

FINANCIAL STABILITY REPORT

July 2020

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FOREWORD BY THE CHAIRMAN



The Covid-19 outbreak further highlighted the importance of the Solvency II regulatory framework. On the one hand, the market-consistent and risk based approach helps insurers to better align capital to risk, build-up resilience and enhance the risk management practices. On the other hand, the adjustments included for long-term guarantees allow to partially mitigate market volatility associated with the Covid-19 outbreak reflected in own funds and/or solvency capital requirements.

A **solid and comfortable capital buffer** helped insurers to withstand the initial severe market shocks experienced with the Covid-19 crisis. However, a high level of **uncertainty** on the magnitude of economic disruption and further dissemination of the virus threatening health of European citizens increases downside risks looking ahead. The **prolonged low yield environment** has already been a fundamental risk for both insurance and pension sectors and the Covid-19 outbreak further increased its potential. The forthcoming recession will negatively affect corporate sector profitability, resulting in **rating downgrades**, increased defaults and unemployment. In addition, **commercial real estate prices are expected to drop** by adopting more extensively a work from home arrangement by firms. Finally, a high interconnectedness of insurers with banks could further support **spill-overs of mentioned risks from the real sector to insurers and pension funds**.

Strains to demand and insurers' underwriting profitability might take some time to unfold in parallel with the deterioration of the macroeconomic environment. In addition, some insurers run the risk of becoming involved in lengthy and costly legal battles in relation to claims occurred as a consequence of the lock down measures. To preserve solvency, **it is important that there is no retroactivity** implying that insurers face claims that they did not cover. All these factors might lead to materialisation of the risks on insurers' balance sheet with a substantial lag and high uncertainties.

From the outset of the pandemic, EIOPA has been working closely with national competent authorities to ensure business continuity, financial stability and consumer protection. Measures, such as **recommendations on supervisory flexibility** regarding deadlines of reporting and public disclosure are aimed to help insurers continuing to serve their customers. Furthermore, given the overall uncertainty of the scale and duration of the crisis, EIOPA has urged insurers and pension funds to adopt a prudent approach and mitigate the impact of Covid-19, for example by temporarily suspending all discretionary dividend distributions and share buy backs, with the objective **to preserve capital and contribute to financial stability**. Finally, to ensure continuing **fair treatments of customers**, EIOPA has asked insurers to identify their products affected as a result of Covid-19 and consider proportionate remedial measures in cases in which there are possible unfair treatment of customers.

The Solvency II regime has some layers of flexibility. If the crisis deepens and if there will be a significant number of companies in difficulty, **EIOPA is prepared to issue a declaration of adverse developments**. This measure will allow national authorities to extend the recovery period, providing insurers more time to rebuild capital levels if needed. Recovery plans need to be assessed and granted consistently across countries.

There is no doubt that the economy will experience a deep and unprecedented recession. **The high uncertainty on the recovery path needs to be captured by an appropriate forward-looking risk assessment.** In this respect, different recovery scenarios should be captured in the design of next year's European Union-wide insurance stress test.

A handwritten signature in blue ink, appearing to read 'Gabriel Bernardino', written in a cursive style.

Gabriel Bernardino

EXECUTIVE SUMMARY

The unexpected Covid-19 virus outbreak led European countries to lockdown major part of their economies, aiming at containing the outbreak. Financial markets experienced huge losses and flight-to-quality investment behaviour. Governments and central banks committed on the provision of significant emergency packages to support the economy, as the economic and financial shock is expected to challenge economic growth, labour market and the consumer sentiment across Europe for an uncertain period of time.

Solid solvency ratios for insurers and improved asset valuations for 2019, supported by the increase in equity prices and decline in yields, provided a buffer to withstand the impact of the macro-financial shock on the sector. As of year-end 2019 the insurance sector was well capitalised with a median SCR ratio of 213%. Regarding the reinsurance sector, catastrophe activity in 2019 was benign with global insured losses below the average of the last 10 years, supporting the increase of 22 percentage points, to 240%, in the solvency ratio as compared to Q4-2018. Investment and underwriting profitability remained broadly unchanged in 2019, however considerable pressures is expected from Covid-19 shock.

Following a positive year for European IORPs with positive investment returns, substantial increases in asset market values and resulting improved cover ratios, the sector has been heavily affected by the market turmoil in the wake of the Covid-19 pandemic, which swept away substantial value gains of 2019. Due to the character of the crisis, IORPs may not only face further market volatility and impairment of market values in a persistent low interest rate environment, yet may be subject to funding and liquidity concerns due to suspended or lowered contributions from sponsors and members. Sponsoring undertakings in heavily affected sectors by the Covid-19 pandemic are expected to be in significant financial distress and correspondingly, members of such pension funds are at risk of unemployment in the near future. Sponsoring undertakings' financial difficulties to maintain contributions, or in the worst case, sponsoring undertaking' insolvency may test national pension protection schemes. The set-up, structures and design of such pension protection schemes are heterogeneous amongst Member States and the potential need to use such pension protection schemes may require supervisory attention. Further, substantially declining coverage and funding ratios of Defined Benefit IORPs require supervisory monitoring and potential actions, which usually entail setting up recovery plans and close coordination with the NCAs. The impacts of the Covid-19 crisis may lead to benefit cuts for members and/or require sponsoring undertakings to finance funding gaps with potential additional pressure on the real economy and on financial institutions sponsoring an IORP.

The prolonged low yield environment has already been a fundamental risk for the insurance sector, and the Covid-19 shock increased its potential. The shock has also increased credit risk, which could challenge the asset side valuations of insurers and their solvency positions. In fact, the negative macroeconomic outlook could have an adverse impact on corporates' profitability, resulting in higher risk of rating downgrades. Furthermore, home bias behaviour and interconnectedness with other sectors hit by the shock, in particular banking and domestic sovereign, could further amplify the risk for insurers. In terms of insurance risks, the ambiguity regarding the coverage of virus related claims

could result in an increase in litigation for insurers. Finally, confinement measures resulted in working from home arrangement, which increased cyber risk and further highlighted the importance of a reliable cyber risk insurance market.

EIOPA conducted a qualitative questionnaire among national competent authorities, in order to assess the materiality of risks stemming from the Covid-19 shock to the financial stability of the insurance sector. Results reveal that profitability of investment portfolio, solvency position, exposure to banks, underwriting profitability, concentration to domestic sovereign and cyber risk are the top six key risks and challenges in terms of materiality for insurers.

Amid the challenging environment due to the Covid-19 shock EIOPA and national supervisory authorities are working in close cooperation and took actions to help insurers to focus on ensuring business continuity to serve their customers. Various measures have been put in force in a harmonised way across European markets aiming at ensuring operational relief towards insurance undertakings. Extensions of reporting deadlines, suspension of non-essential ongoing inspections, delays in the entry into force of national regulatory initiatives and postponement of non-essential policy initiatives are some of the measures taken by countries to support insurers to focus on their main business operations. On the capital side, cancellation and/or reduction of dividends pay-outs, following the EIOPA statement requesting (re)insurers to suspend all discretionary dividend distributions and share buy backs aimed at remunerating shareholders, is another measure taken by many countries.

