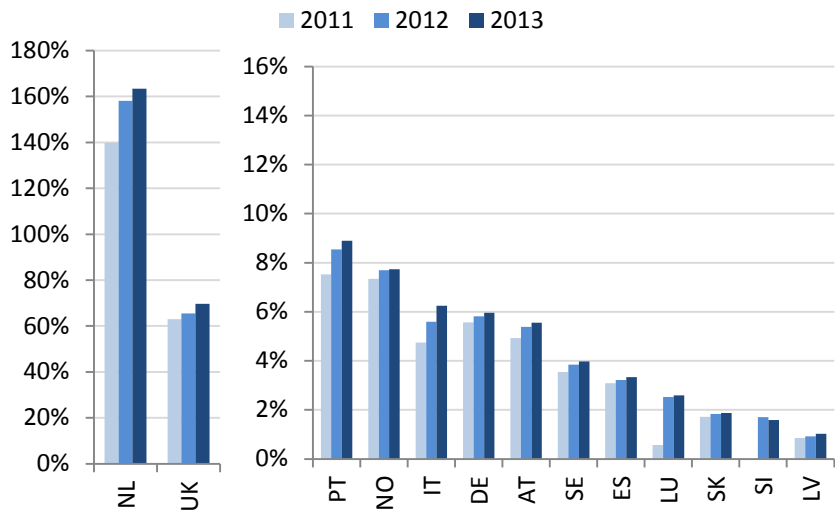
Table 2: Total assets per country as a share of total assets reported (2013)

	NL	DE	IT	ES	NO	AT	SE	PT	LI
49.1%	*36.7%*	*6.1%*	*3.6%*	*1.3%*	*1.1%*	*0.65%*	*0.62%*	*0.55%*	*0.16%*
SK	LU	SI	PL	LV	RO	HR	HU	BG	Total
0.05%	*0.04%*	*0.02%*	*0.02%*	*0.009%*	*0.007%*	*0.002%*	*0.00014%*	*0.000136%*	*100%*

Source: EIOPA
Note: UK figure relate only to Defined Benefit and Hybrid schemes, NL figure for 2013 is based on EIOPA estimates

The penetration rate of the occupational pension fund sector remained relatively stable in 2013. This ratio is calculated as the total size of assets over GDP and gives an indication of the relative wealth accumulated by the sector (Figure 19).

Figure 17 Penetration rates (total assets as % of GDP)



Source: EIOPA
Note: UK figures relate only to DB and HY schemes, NL figure for 2013 is based on an EIOPA estimate; rates for BG, HU, HG and RO are lower than 1%. For LU the penetration rate refer to IORPS under the supervision of the Commissariat aux Assurances.

4.2 Profitability and funding

Investment allocation of pension funds has remained broadly unchanged over the last year. Overall, debt and fixed income securities account for the largest share of investments (the total exposure to sovereign, financial and other bonds adds up to 47 per cent). Equity generally represents a much higher share of investments in the pension fund sector than in the insurance sector (averaging approximately 33 per cent). Such an investment allocation reflects the long-term horizon of pension funds and the intention to benefit from equity premia that are expected in the long-run. It may also be a reflection of strict legal or contractual obligations for pension funds or the result of long-term investment strategies with the aim to maintain a specific and stable asset mix.

Overall exposure to sovereigns decreased slightly in 2013 whereas exposure to financials, other bonds and equity increased somewhat. (Figures 18 and 19). Some countries experienced a slight shift in the investments of DB schemes towards fixed income investments, reflecting the desire to reduce deficit volatility as these schemes mature. In other countries pension funds increased the share of equity in their portfolio, presumably in order to capture greater returns.

Figure 18: Investment allocation (in EUR bn)

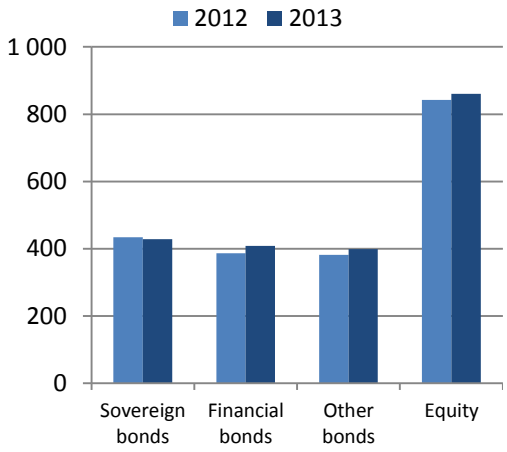
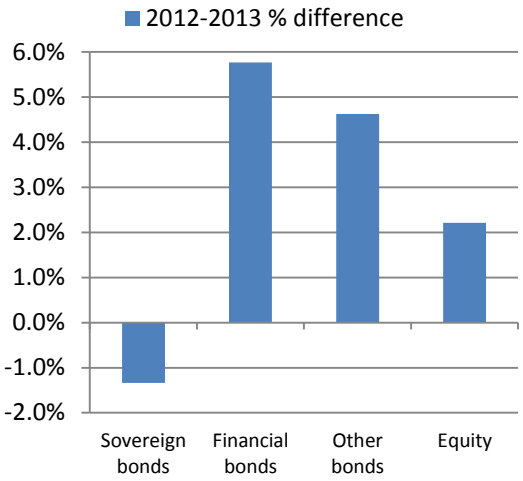


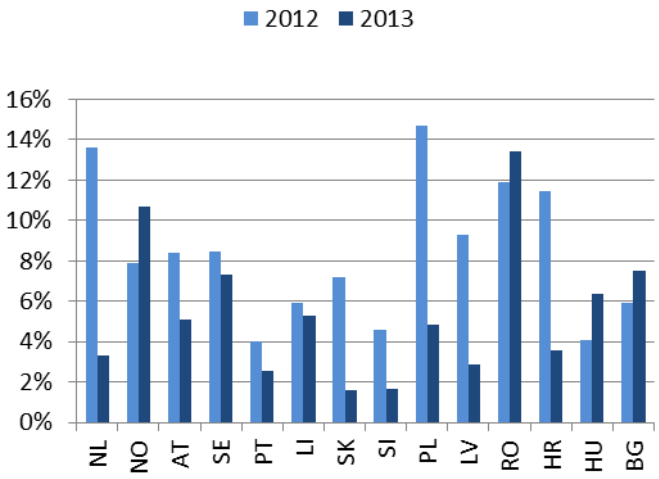
Figure 19: Change in investment allocation in 2013 (in %)



Source: EIOPA

The current low yield environment puts significant pressure on the overall profitability of occupational pension funds. The average ROA in 2013 (unweighted 5.4%, weighted 3.6%) was lower compared to 2012 (unweighted 8.4%, weighted 13 per cent), see Figure 20.[19]

Figure 20: Rate of return on assets



Source: EIOPA

[19] Both the unweighted and weighted average relates to the countries of chart 22. The weighting is based on total assets.

Only a few national authorities reported cover ratios in 2013 that are sufficiently high. (Figure 21). The overall average cover ratio (net assets covering technical provisions/technical provisions for pension) is broadly unchanged in 2013 among the countries concerned.[20]

Figure 21: Cover ratio (in per cent)

Source: EIOPA.
Note: For LU cover ratios refer to IORPS under the supervision of the Commissariat aux Assurances.

[20] Note that due to different calculation methods and legislation, the reported cover ratios are not fully comparable across jurisdictions.

5. Risk assessment

This chapter assesses the risks which were identified in the first chapter and elaborated in the earlier chapters on insurance, reinsurance and occupational pensions.

5.1. Qualitative risk assessment

Qualitative risk assessment is an important part of the overall financial stability framework. EIOPA conducts regular bottom-up surveys among national supervisors to rank the key risks to financial stability for the insurance, as well as for the occupational pension sector. This chapter summarizes the main findings revealed from the survey.

Figure 22 Risk assessment for the insurance sector

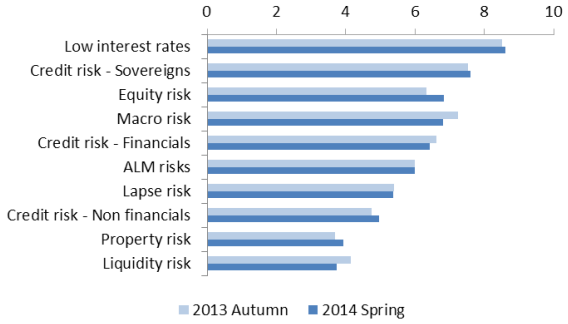
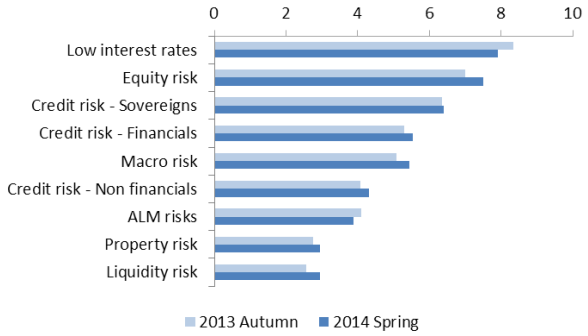
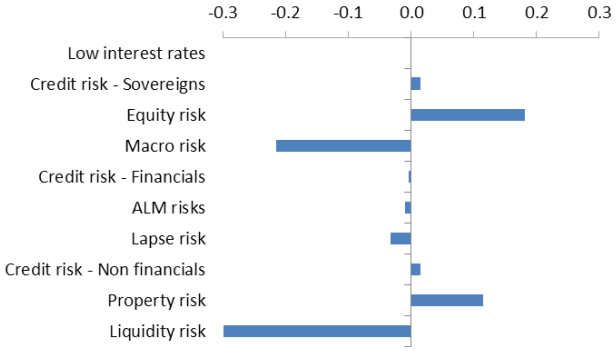


Figure 23 Risk assessment for the pension funds sector



Source: EIOPA
Note: Risks are ranked according to probability of materialisation (from 1 indicating low probability to 4 indicating high probability) and the impact (1 indicating low impact and 4 indicating high impact). The figure shows the aggregation (i.e. probability times impact) of the average scores assigned to each risk.