The report consists of two parts – the standard part and the thematic article section. The standard part is structured as in previous versions of the EIOPA Financial Stability Report. The first chapter discusses the key risks identified for the insurance and occupational pension fund sector. The second, third and fourth chapter elaborate on these risks covering all sectors (insurance, reinsurance and pension). The fifth chapter provides a more in-depth qualitative and quantitative assessment of the risks identified. Finally, there are two thematic articles provided in this report. The first one discusses the EU sustainable finance taxonomy from the perspective of the insurance and reinsurance sector. The second one empirically assesses the impact of EIOPA statement on insurers' dividends using an event study methodology applied to the European insurers' equity market.

PART I

1. KEY DEVELOPMENTS

The unexpected COVID-19 virus outbreak led European countries to shut down major part of their economies aiming at containing the outbreak. Financial markets experienced huge losses and flight-to-quality investment behaviour. Governments and central banks committed to the provision of significant emergency packages to support the economy, as the economic shock, caused by demand and supply disruptions accompanied by its reflection to the financial markets, is expected to challenge economic growth, labour market and the consumer sentiment across Europe for an uncertain period of time.

Amid an unprecedented downward shift of interest rate curves during March, reflecting the flight-to-quality behaviour, credit spreads of corporates and sovereigns increased for riskier assets, leading effectively to a double-hit scenario. Equity markets dramatically dropped showing extreme levels of volatility responding to the uncertainties on virus effects and on the status of government and central banks support programs and their effectiveness. Despite the stressed market environment, there were signs of improvement following the announcements of the support packages and during the course of the initiatives of gradually reopening the economies. The virus outbreak also led to extraordinary working conditions, with part of the services sector working from home, which rises the potential of those conditions being preserved after the virus outbreak, which could decrease demand and market value for commercial real estate investments.

Within this challenging environment, insurers are exposed in terms of solvency risk, profitability risk and reinvestment risk. The sudden reassessment of risk premia and the increase of default risk could trigger large-scale rating downgrades and result in decreased investments' value for insurers and IORPs, especially for exposures to highly indebted corporates and sovereigns. On the other hand, the risk of ultra-low interest rates for long has further increased. Factoring in the knock on effects of the weakening macro economy, future own funds position of the insurers could be further challenged, due to potential lower levels of profitable new business written accompanied by increased volume of profitable in-force policies being surrendered or lapsed. Finally, liquidity risk has resurfaced, due to the potential of mass lapse type

of events and higher than expected virus and litigation related claims accompanied by the decreased inflows of premiums.

For the European occupational pension sector, the negative impact of COVID-19 on the asset side is mainly driven by deteriorating equity market prices, as, in a number of Member States, IORPs allocate significant proportions of the asset portfolio (up to nearly 60%) in equity investments. However, the investment allocation is highly divergent amongst Member States, so that IORPs in other Member States hold up to 70% of their investments in bonds, mostly sovereign bonds, where the widening of credit spreads impair their market value. The liability side is already pressured due to low interest rates and, where market-consistent valuation is applied, due to low discount rates. The funding and solvency ratios of IORPs are determined by national law and, as could be seen in the 2019 IORP stress test results, have been under pressure and are certainly negatively impacted by this crisis. The current situation may lead to benefit cuts for members and may require sponsoring undertakings to finance funding gaps, which may lead to additional pressure on the real economy and on entities sponsoring an IORP.

Climate risks remain one of the focal points for the insurance and pension industry, with Environmental, Social and Governance (ESG) factors increasingly shaping investment decisions of insurers and pension funds but also affecting their underwriting. In response to climate related risks, the EU presented in mid-December the European Green Deal, a roadmap for making the EU climate neutral by 2050, providing actions meant to boost the efficient use of resources by moving to a clean, circular economy and stop climate change, revert biodiversity loss and cut pollution. At the same time, natural catastrophe related losses were milder than previous year, but asymmetrically shifted towards poorer countries lacking relevant insurance coverages.

Cyber risks have become increasingly relevant across the financial system in particular during the virus outbreak due to the new working conditions that the confinement measures imposed. Amid the extraordinary en masse remote working arrangements an increased number of cyber-attacks has been reported on both individuals and

healthcare systems. With increasing attention for cyber risks both at national and European level, EIOPA contributed to building a strong, reliable, cyber insurance market by publishing its strategy for cyber underwriting and has also been actively involved in promoting cyber resilience in the insurance and pensions sectors.

1.1. MACRO AND MARKET RISKS

European macroeconomic conditions severely deteriorated amid the worldwide disruption in economic demand and supply due to COVID-19, which followed a low GDP growth during the fourth quarter of 2019.

While domestic demand supported GDP growth during the third quarter of 2019, the fourth quarter underperformed by levels not seen since early 2013 (Figure 1.1). Contributing temporary factors were strikes in France, as well as the deterioration in the manufacturing sector. Despite the variability of GDP growth across countries, at the European level the GDP growth became less steep from the beginning of 2018 (Figure 1.2). The tilt towards a more sluggish economy is reflected by the economic sentiment indicator from 2018 onwards (Figure 1.3). The effect of COVID-19 is expected to severely weaken GDP growth, which is already reflected in the drop observed for 2020 Q1 (Figure 1.1 and Figure 1.2). The economic sudden stops, in terms of demand and supply, caused by a global attempt to contain the virus outbreak are expected to lead to recession. The longer term impact is still uncertain, however the European Commission forecasts for Spring 2020 indicate EU GDP annual decrease of 7.4% rebounding to annual 6.1% increase for 2021, whereas for EA a decrease of 7.7% for 2020 and increase of 6.3% for 2021.¹ PMI indices show a significant drop, especially for services sector, as compared to manufacturing (Figure 1.5 and Figure 1.6). However, consumer sentiment and confidence are also expected to be negatively impacted, which might adversely affect the economy as a second round effect following the virus containment.

Regarding the insurance sector, the gross written premium volume for either new or inforce business, might significantly decrease, potentially with the exception of death and morbidity focused products, closely reflecting the expected decrease in economic output.² The decrease in writing (and increase in surrendering) profitable business could potentially result in a relative reduction in the excess of assets over liabilities and in a deteriorated solvency position of insurers. In fact, this relation is amplified in the context of low yield environment. As life business is experiencing a business model change shifting towards lower interest rate guarantees, as a response to the persistent low yield environment, the opportunity cost for not writing profitable new business is further inflated. Finally, liquidity and profitability pressures could arise for insurers, in case of contemporaneous decrease of gross written premiums and increase of Covid-19 related claims.

European labour market is expected to be negatively affected by the economic turmoil caused by the virus outbreak, disrupting the decreasing trajectory of unemployment rates.

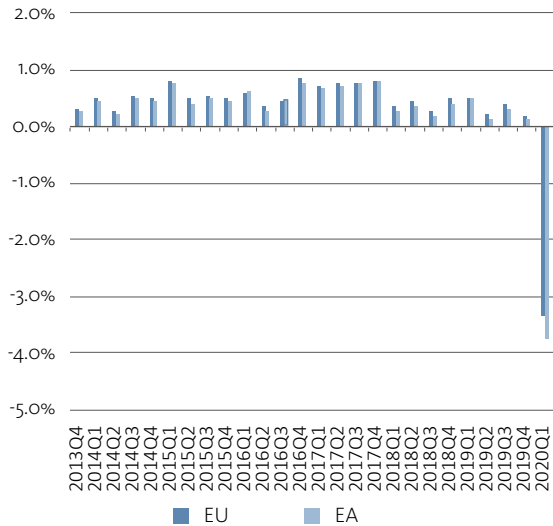
Despite the general positive trend of employment, the unemployment rate remained relatively elevated for some countries and the rate of decrease was varied across countries (Figure 1.4). The solid labour market and its effect on increasing domestic demand, has supported the level of GDP growth during 2019. However, unemployment claims has been peaked during the pandemic lockdown, which raises the concern of how the labour market will be formed following the virus containment. European Commission's forecasts indicate EU unemployment rate at the levels of 9% for 2020 and 7.9% for 2021 (compared to 6.7% for 2019), whereas for EA 9.6% and 8.6%, respectively (compared to 7.5% for 2019).

Amid the global economic lockdown and the current forecasts regarding economic outlook, the income of many policyholders is expected to be severely affected. Negative effects could be amplified when factoring in the high indebtedness of households for some countries. The risk of increase in lapses has therefore resurfaced with potential negative liquidity and profitability implications for the insurers.

¹ European Commission, European Economic Forecast, Spring 2020.

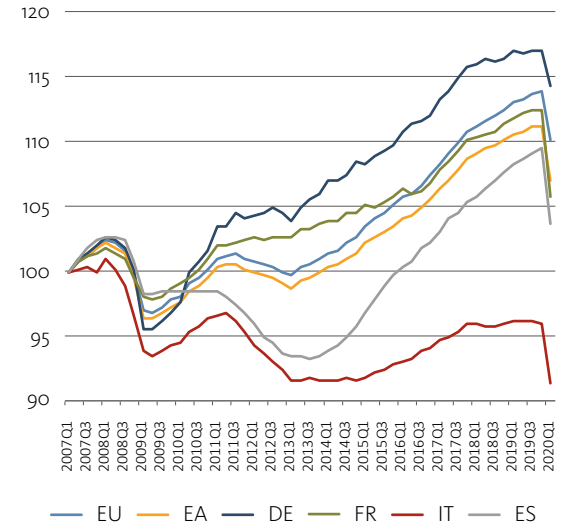
² Please refer to the thematic article "Insurance and the Macroeconomic Environment", EIOPA Financial Stability Report, May 2014.

Figure 1.1: Real GDP growth (%) QoQ



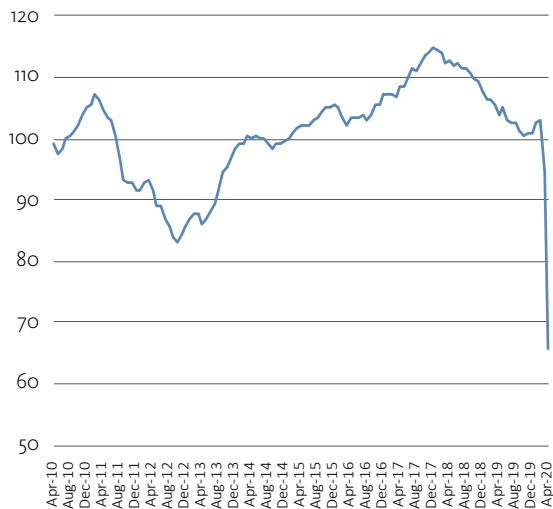
Source: ECB, Eurostat.
Last observation: March 2020. Note: EU and EA time series refer to fixed composition, with EU referring to EU 27.

Figure 1.2: Real GDP growth, by country (2007Q1=100)



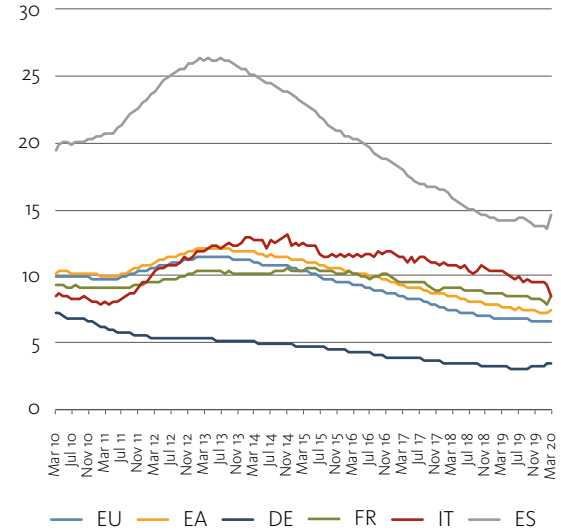
Source: ECB, Eurostat and EIOPA calculations.
Last observation: March 2020. Note: EU and EA time series refer to fixed composition, with EU referring to EU 27.

Figure 1.3: Economic Sentiment Indicator



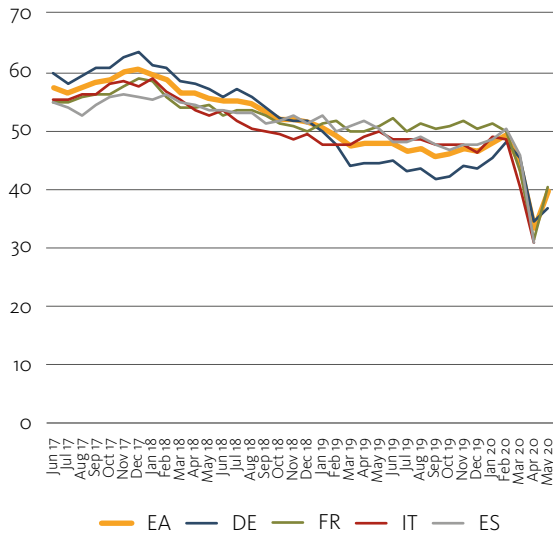
Source: European Commission.
Last observation: April 2020.

Figure 1.4: Unemployment rates (% of active population)



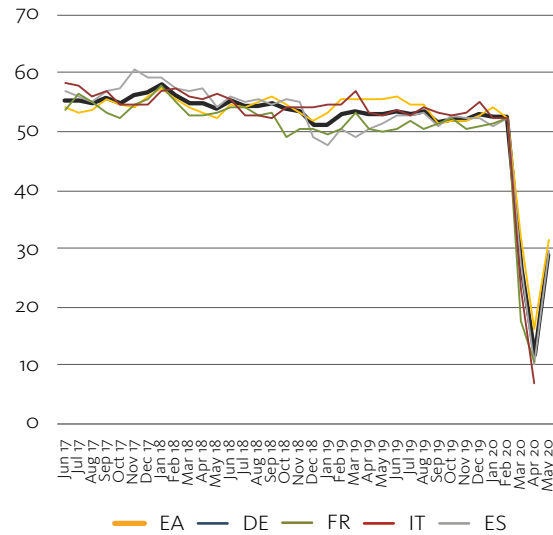
Source: Eurostat.
Last observation: March 2020. Note: EU and EA time series refer to 27 countries (from 2020) and 19 countries (from 2015).

Figure 1.5: PMI manufacturing



Source: Refinitiv.
Last observation: April 2020 for Italy and Spain and May 2020 for the rest.

Figure 1.6: PMI service



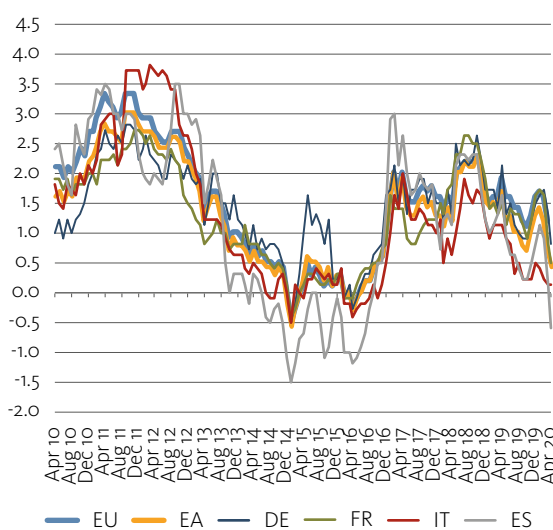
Source: Refinitiv.
Last observation: April 2020 for Italy and Spain and May 2020 for the rest.