Figure 24 Supervisory risk assessment for insurance and pension funds – expected future development



Source: EIOPA
Note: EIOPA members indicated, for each risk, their expectation for the future development of these risks. Scores were provided in the range -2 indicating considerable decrease and +2 indicating considerable increase.

Over the last years, the risks stemming from a prolonged period of low interest rates have consistently been ranked as the most important risks faced by the insurance and pension funds sectors. The effect of low interest rates on life insurers, in particular in markets with relatively rigid guarantees, has been discussed in Chapter 1 (and was also extensively discussed in the EIOPA Autumn 2013 Financial Stability Report). Life insurers are reacting to these risks by reshaping the products they offer to policyholders. Several insurers also increased their reserving levels. This extra capital buffer has become mandatory by law in several European countries. Many insurers are also increasing the duration of their bond portfolio. This improves the asset-liability matching gradually (see Figure 25) and leads to a lower duration mismatch (see Figure 26). A ratio of 1 signals no mismatch.

Figure 25 Duration of bond portfolio

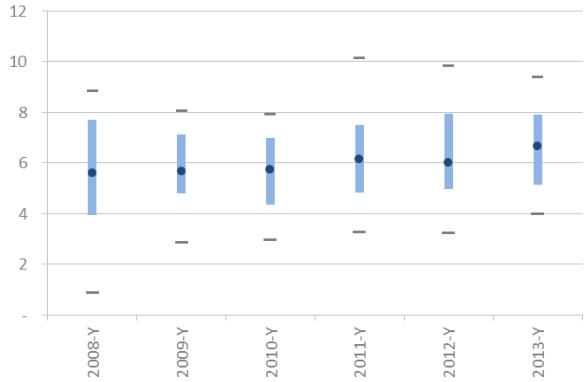
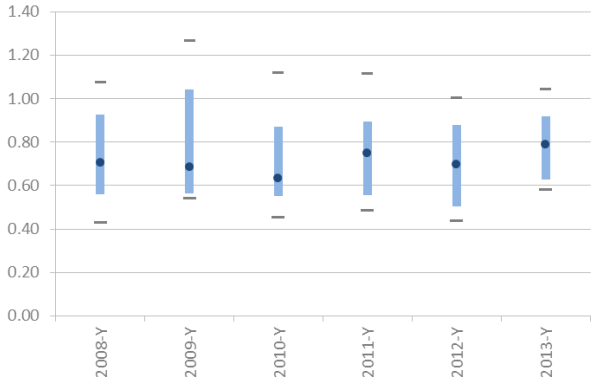


Figure 26 Duration of bond portfolio to duration of technical provisions



Source: EIOPA (sample based on large insurance groups in EU and Switzerland)

Despite improved matching between assets and liabilities, most life and health insurers remain with longer average duration on their liabilities than on their assets. This duration gap is partly due to the lack of suitable long-term investments.

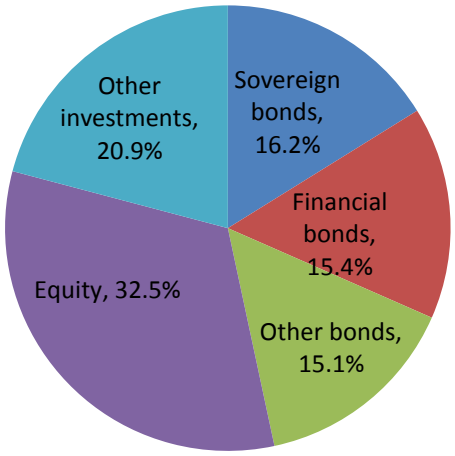
Non-life companies are also exposed to the risks from low interest rates. In particular, a sustained low interest environment will challenge the pricing of non-life insurers which used to rely on investment returns to achieve profit targets and desired return on equity. However, such a business model is difficult to maintain in the current environment. Therefore, non-life insurers need to increase underwriting profitability, and price increases are likely in some markets. If pricing is not changed, the low interest environment could result in a "search for yield".

Macro risks are declining slightly and are expected to improve. However, developments outside the EU also impact macro risks as many large European insurers operate globally. The low growth in insurance volumes in Europe over the last years has led several large European insurers to look for new sources of revenues in Latin America and Asia. Despite some higher risks such as legal and political, industry risk is often seen as lower in emerging markets (especially for

non-life) than in developed ones. According to some research, less competition in emerging markets allowed for higher profit margins.[21] Emerging markets were a welcome opportunity for European insurers although these markets often face less developed institutional frameworks, less stable political environments and financial markets which could eventually have a negative effect on profitability.

Equity risks are increasing in the pension fund sector. Equity is a considerable component of the asset portfolio of pension funds (see Figure 27). National competent authorities in the pension sector are in fact considering the risk of dramatically falling equity prices as almost equally important as the low interest rate environment. Equity risk is now also ranked higher than macro risks by national supervisors. As higher equity price levels may be expected with economic activity picking up and monetary policy remaining supportive, the risk of a setback e.g. due to an intensification of stress in the emerging market countries nevertheless remains. National competent authorities therefore consider that equity risk may increase over the coming six months.

Figure 27 Average composition of the investment portfolio of the European pension fund sector at the end of 2013 (4th quarter)



Source: EIOPA

Credit risks are generally unchanged. Credit risks from exposures towards sovereigns and financial institutions remain some of the key risks for the insurance and pension fund sectors, but have decreased slightly over the last year as credit spreads and CDS spreads have declined. At the same time, credit

[21] See Standard & Poor's (2013): Asia-Pacific Insurers' ERM Continues To Improve, But Staill Lags Behind The More Developed Market, September

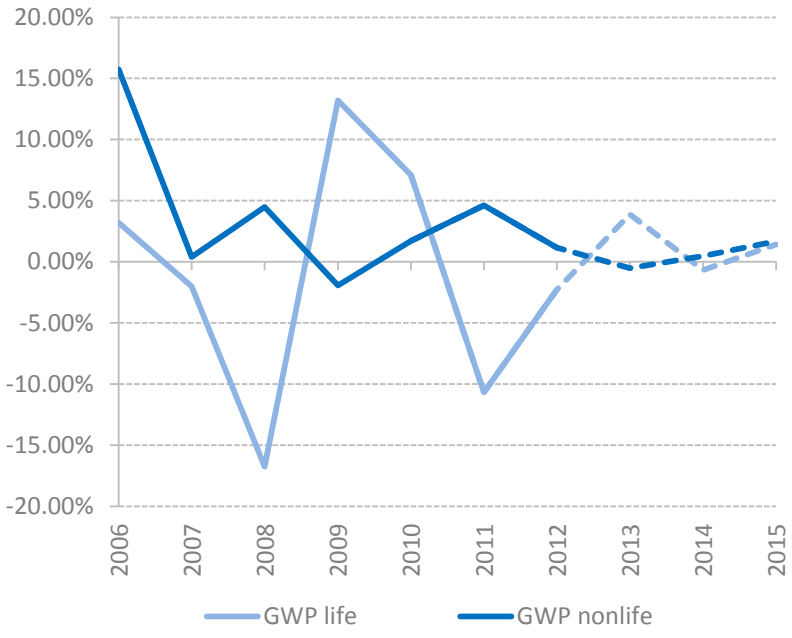
risk from the corporate non-financial sector has increased (see Figure 22 and 23). Although such investments make up a much smaller share of the overall investments (and therefore pose less of a risk), the increase in perceived risk may be a result of increased portfolio weights due to a search for higher yielding assets. Life and non-life insurers responded to the pressure on investment returns by shifting their assets slightly towards high-quality corporate bonds from government bonds.

5.2. Quantitative risk assessment

The key risks identified in the previous chapters are assessed in more detail in the following sections as part of a quantitative financial stability framework EIOPA is developing for the insurance sector. First, growth in written premiums – a key insurance variable – is projected using econometric models. Second, the scale and the drivers behind the expansion of insurers in emerging markets are tested empirically. Finally, using embedded value reports published by large European insurers, the sensitivity of the sector to changes in interest rates and market prices is explored.

Market growth for insurers is expected to be very limited at least until the end of 2015. The latest EIOPA estimates suggest that while growth for non-life insurance reached its turning point in 2013, life insurance will be further negatively affected by the high level of unemployment. Despite the favourable economic outlook, only marginally positive premiums' growth is anticipated in 2015.

Figure 28 GWP projection for the Eurozone

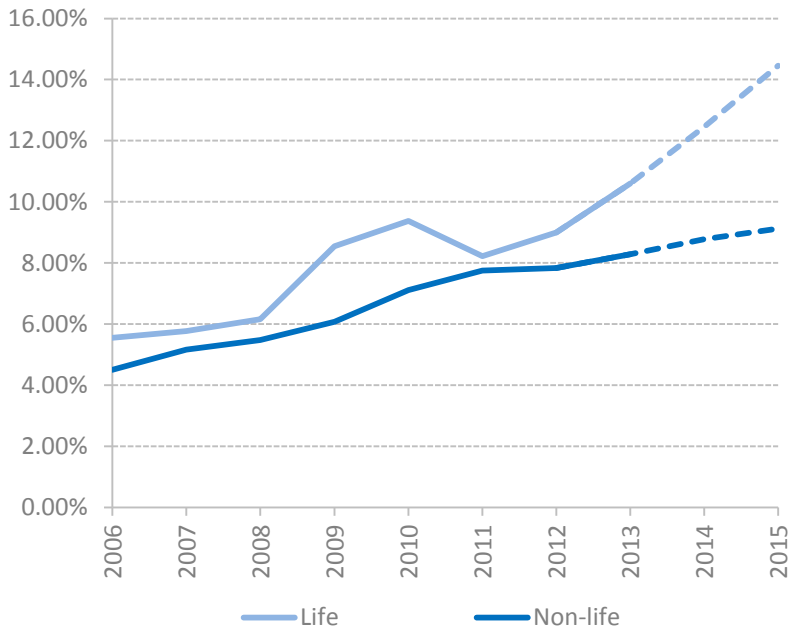


Source: EIOPA and ECB survey of professional forecasters
Note: Data corresponds to aggregates for the Eurozone, dashed lines represent the EIOPA projection using macro scenario based on ECB SPF.

Insurance companies expand outside their national boundaries for new growth opportunities. The focus is particularly on emerging markets with high potential growth opportunities and applies to both life and non-life insurance business. The analysis also suggests that firms are expanding into new markets when economic growth abroad is significantly higher than at home (refer to the thematic article "Insurance and the Macroeconomic Environment" in this report). The empirical analysis also shows that life insurers are active more globally, while non-life insurers are particularly sensitive to growth in Asian markets.

The expected economic recovery will increase insurers' cross-border activities. The latest EIOPA projection employing the IMF's World Economic Outlook suggests a further increase in the share of premiums underwritten abroad. These activities will be raised with the widening gap between domestic and emerging markets' economic growth (refer to Figure 29 and the thematic article "Insurance and the Macroeconomic Environment" in this report).

Figure 29 Share of GWP abroad



Source: EIOPA
Note: Data corresponds to aggregates for EU/EEA countries, dashed lines represent the EIOPA projection using a macro scenario based on the IMF World Economic Outlook.

Box 5: Using embedded value reports to assess insurance sector sensitivities

Embedded Value (EV) is a valuation measure of a firm employed particularly in the life insurance industry. It represents the value of shareholders' interests in the covered business and is defined as a sum of the market value of net assets and the present value of future profits of a firm. It reflects the risks to which a company is exposed by capturing the expected costs of these risks to the company. Incorporated are future profits from existing business only; profits from new policies are not included.

In recent years, the CFO Forum (an industry body comprising the CFO's of Europe's leading insurers) has played a significant role in improving the public disclosure of EV. Most large insurers now publish either Market Consistent Embedded Value (MCEV) reports following the guidance given by the CFO Forum in 2009, or report on European Embedded Values (EEV) based on guidance from 2004.

The two approaches differ somewhat in the approach taken to assess the risk to which the business is exposed and the MCEV is generally seen as more sensitive to market risk. Although this may limit direct comparability, both approaches aim to assess the underlying value of the covered business, and the embedded value reports and the sensitivity analysis therein still offer useful information on the risks faced by insurance companies.

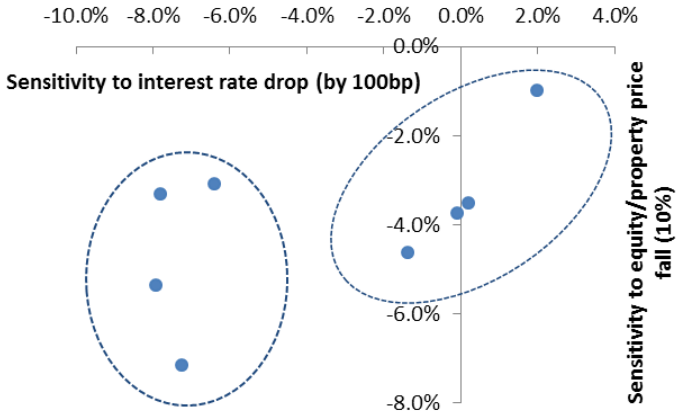
Moreover, the principles published by CFO Forum establish a relatively uniform approach for calculating either MCEV or EEV and set of recommended minimum disclosures which include certain sensitivity analyses. These sensitivity analyses cover changes which may have an important effect on the valuation of the company such as changes in interest rates, a drop in equity and property prices and changes in lapses and mortality rates. The sensitivities are expressed as changes to the embedded value and allow an assessment of the overall sensitivities of the industry and a comparison between companies. EIOPA has collected embedded value reports from 12 large European insurers published between 2008 and 2013 (where available). These reports are used in the quantitative assessment in this chapter.

Embedded value reports show that most insurers are vulnerable to equity price shocks, while sensitivity to reduced interest rates varies. The embedded value reports published by several large European insurers (see Box 5) cover sensitivities changes in interest rates and market prices. In Figure 30, each company is plotted according to the sensitivity of the embedded value to i) a decrease in interest rates by 100 basis points and ii) a decrease in equity and property prices by 10%. The figure seems to identify two main groups of insurance companies.

The first group is highly sensitive to interest rate changes, possibly due to relatively rigid guarantees in the current portfolio. These sensitivities, ranging between 6% and 8% are generally larger than those for declining equity and property prices. Insurers in the second group, on the other hand, are largely insensitive to interest rates developments, but are on average equally sensitive to declines in market prices.

The stress test which will be carried out by EIOPA in 2014 will help to shed further light on the exposure of the insurance sector to these two types of risk.

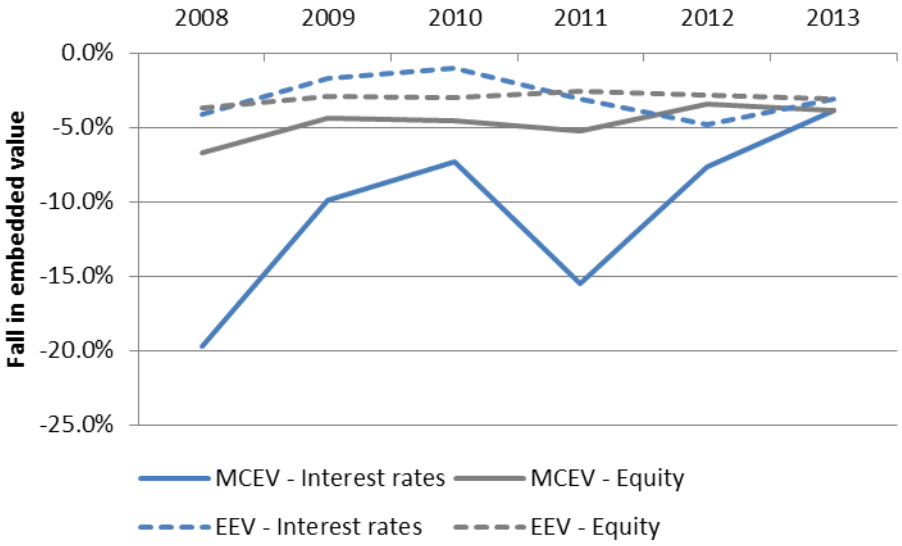
Figure 30: Embedded value sensitivities to interest rate and property price changes in 2013
(x-axis: change in embedded value in % after interest rate drop,
y-axis: change in embedded value in % after equity/property price drop)



Source: Embedded value reports by a set of European insurers and EIOPA calculations. Both market consistent embedded value reports and European embedded value reports are included.

Sensitivity to interest rate risks are decreasing. Both EEV and MCEV reports shows a decreasing sensitivity to interest rate risk between 2012 and 2013. The trend is most apparent in embedded value reports where market consistent valuation is employed (i.e. MCEVs) as they are more sensitive to market risks. In these reports, interest rates sensitivities have been consistently higher than for equity in all the years since 2008. However, following a decline in sensitivity since 2011, the weighted average interest rate sensitivity is now comparable to that for a market price shock. This could partly be explained by lower average guarantees in life insurance as seen in Chapter 1. However, the average decline has to be seen in light of Figure 31 which identified a set of insurers for whom the impact of a further fall in interest rates could still be disruptive. Moreover, national competent authorities indicate that low interest rates still remain the most important risk to insurance companies in the bottom-up surveys carried out among EIOPA members.

Figure 31: Aggregated embedded value sensitivities to interest rate and equity/property shocks between 2008 and 2013. (weighted average by embedded value)



Source: Embedded value reports by a set of European insurers and EIOPA calculations. Both market consistent embedded value reports and European embedded value reports are included. Assumed interest rate drop is 100bp and assumed equity price fall is 10%. Due to lack of data, sensitivities measured by EEV have been estimated for two companies in 2013 to create weighted average values.
Note: Negative sensitivity implies a decline in embedded value.