Inflation is reduced by a demand shock caused by the economic lockdown accompanied with the decreased prices in energy sector. The deflationary pressure is partially compensated by the supply side disruption. Significant uncertainty still exists on the dynamics. Inflation rates for the EU and EA increased during the last quarter of 2019, including January of 2020, but declined in February and March reflecting the result of decreased price levels in energy and services sector. In fact, in the EA and EU the inflation (HICP rate) peaked at 1.4% and

1.7%, respectively, for January, outperforming the average 2019 levels, decreasing to 0.7% and 1.2%, respectively, for March (Figure 1.7 and Figure 1.8).

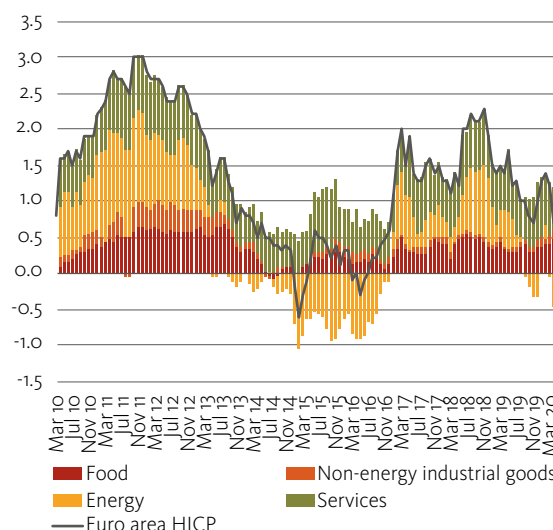
The deterioration of the economic outlook might affect investors in lowering their expectations on the expected inflation and subsequently this might further push down expected returns. In fact, European Commission forecasts indicate EU level for inflation at 0.6% for 2020 and 1.3% for 2021, whereas for EA 0.2% and 1.1%, respectively.

Figure 1.7: Inflation rate, by country (in %)



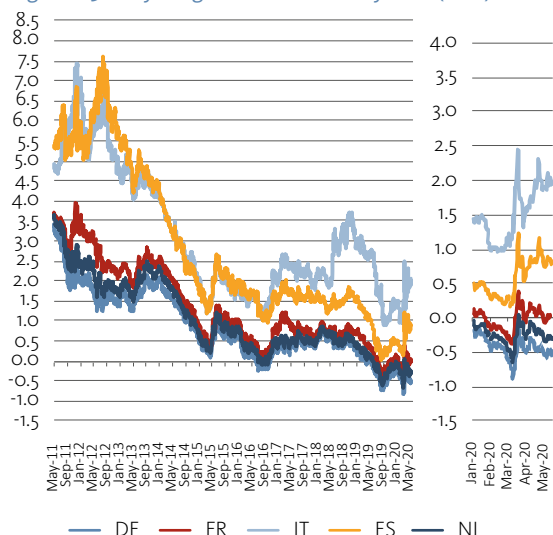
Source: ECB, Eurostat.
Last observation: March 2020 for EU and April 2020 for the rest. Note: EU and EA refer both to changing composition.

Figure 1.8: HICP main components (annual % changes)



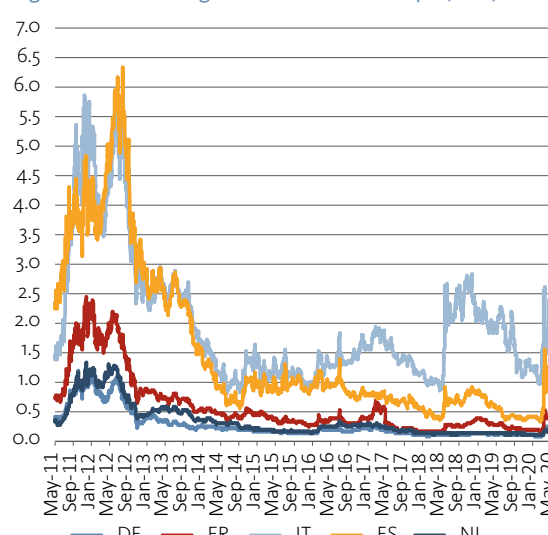
Source: ECB, Eurostat.
Last observation: March 2020. Note: EA refers to changing composition.

Figure 1.9: 10-year government bond yields (in %)



Source: Refinitiv.
Last observation: 15/05/2020.

Figure 1.10: Sovereign Credit Default Swaps (in %)



Source: Refinitiv.
Last observation: 15/05/2020.

Fixed income markets were affected severely from COVID-19 unravelling a double-hit like scenario. The 10-year government bond yields for countries with higher ratings reached in March even lower levels than August 2019, reflecting the higher demand during the outbreak (Figure 1.9 and Table 1.1). The flight-to-quality behaviour has also been reflected in CDS premia across countries, indicating the abrupt increase in the credit spreads for some of them (Figure 1.10). Despite the significant volatility observed across all countries the signals of flight-to-quality were still evident after the first half of April when the first actions or plans for reopening the economies have been initiated and relative long time has passed since the enormous support programs by ECB and governments have been announced.

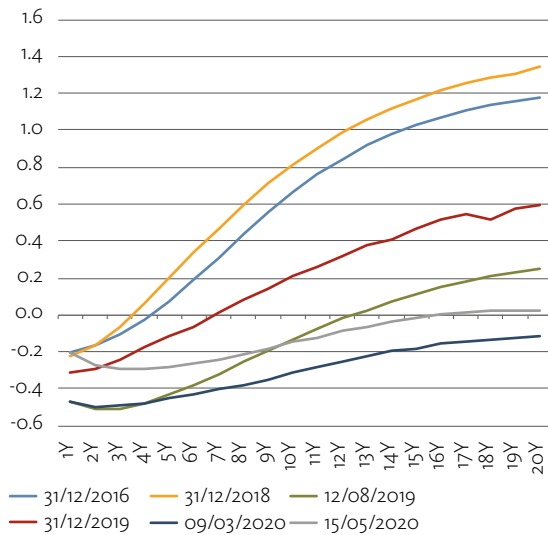
Swap curve fluctuated widely during the course of the financial turbulence amid the virus outbreak. At

the beginning of March 2020, the curve was significantly flattened and all tenors entered into the negative territory. However, since then, the curve has been shifted up almost in a parallel manner (Figure 1.11). Despite the shift, the longer end of the curve is near zero, lower compared to the swap curve of August 2019.