5.3. Conclusion

The gradual economic recovery in Europe will be positive for both life and non-life insurers. However, our models still predict very weak growth in gross written premiums in both sectors (at least throughout 2015). At the same time, opportunities in emerging markets will continue to be explored, and the share of premiums written in other markets is predicted to increase, in particular in the life sector where companies will react to a widening gap between domestic and emerging markets' economic growth. Finally, embedded value reports published by the major European insurers indicate that the sensitivity to further declines in interest rate is decreasing. However, for some insurers, such a decline could still prove highly disruptive.

PART II - THEMATIC ARTICLES

Insurance and the Macroeconomic Environment

Casper Christophersen and Petr Jakubik[22]

Abstract

Insurance companies play an important role in the financial sector and the availability of insurance products is an essential element of sustainable economic growth. This article analyses the relationship between growth in the insurance sector and key macroeconomic determinants using a European panel data set published by EIOPA. We focus on gross written premiums (GWP) to capture insurance market growth. Our empirical analysis reveals a high GWP persistence as well as a strong link between GWP and economic growth and unemployment. Moreover, the estimated model suggests a higher sensitivity to the macroeconomic environment for life compared to non-life insurance. Finally, there is also empirical evidence that insurers expand their international activities in periods when domestic growth opportunities are low. These findings can be used to underpin a quantitative financial stability framework to assess the potential impact of different macroeconomic scenarios on insurance market growth.

1. Introduction

The recent financial crisis illustrated the inter-linkages between the investment and commercial banking sectors and the real economy, and the channels for contagion into the insurance sector (Nyholm, 2012). The negative spill-overs and risk of bi-directional contagion led to an increased acknowledgement of the importance of the insurance sector for the overall financial stability (e.g. Bakk-Simon *et al.*, 2012). There is therefore a need to develop a quantitative framework which could help regulators to assess the insurance sector under different adverse macroeconomic scenarios. It needs to enable regulators to identify and quantify the relevant transmission channels through which adverse financial macroeconomic scenarios are transferred to the balance sheets of insurance companies and their profit and loss accounts. Growth in gross written premiums (GWP) is among the key insurance variables which are highly correlated with the macroeconomic environment (Faugere and Van Erlach, 2003). For this reason this article is focused on developing a model linking GWP and the macroeconomic environment.

Contrary to banking, quantitative modelling linking macro variables with insurance companies' balance sheets and profit and loss accounts is rather

[22] European Insurance and Occupational Pensions Authority (EIOPA).

scarce. This article contributes to the current literature by exploring those relations empirically using a broad sample of EU member states. While some research studies employing particular country data or even some particular business lines at the national level are available, this study adds to the current literature by employing a wide panel data set of European data collected from national supervisors, and by considering a broader set of macroeconomic indicators as potential explanatory variables. We also empirically test the evidence of expansion of European insurance groups globally, including to emerging markets, as a response to declining economic growth at home.

The remainder of the article is structured as follows. Section 2 provides a review of related studies on the link between insurance business and the macroeconomic environment. Section 3 presents a description of the dataset and some descriptive statistics on the GWP development in EU member states. Section 4 focuses on the econometric methodology which is applied for quantifying the relationship between GWP and the macroeconomic environment. On this basis, we present the results of an econometric model which quantifies this relationship. Finally, the expansion of insurance companies outside their national boundaries is empirically tested. Section 5 summarizes the results with regard to policy implications. The last section concludes.

2. Related Studies

Research studies focusing on the links between the macro-economy and the insurance sector are rather limited and the topic has not been deeply explored by the broader academic community. If there are papers published, this is mostly from regulators who are responsible for the financial stability including the insurance sector.

Bianchi *et al* (2011) investigate the potential growth of the insurance markets in Central, Eastern and Southeastern Europe (CESEE). They estimate insurance premium growth by applying a panel regression (cross-section with fixed effects), where real premium growth is explained by real GDP growth. However, they do not consider other important macroeconomic variables within the modelling framework which could contribute to the insurance market development in the region. The coefficient obtained for GWP is 1.51 which means that with each percentage point of GDP growth, insurance market growth increases by 1.5 % (measured by GWP). They claim that the potential growth of the insurance market in CESEE is closely connected with economic growth in the region.

Feyen *et al* (2011) examine determinants of life and non-life insurance premiums for a panel of 90 countries during the period 2000-08. The results show that premiums are driven by per capita income, the population size and density, demographic structures, income distribution, the size of the public

pension system, state ownership of insurance companies, the availability of private credit and religion. The study further points out that the development of the insurance sector can be influenced by a number of policy variables.

Several other papers focus on the potential for the insurance sector to contribute to economic growth. Arena (2006) tests empirically how insurance market activities (life and non-life) can influence economic growth by using the generalized method of moments for dynamic models of panel data for 56 countries and for years 1976-2004. The results show that both life and non-life insurance have a positive and significant causal effect on economic growth. Although this link is stronger for life insurers in high-income countries, this does not apply to non-life insurers. Similarly, Lee *et al.* (2013) apply a panel regression for 41 countries covering the years 1979–2007. The study reveals a long-run equilibrium relationship between real GDP and real life insurance premiums having allowed for the heterogeneous country effect. The results suggest that an increase of 1% in the real life premium raises the real GDP by 0.06%.

Burcă and Bătrînca (2013) focus on marine insurance and employ ARIMA23 models to estimate and forecast the evolution of GWP for the years 1996-2011 in this particular line of business. It confirms a high persistence of GWP for this segment, but the study does not consider any macroeconomic variables. Using pure time series methods, it is based on a technical rather than a fundamental approach.

Another set of studies focuses on additional important macro-prudential indicators for the insurance sector. Kiesenbauer (2012), for example, investigates the determinants of lapses in the German life insurance industry for different lines of business. Logistic regression models are employed with macro-economic indicators and company characteristics encompassing 133 German life insurers from 1997 to 2009. The findings confirm the strong link between macroeconomic indicators and lapse dynamics. The derived models can be used to predict lapse rates for the different products considered in the article.

3. Data, Stylized Facts and Hypotheses

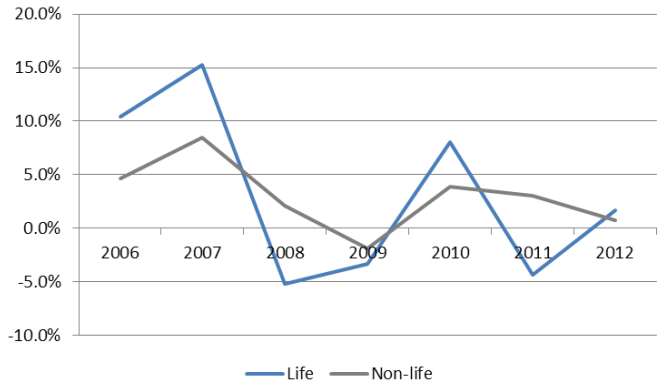
Although evidence remains limited, research is pointing to a positive relationship between insurance growth and general macroeconomic growth. In this study, we employ a dataset for the insurance sector published by EIOPA to shed more light

[23] ARIMA - Autoregressive Integrated Moving Average - a statistical analysis model that uses time series data to predict future trends.

on this topic. The data covers the developments in GWPs in 30 European countries between 2005 and 2012.[24]

Figure A1.1 shows the development in total GWPs over the sample period. The decline in premiums in the life sector following the financial crisis in 2007-2008 is clearly illustrated in the graph, as is the low growth in many countries in the following years with very weak GDP growth and high unemployment.

Figure A1.1: Annual growth in GWP in 30 European countries between 2006 and 2012. Median

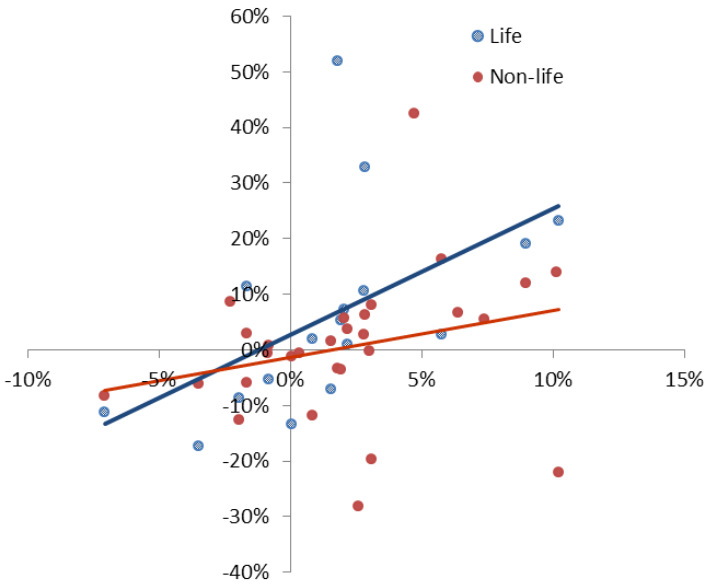


Source: EIOPA, EUROSTAT
Note: Graph covers countries with GWP in life of at least EUR 1 bn.

Naturally, aggregate information may average out important developments in particular economies. Therefore, the link between macroeconomic development and insurance market growth might be better observed by looking at individual countries. Figure A1.2 demonstrates the cross-country heterogeneity in experience in 2012. The partial analysis depicted in the figure seems to point to a relatively strong link between GWP and the gross domestic product (GDP).

[24] The data is available on EIOPA's website and is collected from national supervisors.