Corporate bonds yields were increased abruptly due to the severe deterioration of the economic and financial environment, reflecting the increased risk of rating downgrades, following a decreasing trajectory since then although without a significant effect on their spread. The yields of BBB rated bonds increased sharply towards the end of February in a record high since many years (Figure 1.12). Considerations related to their default risk, marketability and or reduced liquidity might have driven the movement amid the concerns on the viability of firms during the economic lockdown.³

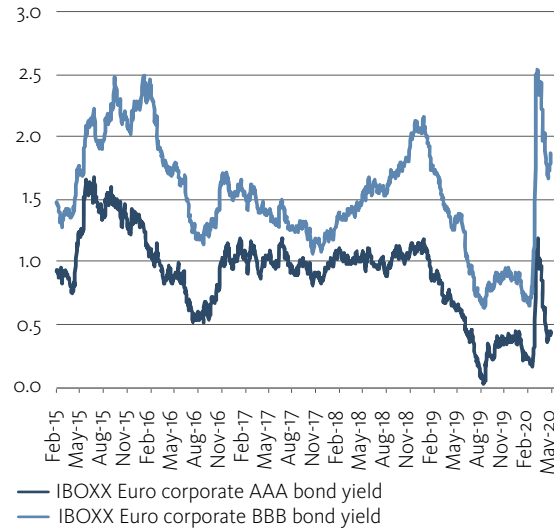
³ Please refer to Chapter 5, paragraph on “The impact of large-scale rating downgrades due to Covid-19 crisis”, for a focused analysis on the impact of rating downgrades.

Figure 1.11: Swap curves (in %)



Source: Refinitiv.
Last observation: 15/05/2020.

Figure 1.12: Corporate bond yields (in %)



Source: Refinitiv.
Last observation: 15/05/2020.

Table 1.1: Government bond yields for different maturities (in %)

		1Y	2Y	5Y	10Y	15Y	20Y
EU- euro area	Austria	-0.292	-0.565	-0.451	-0.114	0.084	0.197
	Belgium	-0.522	-0.512	-0.311	0.076	0.439	0.676
	France	-0.486	-0.511	-0.376	0.017	0.339	0.556
	Germany	-0.641	-0.723	-0.730	-0.508	-0.327	-0.204
	Ireland	-0.456	-0.492	-0.162	0.190	0.459	0.628
	Italy	0.320	0.728	1.393	1.973	2.367	2.704
	Netherlands	-0.620	-0.650	-0.566	-0.289	-0.117	-0.026
	Portugal	-0.370	-0.285	0.230	0.883	1.282	1.608
	Spain	-0.374	-0.242	0.195	0.801	1.179	1.467
EEA/EU-non euro area	Bulgaria	-0.252	-0.211	0.176	1.055	-	-
	Czech Republic	-0.046	0.126	0.446	0.832	1.083	1.368
	Denmark	-0.497	-0.536	-0.504	-0.301	-0.089	0.052
	Hungary	0.949	1.104	1.471	1.937	2.226	-
	Norway	-0.005	-0.020	0.022	0.304	-	-
Others	United States	0.136	0.159	0.337	0.641	0.850	1.191
	United Kingdom	0.054	0.026	0.046	0.243	0.522	0.664
	Switzerland	-0.717	-0.716	-0.681	-0.549	-0.406	-0.380
	Japan	-0.181	-0.179	-0.135	0.008	0.240	0.381

Source: Refinitiv.
Reference date: 15/05/2020.

BOX 1.1: WHAT ARE CENTRAL BANKS AND GOVERNMENTS DOING IN RESPONSE TO THE COVID-19 CRISIS?

Since its outbreak in China, in the end of December 2019, the coronavirus pandemic spread out in only few months across the entire world. Large parts of the global economy has been shut down, with companies experiencing an unprecedented stress in their cashflow positions, raising the risk of a weakened labour market to follow. The shock faced was exogenous, meaning not driven by weak economic fundamentals, excessive risk taking behavior or mistrust in the financial sector. The extreme situation triggered massive policy interventions in support to the economy by governments and central banks. The main objective of all the measures is to limit the permanent damage to the economy so that when the pandemic recedes, the economy can grow again, and supply goods and services to meet demand.

The ECB announced several measures on March 19, only two weeks after the previous announcements. In particular:

- The temporary Pandemic Emergency Purchase Programme (PEPP) has been launched with a scope of EUR 750 billion until the end of the year, in addition to the expansion of the existing Asset Purchase Program (APP) by €120 billion already decided on 12 March, with the total amount reaching the level of 7.3% of euro area GDP;
- The decision has been made to purchase commercial papers of sufficient credit quality and to expand the eligible collateral in its refinancing operations;
- €3 trillion made available in liquidity through its refinancing operations, at the lowest interest rate ever offered, -0.75%;

European banking supervisors have also freed up an estimated EUR 120 billion of additional bank capital, which may support considerable lending capacity by banks. On March 27 the ECB has ordered banks to freeze dividends and shares buybacks, for the financial year 2019 and 2020 (at least until October), on its effort to avoid a credit crunch.

The Federal Reserve has also implemented an extensive package in support of the US economy:

- It has cut its target for the federal funds rate, the rate banks pay to borrow from each other overnight, by a total of 1.5% since March 3, bringing it down to a range of 0% to 0.25%. The Fed also offered forward guidance on the future path of its key interest rate, by signaling that rates will likely remain low;
- It has restarted purchasing massive amounts of securities mainly Treasuries and mortgage-backed securities;
- It has restarted lending to securities firms. Through the Primary Dealer Credit Facility (PDCF), a program first put in place for the global financial crisis, the Fed will offer low interest rate (currently 0.25%) loans up to 90 days to 24 large financial institutions known as primary dealers;
- It has encouraged direct lending to banks: the Fed lowered the rate that it charges banks for loans from its discount window by 1.5%, from 1.75% to 0.25%. It also has temporarily relaxed regulatory requirements so that banks can increase lending during the downturn;
- It has established several funding programs and new credit facilities to support directly corporations, households and local governments.
- It has made U.S. dollars available to other central banks, so they can lend to banks that need them;

- It has been acting to backstopping money market mutual funds by re-launching the crisis-era Money Market Mutual Fund Liquidity Facility (MMLF). With this measure the FED intends to assist money market funds in meeting demands for redemptions by households and other investors, with the aim to enhance overall market functioning and credit provision to the broader economy.”;
- Finally, it has vastly expanded the scope of its repurchase agreement (repo) operations to make cash flow to money markets and is now essentially offering an unlimited amount of money.

Regarding action at the European level, on March 16 the Eurogroup held a discussion with non-Euro Member Areas and announced two broad messages. The first is that all national authorities will implement the following necessary measures to ensure that the economic consequences of COVID-19 are tackled: a) Immediate fiscal spending targeted at containment and treatment of the disease, b) Liquidity support for firms facing severe disruption and liquidity shortages: this can include tax measures, public guarantees to help companies to borrow, export guarantees and the waiving of delay penalties in public procurement contracts and c) support for affected workers to avoid employment and income losses, including short-term work support, extension of sick pay and unemployment benefits and deferral of income tax payments. The second announcement is about the need to introduce measures to help economies recover once the coronavirus has receded, in particular to continue work to strengthen the architecture and resilience to shocks of the Economic and Monetary Union.

Furthermore, EU national governments have also taken country specific actions, under the trade off that although massive measures are needed, the interruption of economic growth will put many countries' public finances under severe strains. As an example, on March 23 the Italian government approved a EUR 25 billion package to face the emergency. On the other hand, on March 23 the German government approved similar measures, but on a larger scale.

Insurers hold large amounts of government bonds and might be potentially negatively affected by a severe repricing. It is therefore crucial how national governments will act and that the EU will coordinate effectively the support of countries with weaker public finances which otherwise could potentially impose financial stability risks.

The effect of flight-to-quality accompanied with a downward shift of the swap curve further stretches the balance sheet of insurers.⁴ On the one hand, for safer bonds market value on the Solvency II balance sheet valuation increased, whereas the market value for riskier bonds decreased. On the other hand, the downward shift of the risk free rate curve used to discount the technical provision would increase effectively their value. Therefore, the exposures between safer and riskier bonds as well as the negative duration gap (typically characterising life insurers), would determine the net effect between market value of bonds and the market value of liabilities (backed by the bonds). It is worth mentioning, however, that Solvency II tools could partially mitigate the impact on insurers' positions, for example via volatility adjustment and symmetric adjustment for equity risk.

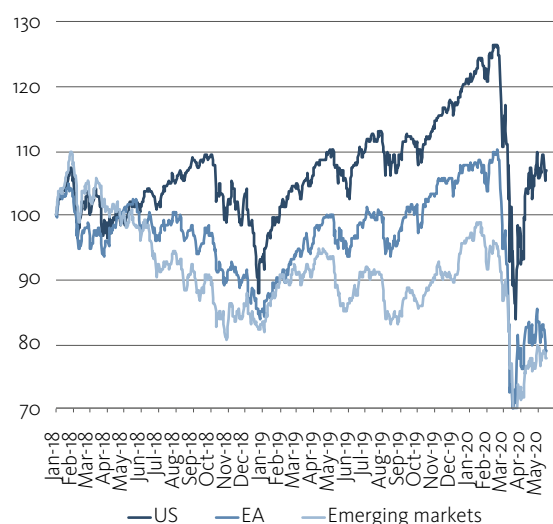
Another aggravating factor for insurers is reinvestment risk. In fact, bonds bought in the past and now redeemed are replaced with new bonds yielding lower coupons. To the extent that insurers are buy and hold investors, the aforementioned dynamics result in lower investment income for insurers.

Equity markets abruptly decreased during March with volatility skyrocketing, but a strong rebound has followed. European equity market dropped abruptly amid increasing volatility (Figure 1.13 and Figure 1.14), with March being the epicentre of the decline. However, since then an overall increasing trajectory took place, striking the difference between equity market performance and economic outlook.

The market dynamics observed during the virus outbreak were compensated amid the launches of the support packages. However, adding to the abovementioned discussion regarding the impact of flight-to-quality on fixed

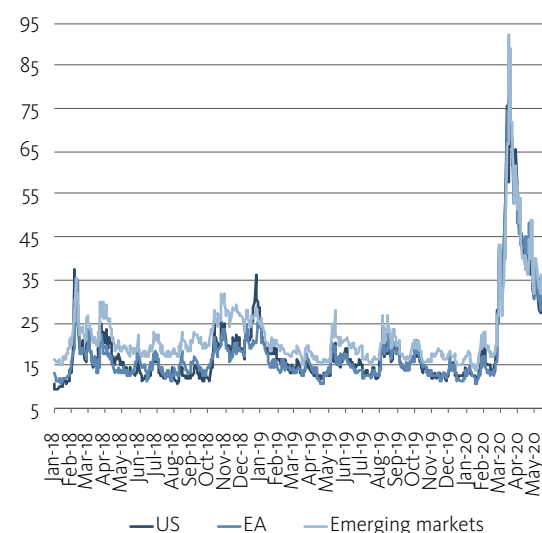
⁴ Similar stresses have been tested in 2016 and 2018 EIOPA stress tests.

Figure 1.13: Equity market performance (01/01/2018=100)



Source: Refinitiv and EIOPA calculations.
 Last observation: 15/05/2020.
 Note: US: S&P 500 INDEX, EA: Euro Stoxx 50 Pr, Emerging markets MSCI EMERGING.

Figure 1.14: Market volatilities



Source: Refinitiv.
 Last observation: 15/05/2020.
 Note: US: CBOE SPX VOLATILITY INDX, EA: VSTOXX Index, Emerging markets: CBOE EM ETF Volatility.

income assets the additional strain from dropping equity markets, balance sheet positions of insurers could have been severely stretched. Finally, the investments of the insurance sector which are characterized by strong interconnectedness with economic sectors or countries which are adversely affected by the pandemic is expected to result in spill over effects further creating additional risks for insurers.

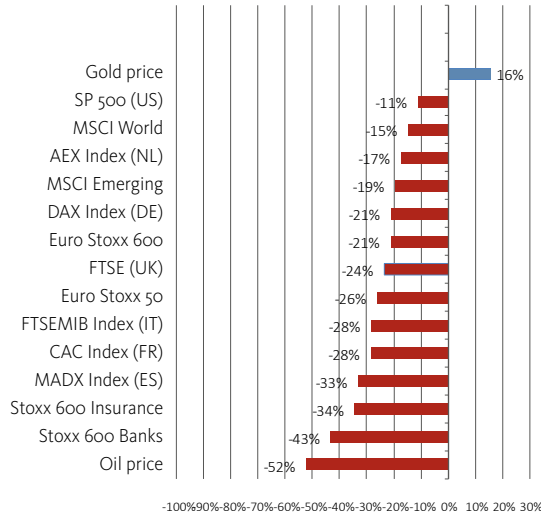
Stock prices of the insurance sector were significantly affected, even more than the whole market. In fact, the performance of the insurance sector underperformed the market, mainly pricing the adverse economic environment for insurers and further potential burdens related to pandemic related claims considerations (Figure 1.15 and Figure 1.16). Equity prices have rebounded towards the

end of March, however amid generic uncertainty in the context of the virus outbreak, EIOPA published a statement calling undertakings to follow a prudent approach on dividends distributions and variable remunerations.

Following the Covid-19 outbreak, increased oscillations have been observed in the equity prices of insurers with some market declines after the public statement. In this respect, EIOPA conducted an event study to assess the potential effect of the public statement on equity prices of European insurers. The study covers the insurers included in Stoxx 600 Insurance index and suggests that the announcement did not have statistically significant negative impact on the equity prices over the event windows covering a few days after the publication of the statement.⁵

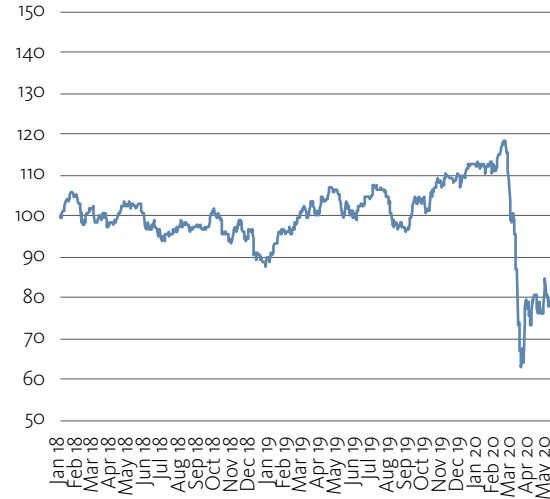
⁵ See the thematic article “The impact of EIOPA statement on insurers’ dividends: Evidence from equity market” in this report. The article is focussed only on the EIOPA statement publication and does not investigate the follow-up communication at national level.

Figure 1.15: Selected markets performance (year-to-date)



Source: Refinitiv.
Last observation: 15/05/2020.

Figure 1.16: Stoxx 600 Insurance (01/01/2018=100)



Source: Refinitiv and EIOPA calculations.
Last observation: 15/05/2020.