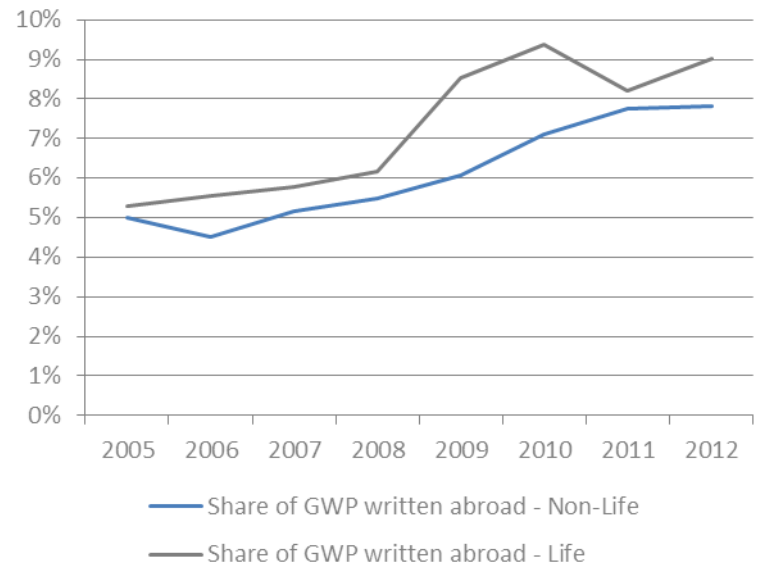
Figure A1.2: Annual growth in GWP in life and non-life (y-axis, in %) vs. growth in nominal GDP in euro (x-axis, in %) in 2012



Source: EIOPA, EUROSTAT
Note: Graph covers countries with GWP in life and non-life (incl. composites) of at least EUR 5 billion

In addition to containing information about total GWPs in one particular country (by all companies there, also foreign), our dataset allows us to split GWPs between GWP written abroad and written at home. This enables us analyse the potential reaction pattern of insurers who face low GDP growth at home, threatening organic business growth. In particular, recent market research and commentary have argued that insurers are currently exploring business opportunities in emerging markets as a response to low growth potential at home. Indeed, Figure A1.3 shows that the average share of GWP abroad has grown from around 5% in 2005 to an average of 8% in non-life and 9% in life in 2012. There is indeed substantial cross-country variation. In our sample, the share of GWP abroad varies between 0% and almost 100% in both the life and non-life sector. However, the time series variation in our dataset allows us to investigate this potential reaction pattern empirically.

Figure A1.3 Share of GWP abroad. Per cent of total GWP. Median of country-level data.



Source: EIOPA

Table A1.1: Employed data set

Variable	Description	Transformation in model	Source	Model
$GWP_{i,t}^{L}$	Total GWP in country *i* on time *t* for the life sector	Log-difference	EIOPA[25]	Model I
$GWP_{i,t}^{NL}$	Total GWP in country *i* on time *t* for the non-life sector	Log-difference	EIOPA	Model I
$GDP_{i,t}^{Nom}$ $GDP_{i,t}^{Real}$	Nominal and real GDP in country *i* on time *t*	Log-difference	Eurostat	Model I (nominal) and II (real)
$U_{i,t}$	Unemployment in country *i* on time *t*	First-difference	Eurostat	Model I
$IR_{i,t}$	Interest rate on long term government bonds as defined in the EU convergence rates	First-difference	Eurostat	Model I
$GWP_{i,t}^{L_{Home}}$	GWP by companies domiciled in country *i* in the home country (*i*) on time *t* in the life sector	Log-difference	EIOPA	Model II

[25] The data on the insurance sector in different countries is available as statistical annexes to the Financial Stability Reports, see https://eiopa.europa.eu/publications/financial-stability/index.html

$GWP_{i,t}^{NL_{Home}}$	GWP by companies domiciled in country *i* in the home country (*i*) on time *t* in the non-life sector	Log-difference	EIOPA	Model II
$GWP_{i,t}^{L_{Abroad}}$	GWP in other countries by companies in country *i* on time *t* in the life sector	Log-difference	EIOPA	Model II
$GWP_{i,t}^{NL_{Abroad}}$	GWP in other countries by companies in country *i* on time *t* in the non-life sector	Log-difference	EIOPA	Model II
GDP_{t}^{Em}	Measure of development in real GDP on time *t* in emerging markets[26]	Percentage change	IMF	Model II

The aim of this study is to empirically test the links between the macroeconomic environment and GWP. As market growth drivers substantially differ for life and non-life insurers, we focus on these two segments separately. Moreover, due to subdued economic growth, insurers are looking for growing opportunities outside their national boundaries (see chapter 1 and 2 in this report). This article tries to find some empirical evidence that companies are expanding abroad when domestic economic growth is significantly lower than in emerging markets.

4. Empirical Analysis

First, we estimate two separate models for each segment. Panel regression techniques on the sample of 29 (life insurance model) and 28 (non-life insurance model) countries are employed to obtain annual models for growth in GWP both for life and non-life insurers. Interest rates, unemployment rates and nominal GDP are considered as potential explanatory variables. Our empirical analysis points out the high persistence of GWP growth both for life and non-life insurers. Hence, dynamic panel regression with fixed effects using the Generalized Method of Moments (GMM) was employed. This approach is able to deal with the endogenity problem and provides unbiased and consistent estimates even though the dataset only spans a period of 8 years. Moreover, cross-section weights were employed to control for the presence of cross-section heteroskedasticity. Due to a short available time series only two lags are allowed for all variables considered.

Logarithmic transformation is applied to GWP and nominal GDP. Then, first differences are applied to all variables considered to ensure their stationarity. GWP variables as well as nominal GDP represent the growth rate. Unemployment and interest rates express the change in unemployment and

[26] 154 countries see the IMF World Economic Outlook 2013.

interest rates respectively. The empirical analysis reveals that dynamic models for GWPs are more suitable than static. Both lags of GDP turn out to be significant for the non-life sector only. The results further suggest that economic growth is the main driver for nonlife insurance premiums growth. Moreover, the results indicate that increasing interest rates effect negatively non-life premiums, probably via the negative impact on financial wealth reducing firms' and households' investments (commercial and residential properties, cars, etc.). On the other hand, the premium growth development for life insurance is not only affected by economic growth, but also largely driven by the situation in the labour market. A two year lagged unemployment rate proves to be a key driver of future insurance premium growth. Moreover, the results suggest that the development in life insurance is more sensitive to the macroeconomic environment than in non-life insurance where growth is more robust as it benefits from many compulsory insurance lines.

Table A1.2: Models for GWP growth for life and non-life insurance

	Dependent variable $GWP^{L}_{i,t}$	Dependent variable $GWP^{NL}_{i,t}$
Constant	-0.011 (0.008)	-0.018*** (0.006)
$GWP^{L}_{i,t-1}$	-0.407*** (0.049)	---
$GWP^{L}_{i,t-2}$	-0.272*** (0.051)	---
$GWP^{NL}_{i,t-1}$	---	-0.197*** (0.060)
$GWP^{NL}_{i,t-2}$	---	-0.128** (0.061)
$GDP^{Nom}_{i,t}$	0.886*** (0.115)	0.753*** (0.117)
$GDP^{Nom}_{i,t-1}$	---	0.245** (0.094)
$GDP^{Nom}_{i,t-2}$	---	0.0449*** (0.088)
$U_{i,t-2}$	-1.511*** (0.402)	
$IR_{i,t}$	---	-0.013*** (0.002)
R-squared	0.642	0.830
Adj. R-squared	0.538	0.775

Source: EIOPA calculations

Note: Standard errors of the respective coefficients are presented in parentheses, stars represent coefficients' significance (<1% ***, <5% **, <10%*), only the variables significant at least at 10% level that were included into the final models.

The remaining part of the empirical analysis is focused on insurers operating globally. We test the hypothesis that insurers move to markets with high market growth opportunities as a response to the weak macroeconomic environment and low domestic growth opportunities. We employ a fixed-effect GMM panel regression where the dependent variable is defined as the growth rate in the ratio between GWP abroad and total premiums (underwritten domestically and abroad). We run two separate models for life and non-life insurance where the dependent variable is explained by the difference between economic growth in emerging and domestic markets (see Table A1.3).

Our results suggest that both life and non-life insurers are expanding their business in emerging markets when growth in those markets is favourable compared to domestic opportunities. This effect seems to be stronger for non-life insurance, whereas some other important determinants not captured by our data set might drive the results for life insurance. Moreover, the results indicate one year lag in response to the growing opportunities for life insurers. On the other hand, non-life insurers tend to react to the gap between emerging market and domestic growth in real time.

Table A1.3: Models for share of GWP underwritten abroad for life and non-life insurance

	Dependent variable: Share of GWP abroad in life insurance $S_{i,t}^{L} = \frac{GWP_{i,t}^{L_{Abroad}}}{GWP_{i,t}^{L_{Home}} + GWP_{i,t}^{L_{Abroad}}}$	**Dependent variable: Share of GWP abroad in non-life insurance** $S_{i,t}^{NL} = \frac{GWP_{i,t}^{NL_{Abroad}}}{GWP_{i,t}^{NL_{Home}} + GWP_{i,t}^{NL_{Abroad}}}$
Constant	0.110** (0.053)	-0.027 (0.105)
$S_{i,t-1}^{L}$	-0.091 (0.092)	---
$S_{i,t-1}^{NL}$	---	-0.316*** (0.107)
$GDP_{t}^{Em} - GDP_{i,t}^{Real}$	-0.063 (0.601)	2.793* (1.467)
$GDP_{t-1}^{Em} - GDP_{i,t-1}^{Real}$	1.203** (0.569)	-0.760 (1.440)
R-squared	0.283	0.290
Adj. R-squared	0.075	0.105

Note: Standard errors of the respective coefficients are presented in parentheses, stars represent coefficients' significance (<1% ***, <5% **, <10%*).