1.2. NATURAL CATASTROPHE EVENTS, CLIMATE RISK AND SUSTAINABLE FINANCE

The latest information for 2019 show losses much lower than the average for the last few years, but also a high concentration of natural disasters in poorer countries, where insurance coverage is very scarce. Total natural catastrophes and weather related losses amounted to approximately USD 150 bn. globally in 2019, from which only USD 52 bn. were insured.⁶ In Europe, the most costly events were the winter storm Eberhard in March 2019 which caused losses of USD 2.2 bn. of which 1.3bn. were insured and storms affecting the Mediterranean area (particularly Italy, France and Spain) that caused losses of billions of dollars. Another particular event causing a USD 700 mn. loss was an earthquake that occurred in Albania in November 2020.

Extreme weather events continue to put significant pressure on non-life insurers and are expected to become more frequent and severe due to climate change. With the period 2014-2019 as Europe’s warmest years on record, 2019 was considered the second warmest year with several intense heatwaves setting all-time

high temperatures in some European countries. Europe’s annual temperature has increased at an average rate of 0.14°C (0.25°F) per decade since 1910.⁷

In response to climate related risks, the EU presented in mid-December the European Green Deal, a roadmap for making the EU climate neutral by 2050⁸. It provides a map of actions meant to boost the efficient use of resources by moving to a clean, circular economy and stop climate change, revert biodiversity loss and cut pollution. Consequently, the EU Commission adopted in March the European Industrial Strategy based on three main drivers: green transition, global competitiveness and digital transition. Furthermore, the Just Transition Mechanism (JTM) is meant to ensure that the transition towards a climate neutral economy occurs in a fair manner by providing targeted support to help mobilise at least €100 billion over the period 2021-2027 in the most affected regions by the impact of the transition.

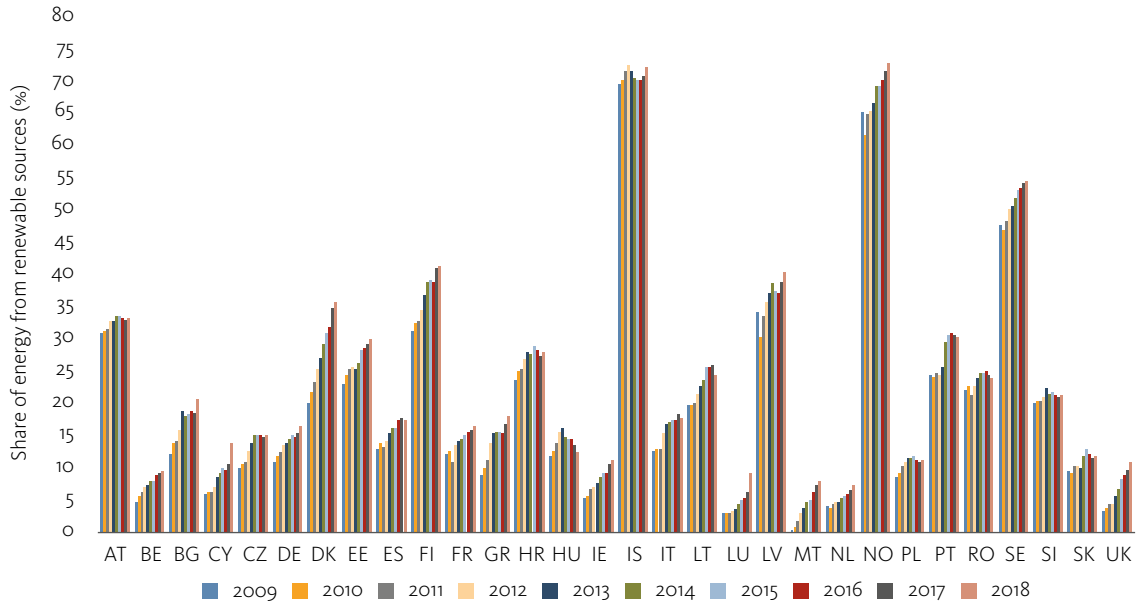
In terms of air pollution, preliminary data reported on greenhouse gas emissions across Europe had a 2.0 % decrease from 2017 to 2018, bringing collective reductions down to 23.2 % below 1990 level, well under the EU 2020

6 Source: Munich Re NatCatSERVICE: <https://www.munichre.com/topics-online/en/climate-change-and-natural-disasters/natural-disasters/natural-disasters-of-2019-in-figures-tropical-cyclones-cause-highest-losses.html>

7 Source: NOAA National Centres for Environmental Information.

8 Please see the thematic article by Marie Scholer and Lazaro Cuesta Barbera (European Insurance and Occupational Pensions Authority (EIOPA), members of the Technical Expert Group on Sustainable Finance) in the annex of the report. Title “The EU sustainable finance taxonomy from the perspective of the insurance and reinsurance sector”.

Figure 1.17: Share energy from renewable sources (% of gross final energy consumption)



Source: Eurostat, table nrg_ind_ren.
Last observation: 2018.

target.⁹ The latest developments caused by Covid-19 also had an impact on the air quality as many EU countries implemented a strict lockdown, restricted travel and some industries and business have been closed down. In this context, economic activity has stalled together with the carbon emissions.

On a path to the 2020 target of 20%, the EU countries are increasing the consumption of energy from renewable sources (Figure 1.17) in order to reduce the dependence on imported fuel, the gas emissions from fossil fuel sources, and to decouple the energy costs from oil prices. The latest available figures show that in 2018, renewable energy represented 18.9 % of energy consumed in the EU.

This energy transition affects insurers as long-term investors. On one side, insurers are incorporating risks in their underwriting and investment activities as part

of an enhanced approach towards Environmental, Social and Governance (ESG) factors, but also invest in green assets¹⁰. In this context, an overall growing trend in the market are investments in green bonds and green loans, which have reached a new global record in 2019 in terms of issuance: USD257.7bn representing a 51% increase when compared with 2018.¹¹ These bonds aim to fund projects that have positive environmental and/or climate benefits.

Moreover, EIOPA is currently assessing key financial risks embedded in insurers' asset portfolios in relation to the transition to a low-carbon economy. As shown in Table 1.2, preliminary findings regarding the insurers' asset portfolios indicate that more than 15% of their overall investments in corporate bonds and equity are likely to be in automotive, coal, oil & gas and power generating sectors. This corresponds to close to 7% of their total investments.

⁹ Trends and projections in Europe 2019, Tracking progress towards Europe's climate and energy targets, EEA (European Environment Agency) Report, No 15/2019

¹⁰ Please see the thematic article by Marie Scholer and Lazaro Cuesta Barbera (European Insurance and Occupational Pensions Authority (EIOPA), members of the Technical Expert Group on Sustainable Finance) in the annex of the report. "The EU sustainable finance taxonomy from the perspective of the insurance and reinsurance sector".

¹¹ Source: 2019 Green Bond Market Summary, Climate Bonds Initiative, available at: <https://www.climatebonds.net/>

¹² See Impact of Green Bond Policies on Insurers: Evidence from the European Equity Market (Petr Jakubik and Sibel Uguz). This study is a thematic article EIOPA FSR June 2019. <https://www.eiopa.europa.eu>

Table 1.2: Estimated corporate bond and equity exposures

Estimated after adjusting for mapping coverage*			
Sector	Euro. Bn	Share of total investments	Share of corp. bonds, common equity and bond and equity funds
Automotive	89.3	0.8%	1.9%
Coal	50.7	0.5%	1.1%
Oil&Gas	226.4	2.1%	4.8%
Power	350.4	3.3%	7.5%
Total	716.7	6.8%	15.3%

* Note: As it was not possible to map all equity and corporate bonds to underlying sector and technology, the mapped assets have been extrapolated to align with the overall portfolio by assuming the shares in the mapped and unmapped parts are equal.