5. Policy Implications

The conducted empirical analysis suggests a strong cyclicality of the insurance business. While non-life business seems to react more strongly to economic growth, the overall link to the macroeconomic development tends to be stronger for life insurance when unemployment is taken into account. Part of the explanation may lay in the compulsory third party liability business lines. Although our models are country-specific, they remain fairly aggregate. However, this research clearly shows that macroeconomic models which reasonably explain premiums developments could be developed, in particular by national supervisors with detailed firm-level information. Such models might be used by regulators as well as insurance companies to test the impact of different macroeconomic scenarios on the balance sheet. It could also help to deviate from the static balance sheet assumption, presently used often in stress test methodologies.

Furthermore, expansion of insurance companies outside their national boundaries, especially to emerging markets, is nowadays often discussed. Due to currently very limited growth opportunities especially in more mature EU markets, insurance companies are expanding to faster growing markets outside Europe. We find empirical evidence for this trend, both for life and non-life insurers. This research suggests that insurers tend to expand their business to markets with higher growth potential. The share of premiums underwritten in emerging markets might significantly increase in the short to medium-run. This trend needs to be carefully monitored by supervisors as insurers might be exposed to new risks in these markets like political or legal risks.

6. Conclusion

The insurance sector is an important part of the financial sector with a substantial impact on the overall financial stability. Hence, the macro-prudential oversight of insurance companies needs to be properly conducted and systemic risk needs to be monitored. Quantitative macro-prudential frameworks need to be built up to capture key risks that might threaten financial stability. In order to arrive at such a framework, projections of the main insurance balance sheet items based on macroeconomic developments have to be available. Understanding premium growth is one important element.

This study elaborates on econometric models linking GWP with key macroeconomic variables. We provide two models that are able to explain GWP growth for life and nonlife insurers. We show that life insurance is more sensitive to the macroeconomic environment than non-life. Our analysis further suggests that the nominal GDP is the key driver for non-life insurance, while unemployment is a driving factor for premium growth on the life side. Such

models could provide a projection of insurance market growth under different macroeconomic scenario and help to assess key risks for the insurance sector.

Finally, our empirical results indicate a positive impact of the difference between emerging markets and domestic economic growth on the share of premiums underwritten abroad. While these growth opportunities seem to impact an insurer's expansion outside its national boundaries with some lag in life sector, non-life insurers tend to respond in real time. Our research offers a framework for testing the strength of these effects.

References

Bakk-Simon, K., Borgioli, S., Giron, C., Hempell, H. S., Maddaloni, A., Recine, F. and Rosati, S. (2012): Shadow banking in the Euro area: an overview, Occasional Paper Series 133, European Central Bank.

Bianchi, T., Korherr, R., Ebner, G. and Ubl, E. (2011): The Austrian Insurance Industry in CESEE: Risks and Opportunities from a Financial Stability Point of View, Financial Stability Report, issue 22, p. 88-106.

Burcă, A., Bătrînca, G. (2013): Application of Autoregressive Models for Forecasting Marine Insurance Market, "Ovidius" University Annals, Economic Sciences Series, vol. 13 (1), pp 1125-1129.

Faugere, Ch., Van Erlach, J. (2003): The Equity Premium: Explained by GDP Growth and Consistent with Portfolio Insurance, Finance 0311004, EconWPA.

Feyen, E., Lester, R. and Rocha, R. (2011): What drives the development of the insurance sector? An empirical analysis based on a panel of developed and developing countries, Policy Research Working Paper Series 5572, The World Bank.

Kiesenbauer, D. (2012): Main Determinants of Lapse in the German Life Insurance Industry, North American Actuarial Journal, vol. 16, issue 1.

Lee, Ch., Lee, Ch. and Chiu, Y. (2013): The link between life insurance activities and economic growth: Some new evidence, Journal of International Money and Finance, Elsevier, vol. 32(C), pages 405-427.

Nyholm, k. (2012): Insurance and Banking Interconnectedness in Europe: The Opinion of Equity markets, Economics Research International, vol. 2012.

Global Systemically Important Insurers

Carlos Guiné[27]

Abstract

This paper addresses the issue of systemic risk in the financial sector and its relevance with regard to insurance activities. The initiatives which followed the 2008 global financial crisis to address the risks posed by Systemically Important Financial Institutions are analyzed, with a focus on the Global Systemically Important Insurers Designation Process and Policy Measures, developed by the International Association of Insurance Supervisors and adopted by the Financial Stability Board in July 2013. The potential consequences of the SIFI project for financial stability, in general, and the Global Systemically Important Insurers framework, in particular, are also discussed. The incentives which are being introduced for the reduction of systemic risk may have unintended consequences, such as an increase of moral hazard and intensified uncertainty. The ongoing work regarding the design, calibration and, in some cases, implementation of such policy measures is, therefore, of capital importance.

1. Introduction

The global financial crisis highlighted the need for public authorities to act in the identification of systemically important financial institutions (SIFIs) and the definition of policy measures aimed at reducing the moral hazard risk as well as the impact of their disorderly failure. Underlying the debate laid the question about the existence of systemic risk and the extent to which it could be addressed through the introduction of additional supervisory measures. The establishment of the Financial Stability Board (FSB), in April 2009, brought new intensity to the debate, leading to the publication of concrete policy recommendations to be introduced in the regulation of financial markets.

The International Association of Insurance Supervisors (IAIS) has been playing an important role in this global initiative. Under the leadership and steering of the FSB, the IAIS has focused on the analysis of the potential systemic relevance of insurers. For this purpose, the IAIS has developed a methodology to assess and ultimately identify global systemically important insurers (G-SIIs), as well as a range of policy measures to be applied to them. The first cohort of G-SIIs has been announced in July 2013. Work is currently proceeding at a fast pace in two fronts: G-SIIs are strongly involved in the implementation of the most immediate measures, whereas the IAIS is pushing for the conclusion of other relevant initiatives such as the development of global capital standards, under challenging timelines.

The remainder of this paper is organized as follows. In Section 2, the definition of systemic risk and its application to insurance is discussed. Section 3 details

[27] European Insurance and Occupational Pensions Authority (EIOPA).

the IAIS G-SII identification methodology. The policy measures which will be applied to G-SIIs are detailed in Section 4. Section 5 explores some of the potential consequences, both positive and negative, of the SIFI and G-SII initiatives to financial stability. Finally, Section 6 presents some conclusions and areas for future work.

2. Systemic Risk in Insurance

The debate regarding the systemic nature of insurance business has been ongoing for many years, with particular intensity in the aftermath of the global financial crisis. The International Monetary Fund (IMF) (2009), in cooperation with the Financial Stability Board (FSB) and the Bank of International Settlements (BIS) developed the working definition of systemic risk as the risk of disruption to the flow of financial services that is (i) caused by an impairment of all or parts of the financial system; and (ii) has the potential to have serious negative consequences for the real economy. The two main components of this definition were furthermore refined. On the one side, it was specified that the impairment of the flow of financial services might include both situations of temporary unavailability of services as well as cases where the cost of these services would register a sharp increase. On the second issue, the clarification was that the relevant impact on the real economy, necessary for an event to be classified as systemic, could take place either through the demand or supply side. From an insurance perspective, the discussion about the topic of systemic risk usually revolves around three different perspectives: the way in which insurers are affected by risks emanating from other parts of the financial sector; the reaction of insurers to these shocks, contributing to their amplification or mitigation; and, finally, the issue of whether insurers can be themselves the source of systemic risk.

The IAIS (2009) suggested that the specificities of the insurance activity should be duly considered when attempting to extend this broad definition to the insurance sector, namely regarding the specificities of underwriting (inverted cycle) and the risk management approach which is adopted (focus on Asset-Liability Matching). Although it is recognized that insurance is a financial sector with significant links to the real economy, it differs from the other financial services by its business model which is based on the transfer of risk to insurers through an "inverted cycle of production". This means that insurance undertakings collect premiums at the inception of the contract, in exchange for the payment of claims which may arise during or after the end of the contract.

Contrary to other financial sectors, insurance business does not significantly depend on debt financing, but insurers are instead large long term institutional investors in the economy. The links to the real economy are therefore present on both sides of their balance sheet, through long term investments on the asset side and by the assumption of underwriting risks recognized as insurance liabilities. Taking into consideration these specificities and the way they could

affect the systemic relevance of insurers, the IAIS proposed the addition of a timing-related fourth sub-element, to complement the three originally developed: size, lack of substitutability and interconnectedness. This would allow the recognition of all potential forms of systemic risk, including that eventually originating from the insurance sector (considered to materialize over longer time horizons, rather than generate immediate shock effects).

Furthermore, IAIS (2011) concluded that insurance activity is different from banking activity and therefore traditional insurance activities were not seen as giving rise to any systemic risk. Only those entities exploring non-traditional or non-insurance activities can be more vulnerable to financial market developments and, therefore, be more likely to amplify or contribute to systemic risk. Examples of such activities are financial guarantee insurance, underwriting of credit default swaps, transactions for non-hedging purposes, derivatives trading or leveraging of assets to enhance investment returns. These views are consistent with the findings of Eling and Pankoke (2012), who conclude that, although insurance companies are less prone to systemic risk and less vulnerable than banks, some non-traditional activities may entail some risk, namely due to the high leverage and implied guarantees associated with them. Baranoff *et al* (2012) also concluded that core insurance activities did not give rise to systemic risk, only derivatives for speculation and mismanagement of short-term investments could give rise to such risks in the insurance sector. Other studies, such as Cummins and Weiss (2011) and Klein (2011), point to similar conclusions. Focusing on the Dutch financial sector, Minderhoud (2003) concluded that systemic risk was particularly important due to the high level of concentration and large cross participations. Another conclusion was that the carrying of life insurance activities by banks might increase systemic risk, possibly due to the common high exposure of life insurers to securities markets.

IAA (2013) highlighted the fact that banking, insurance and financial markets continue to evolve, driven by technology towards greater economies of scale and significantly more complex strategies, tactics and operations. The increase of inter-dependencies in the global markets did not allow to completely exclude the possibility that, in the future, some entities in the insurance sector could be the cause of a systemic risk event. However, there is no unanimity, both in the financial sector and in the academia, that the issue of systemic risk is in any case relevant, and even more so concerning the insurance sector. Black (1995) argued that it is the governmental intervention in the financial markets, by interfering with private contracting, that generates systemic risk in the first place. The subsequent interventions to tackle systemic risk would only contribute to further aggravate the problem. Geneva Association (2010) supported the view that the insurance sector is not source of systemic risk, as the specific business model of insurance undertakings makes them instead a source of financial stability. Furthermore, it was pointed out that, in the very few cases where insurance undertakings experienced serious difficulties during the crisis, this was mainly caused by their quasi-banking business, the main

activities of insurers and reinsurers do not pose any systemic risk. Only non-core insurance activities, such as derivatives trading, could be seen as giving rise to systemic risk.

3. G-SII Designation Process

The IAIS was called to support the global initiative of the identification of global systemically important financial institutions (G-SIFIs), under the coordination of the Financial Stability Board (FSB) and the G20, with focus in the field of insurance. The FSB explicitly stated the intention to extend the G-SIFI framework to cover insurance companies (FSB (2010)), mandating the IAIS to complete its assessment methodology for the identification of G-SIIs by 2013 (FSB (2011)). In this context, the IAIS developed an assessment methodology to identify insurance-dominated financial conglomerates whose distress or disorderly failure due to its size, complexity and/or interconnectedness could generate systemic risk. Hence, the working definition of G-SIIs which was adopted by IAIS was in line with the FSB's definition of G-SIFIs. The IAIS methodology was published in July 2013 (IAIS 2013a), in parallel with the FSB's publication of the first cohort of designated G-SIIs (FSB (2013)). The initial IAIS assessment methodology was developed with the support of a data collection exercise, using year-end 2011 data from selected insurers. Data was collected on a group level for 50 insurers in 14 jurisdictions on the following criteria:

- Insurance groups with total assets of USD 60 billion or more and a ratio of premiums from jurisdictions outside the home jurisdiction to total premiums of 5% or more;
- Insurance groups with total assets of USD 200 billion or more and a ratio of premiums from jurisdictions outside the home jurisdiction to total premiums between 0% and 5%;
- It also entailed insurers that were added by supervisors such as e.g. financial guarantee insurers.

According to the indicator approach, the IAIS defined selected indicators grouped into five categories: Size; Global Activity; Interconnectedness; Non-Traditional and Non-Insurance Activities; and, Substitutability. A total of 20 indicators were defined, aiming to capture the systemic importance of each insurer from a multitude of dimensions. To arrive at a final score for each insurer, weights were assigned to each category, as detailed in Table A2.1. After having the scores for all entities in the sample, they were ranked in descending order of systemic relevant, and a cut-off point was defined.

Table A2.1: Weights given to each category and individual indicator in IAIS indicator-based approach

Category	Category weighting	Individual indicator
Size	5%	Total assets
		Total revenues
Global activity	5%	Revenues derived outside of home country
		Number of countries
Interconnectedness	40%	Intra-financial assets
		Intra-financial liabilities
		Reinsurance
		Derivatives
		Large exposures
		Turnover
		Level 3 assets
Non-traditional insurance and non-insurance activities	45%	Non-policy holder liabilities and non-insurance revenues
		Derivatives trading
		Short term funding
		Financial guarantees
		Minimum guarantee on variable insurance products
		Intra-group commitments
		Liability liquidity
Substitutability	5%	Premiums for specific business lines

The indicator-based approach was subsequently complemented by an Insurance and Financial Stability (IFS) assessment approach. This consisted of a segmentation of the business portfolio into its traditional insurance, semi- and non-traditional components, as well as non-insurance financial and industrial activities. Then, risk weights were defined for each of the segments, consistently with IAIS stated position that the systemic importance of insurance is mainly associated the conduct of non-insurance financial and non-traditional insurance activities (IAIS (2011)). To arrive at a final score, these risk weights were multiplied by the assets of insurers, broken down according to the same segmentation. The indicator-based and the IFS assessment approaches were then complemented by a supervisory judgment and validation process, to ensure the overall methodology could produce a more robust assessment of the systemic importance of insurers. The IAIS envisages revisiting the assessment methodology, as a minimum, every three years, to reflect changes in the insurance markets and overall economy.

4. G-SII Policy Measures

On 18 July 2013, the FSB (2013) has formally announced the list of the first 9 G-SIIs based on the methodology described in the previous section. Already at its Summit meeting in Seoul, in November 2010, the G20 leaders had endorsed the FSB's framework for reducing the moral hazard posed by systemically important financial institutions. According to IAIS (2013a), this framework included several policies, focusing on the application of more intensive and coordinated supervision, increasing the ability to resolve SIFIs in an orderly manner, requiring higher loss absorbency to reflect the greater risks that these institutions pose to the global financial system, strengthening the core financial infrastructures and providing other requirements required by national authorities.

In line with this general statement, the IAIS (2013b) published in parallel the list of policy measures applicable to them:

- The application of the recovery and resolution planning requirements, defined under the FSB's Key Attributes[28], namely the establishment of Crisis Management Groups (which should carry out resolvability assessments), the development of Recovery and Resolution Plans including liquidity risk management plans and, finally, the development of institution-specific cross-border cooperation agreements among relevant resolution authorities;
- Enhanced group-wide supervision, including direct powers of the group-wide supervisor over holding companies and the oversight by this supervisor of the development and implementation of a Systemic Risk Management Plan;
- Higher loss absorbency requirements for non-traditional and non-insurance activities, which should be met by the highest quality capital. Given the absence of a global insurance capital standard, on the basis of which this measure could be applied, the IAIS was mandated to develop straightforward, backstop capital requirements for all group activities, including non-insurance subsidiaries.

The main objectives of these measures are the reduction of the moral hazard and the internalization of the externalities created by the possibility of disorderly failure of G-SIIs. They are expected to reduce the probability and impact of such failures and create incentives for the reduction of the systemic risk of G-SIIs.

[28] FSB Key Attributes of Effective Resolution Regimes for Financial Institutions, https://www.financialstabilityboard.org/publications/r_111104cc.pdf

5. Consequences for Financial Stability

The generally agreed assumption underlying the development of the SIFI framework, in general, and the G-SII framework, in particular, is that by enhancing supervision of very large financial entities and introducing policy measures to tackle systemic risk, financial stability will be reinforced. On the one side, the increased cooperation and articulation among supervisors will augment their preparedness to deal with potential issues affecting systemically important institutions, decreasing the risk of their disorderly failure and the consequences thereof to the real economy. Another point to consider, more specifically in the case of G-SIIs, is the fact that the introduction of global capital standards will likely increase comparability and reduce the potential for arbitrage between different jurisdictions. This is clearly highlighted, for example, by the FSB (2013), by stating that financial stability would be supported by a sound capital and supervisory framework for the insurance sector. The introduction of the IAIS policy measures was also positive in the sense that it brought supervisors together to discuss and address the practical issues related to supervision and resolution of large cross-border insurance groups, as well as to identify the necessary powers to allow its full implementation.

However, the introduction of the SIFI framework also has the potential to introduce risks to financial stability, which should not be overlooked. It should also be noted that the designation of one institution as G-SII may reinforce its perception as being "*too big to fail*" and therefore more likely to be supported by the governments in case they face problems (FSB, 2010). There is ample literature analysing the moral hazard problem and the multiple ways in which it can manifest in the broader financial sector and, more specifically, in the insurance sector, such as Ötker *et al* (2011), Kim (2011), Okura (2013) and Demange (2008). If the perception, by the general public, of the "increased safety" of these entities overcomes the negative impact of the competitive disadvantages introduced by the policy measures, it may also generate unintended consequences, leading to an additional growth of such entities which would even reinforce their systemic importance. This risk calls for the development of adequate and well thought policy measures, as well as close monitoring following its implementation. This leads to another risk which should be considered, the fact that the implementation of the G-SII policy measures encompasses the introduction of very significant innovations in the global supervisory and regulatory frameworks. The very short timeframe which has been defined for their development may generate risks related to the accuracy and effectiveness of the measures, in case sufficient resources are not allocated to the project. All efforts need to be developed to ensure that the policy measures, once implemented, introduce positive incentives that lead the identified G-SIIs to reduce their systemic importance, and deter other IAIGs from evolving to become G-SIIs.

Finally, it should be noted that, although the designation of G-SIIs reduced the market uncertainty about which insurance groups would be identified, there is

still a very high lack of clarity concerning what will be the complete package of policy measures which will be applied to them and the impact it will generate. Higher loss absorbency and the insurance capital standard, for example, can be among the measures with greater impact, but will only be finalized by 2015 and 2016, respectively, and implemented from 2019 onwards. Uncertainty is, by definition, not a positive element in the context of financial markets. Its maintenance may lead to undesirable behaviours and consequences, which in turn create additional risks or amplify existing ones.

6. Conclusion

Systemic risk has been defined as the risk that has the potential to have serious negative consequences to the real economy. In the context of the global financial crisis, supervisors faced the materialization of systemic risk events with relevant impact on the global economy. The subsequent analysis allowed the identification of supervisory and regulatory weaknesses which permitted the build-up of such risks and, in some cases, even contributed to their amplification. In this context, a global initiative to reduce the risk posed by Systemically Important Financial Institutions has been initiated by the G20 through the FSB. After tackling the most pressing issues affecting the banking sector, the focus has now largely turned to the insurance sector. Under the mandate of the FSB, the IAIS has developed a designation methodology to identify G-SIIs, as well as a package of supervisory measures which will apply to them. Following the designation and publication of the initial cohort of 9 G-SIIs, in the summer of 2013, intense work is underway both by G-SIIs and supervisors, to fulfil the demanding requirements within the very tight timelines allowed.

Whereas the underlying assumption embedded in the G-SII work is that the initiative will contribute to the mitigation of systemic risks, there is still a significant uncertainty about the overall impact of the proposed measures. The magnitude of the work under way, the innovative character of some of the measures and the limited amount of time to complete them are among the main causes of this uncertainty. For this reason, in order to avoid the repetition of the errors of the past and their consequences to the global economy, it is of paramount importance that insurance supervisors around the world work together to ensure the delivery of a high quality set of measures, as well as their effective implementation. Only time will allow an assessment of the success of the G-SII initiative in terms of enhancing global financial stability but, as of today, it can already be classified as one of the most relevant projects of the last decades in the field of insurance at worldwide level, which will continue to dominate the international regulatory and supervisory agendas for the years to come. The natural extension of this work is the analysis, as G-SII policy measures are implemented in the near future, of their impacts and success in contributing to the mitigation of systemic risk in the insurance sector.

References

[1] Baranoff, Etti G.; Haefeli, Daniel; Liedtke, Patrick M. and Schmaltz, Christian (2012); The Identification of Systemically Important Financial Institutions (SIFIs) in the Insurance Industry: An Activities-Based Methodology; Journal of Insurance Regulation; Winter 2012; Vol. 31, p. 59

[2] Black, Fisher (1995); Hedging, speculation, and systemic risk; Journal of Derivatives 2:6-8

[3] Cummins, J. D. and Weiss, M. A. (2011); Systemic risk and the U.S. insurance sector; Working paper; Temple University; Philadelphia; PA

[4] Demange, Gabrielle (2008); Sharing aggregate risks under moral hazard; Paris School of Economics; Working Paper n. 2008 – 27; http://halshs.archives-ouvertes.fr/docs/00/58/67/39/PDF/wp200827.pdf

[5] Eling, Martin and Pankoke, David (2012); Systemic risk in the insurance sector – What do we know?; Institut für Versicherungswirtschaft; Working papers on finance no. 2012/22; October 2012

[6] FSB – Financial Stability Board (2010); Reducing the moral hazard posed by systemically important financial institutions; http://www.financialstabilityboard.org/publications/r_101111a.pdf

[7] FSB - Financial Stability Board (2011); Policy Measures to Address Systemically Important Financial Institutions; http://www.financialstabilityboard.org/publications/r_111104bb.pdf

[8] FSB - Financial Stability Board (2013); Global systemically important insurers (G-SIIs) and the policy measures that will apply to them; https://www.financialstabilityboard.org/publications/r_130718.pdf

[9] Geneva Association (2010); Systemic Risk in Insurance – An Analysis of Insurance and Financial Stability; https://www.genevaassociation.org/media/99228/ga2010-systemic_risk_in_insurance.pdf

[10] IAA – International Actuarial Association (2013); Actuarial viewpoints on and roles in systemic risk regulation in insurance markets; http://www.actuaries.org/CTTEES_INSREG/Documents/IAASystemicRiskRegulationPaper_Final_May2013.pdf

[11] IAIS – International Association of Insurance Supervisors (2009); Systemic Risk and the Insurance Sector; http://iaisweb.org/__temp/Note_on_systemic_risk_and_the_insurance_sector.pdf

[12] IAIS – International Association of Insurance Supervisors (2011); Insurance and Financial Stability; http://www.iaisweb.org/__temp/Insurance_and_financial_stability.pdf

[13] IAIS – International Association of Insurance Supervisors (2013a); Global Systemically Important Insurers: Initial Assessment Methodology; http://www.iaisweb.org/view/element_href.cfm?src=1/19151.pdf

[14] IAIS - International Association of Insurance Supervisors (2013b); Global Systemically Important Insurers: Policy Measures; http://www.iaisweb.org/view/element_href.cfm?src=1/19150.pdf

[15] IMF – International Monetary Fund (2009); Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations (October); http://www.imf.org/external/np/g20/pdf/100109.pdf

[16] Kim, Young-Han (2011); International policy coordination mechanism with respect to the moral hazards of financial intermediaries; Economic Modelling; Elsevier; Volume 28, Issue 4, Pages 1455-2074 (July 2011)

[17] Klein, R. W. (2011); Insurance market regulation: Catastrophe risk, competition and systemic risk; Working paper; Georgia State University; Atlanta; GA.

[18] Minderhoud, Koen (2003); Systemic risk in the Dutch financial sector; De Nederlandsche Bank; MEB Serie no. 2003-17; December 2003

[19] Okura, Mahito (2013); The relationship between moral hazard and insurance fraud; Journal of Risk Finance, The; Vol. 14, Iss: 2, pp.120 - 128

[20] Ötker, Inci ; Narain, Aditya ; Ilyina, Anna ; Surti, Jay (2011); The Too-Important-to-Fail Conundrum: Impossible to Ignore and Difficult to Resolve; IMF Staff Discussion Note; May 2011; http://www.imf.org/external/pubs/ft/sdn/2011/sdn1112.pdf

Appendix

Data coverage and disclaimer - The insurance sector

EIOPA collects consolidated figures from 32 large insurance groups.[29] The data is provided by undertakings through the national supervisory authorities on a best effort basis. This means that the data is not subject to internal or external audit. Although effort is made to keep the sample for each indicator as representative as possible, the sample may vary slightly over time. As data is provided on an anonymous basis, it is not possible to track the developments on a consistent sample. EIOPA also collects EU/EEA-wide statistics on country level. This data is collected annually and published as statistical annexes together with the Financial Stability Report. The data is used in figures which present developments in individual countries.

Data coverage and disclaimer - The reinsurance sector

The section is based on information released in the annual and quarterly reports of the largest European reinsurance groups. The global and European market overview is based on publicly available reports, forecasts and quarterly updates of rating agencies and other research and consulting studies.

Data coverage and disclaimer – The pension fund sector

The section on pension funds highlights the main developments that occurred in the European occupational pension fund sector, based on feedback provided by EIOPA Members. Not all EU countries are covered, in some of them IORPs (i.e. occupational pension funds falling under the scope of the EU IORPs Directive) are still non-existent or are just starting to be established. Furthermore, in other countries the main part of occupational retirement provisions is treated as a line of insurance business respectively held by life insurers, and is therefore also not covered. The country coverage is 61% (19 out of 31 countries).[30]

Data collected for 2013 was provided to EIOPA with an approximate view of the financial position of IORPs during the covered period. Several countries are in the process of collecting data and in some cases 2013 figures are incomplete or based on estimates which may be subject to major revisions in the coming months. In addition, the main valuation method applied by each country varies due to different accounting principles applied across the EU[31]. Moreover, data availability varies substantially among the various Member States, which

[29] The list of insurance groups is available in the background notes for the risk dashboard published on https://eiopa.europa.eu/publications/financial-stability/index.html.
[30] Countries that participated in the survey: AT, BG, HR, DE, ES, HU, IT, LI, LU, LV, NL, NO, PL, PT, RO, SE, SI, SK and the UK.
[31] Main valuation method is based on market value (16 countries), but other valuation methods are also used (2 countries).

hampers a thorough analysis and comparison of the pension market developments between Member States.

Country abbreviations

AT	Austria	IT	Italy
BE	Belgium	LI	Liechtenstein
BG	Bulgaria	LT	Lithuania
CY	Cyprus	LU	Luxembourg
CZ	Czech Republic	LV	Latvia
DE	Germany	MT	Malta
DK	Denmark	NL	Netherlands
EE	Estonia	NO	Norway
ES	Spain	PL	Poland
FI	Finland	PT	Portugal
FR	France	RO	Romania
GR	Greece	SE	Sweden
HR	Croatia	SI	Slovenia
HU	Hungary	SK	Slovakia
IE	Ireland	UK	United Kingdom
IS	Iceland	CH	Switzerland