An additional 3% of total investments is likely to be in aviation, cement, shipping and steel production. That means that overall investments in key climate-relevant sectors is likely to account for more than 10% of the total investments.

The findings also indicate that a large share of these investments (by amount) are not aligned with scenarios limiting global warming to less than 2 degrees Celsius (a target in the Paris agreement). As climate risks are forward looking and characterised by deep uncertainty, and climate policies may be sudden and not fully anticipated and priced by investors, this could indicate a potential risk of re-pricing or even stranded assets in the portfolio of insurers in the longer term.¹³

1.3. CYBER RISKS AND THE INSURANCE SECTOR

Cyber risks have become increasingly relevant across the financial system, including for the insurance and pension sectors. Accordingly, cyber risk was ranked by national supervisors as the second biggest risk for the insurance sector and the sixth for the pensions sector in the

EIOPA Autumn 2019 Qualitative Survey.¹⁴ This is in line with the results of the dedicated questionnaire launched by EIOPA regarding the risks for insurance sector due to Covid-19 shock, based on which cyber risk is ranked as the sixth risk in terms of materiality.¹⁵ Moreover, the potential systemic relevance of cyber risk has also been highlighted by other international institutions, such as the European Systemic Risk Board.¹⁶

The relevance of cyber risk has also become clearer during the ongoing COVID-19 outbreak, as discussed in Box 1.2. An increased number of cyber-attacks has been reported on both individuals and healthcare systems since the start of the COVID-19 outbreak. Hackers and cyber criminals use the shift to remote working arrangements as an opportunity for security breaches and take advantage of the urgency of the situation to profit the most from their attacks.

Cyber risk challenges the insurance sector by both an operational risk perspective and an underwriting perspective. As highlighted in EIOPA's report on "Cyber Risk for Insurers – Challenges and Opportunities" published in September 2019, the increasing frequency and sophistication of cyber-attacks, the fast digital transformation and the increased use of big data and cloud computing make insurers increasingly susceptible to cyber threats, in particular considering the amount of confidential policyholder information insurers are possessing.¹⁷ This calls for a sound cyber resilience framework for insurers. On the other hand, the digital economy and the advance of technology offer opportunities to cyber insurance underwriters. Appropriate cyber insurance coverages can make a valuable contribution to manage cyber risk faced by businesses and organisations. A well-developed cyber insurance market can play a key role in enabling the transformation to the digital economy.

With a view to contributing to building a strong, reliable, cyber insurance market, EIOPA has published its strategy for cyber underwriting earlier this year.¹⁸

This document outlines EIOPA's strategic priorities regarding the European cyber insurance market, as part of EIOPA's broader mission to promote sound technological

¹³ For more details see https://www.eiopa.europa.eu/sites/default/files/events/climate_risks_sensitivity_analysis_workshop_discussion_paper.pdf

¹⁴ See EIOPA December 2019 Financial Stability Report.

¹⁵ Please refer to section 5.1 for detailed analysis on the results of the questionnaire.

¹⁶ See "Systemic cyber risk", European Systemic Risk Board, February 2020.

¹⁷ See "Cyber Risk for Insurers – Challenges and Opportunities", September 2019.

¹⁸ See "EIOPA Strategy on Cyber Underwriting", February 2020.

progress for the benefit of the European Union economy and its citizens, while safeguarding financial stability, market integrity and investors' protection. In this document, EIOPA identifies the following conditions as essential for a resilient cyber insurance market: (i) appropriate cyber underwriting and risk management practices and the corresponding promotion of such practices by supervisors; (ii) adequate assessment and mitigation tools to address potential systemic and extreme risks; (iii) a mutual understanding between policyholders and insurers of contractual definitions, conditions and terms; and (iv) an adequate level and quality of data on cyber incidents available at European level.

EIOPA's cyber underwriting strategy also specifies the actions to be taken by EIOPA as part of both its own supervisory and regulatory priorities and in its capacity as a facilitator and catalyst to provide advice on cyber insurance. These actions include, among others: (i) the periodic assessment and supervision of cyber underwriting, risk management practices and supervision, comprising for e.g. the collection of information on cyber underwriting as part of the regular reporting and the assessment of cyber risk in regular EIOPA reports; (ii) further investigation into the issue of non-affirmative cyber exposures and accumulation of risk; (iii) inclusion of scenarios related to cyber risk events and incidents in the stress testing framework and assessment of cyber risk in the Risk Dashboard; and (iv) working with the European Commission, ENISA and other relevant stakeholders and agents to explore and promote the development of a harmonised cyber incident reporting taxonomy.

EIOPA has also been actively involved in promoting cyber resilience in the insurance and pensions sectors, including through the development of guidelines addressing information and communication technology (ICT) security and outsourcing to cloud service providers. Accordingly, EIOPA has opened a consultation from December 2019 until 13 March 2020, on a Consultation Paper on the draft "Guidelines on ICT security and governance", which follows the set of Advice jointly developed and delivered by the three ESAs to the European Commission and in reply to the European Commission's Fintech Action Plan.¹⁹ In this paper, EIOPA develops a set

of guidelines on ICT security and governance addressed to national supervisory authorities and aimed at creating a common baseline for information security throughout the EU Member States and enhancing convergence of supervisory practices in this area. In line with these guidelines, every relevant entity should be subject to clear and general requirements on governance of ICT, including cybersecurity, to ensure the safe provision of regulated services. The guidelines address the following topics: (i) governance and risk management; (ii) ICT operations security; and (iii) ICT operations management. In February 2020, EIOPA has also published its "Guidelines on outsourcing to cloud service providers".²⁰ While recognising that there is a potential systemic risk on the large transition to the cloud, EIOPA sees the use of cloud computing has an enabler for innovation in the financial sector and, therefore, risks and benefits should be properly weighted. From a regulatory perspective, in the insurance sector and likewise in the other financial sectors, the purchase of cloud computing services falls within the broader scope of outsourcing, which is the framework to manage these risks. This framework requires the undertakings to be fully responsible to comply with all the regulatory obligations when they outsource to cloud service providers. The aim of the guidelines is to provide clarity to the market participants on how to apply the outsourcing provisions in the context of purchasing cloud services.

Moreover, EIOPA has been closely engaged with the European Commission, other agencies and stakeholders. Specifically, EIOPA has followed closely and contributed to the European Commission's public consultation on a potential initiative on the digital operational resilience in the area of financial services.²¹ This consultation aimed at gathering stakeholders' views on: (i) strengthening the digital operational resilience of the financial sector, in particular as regards the aspects related to ICT and security risk; (ii) the main features of an enhanced legal framework built on several pillars; and (iii) the impacts of the potential policy options. EIOPA is also following European Commission's work on building a European Strategy for data with the aim of shaping the future policy agenda on the EU data economy.²²

¹⁹ "Consultation on the proposal for Guidelines on information and communication technology (ICT) security and governance", EIOPA, 12 December 2019.

²⁰ "Guidelines on outsourcing to cloud service providers", EIOPA, 6 February 2020.

²¹ "Digital Operational Resilience Framework for financial services: Making the EU financial sector more secure", Consultation Document, European Commission,

²² "A European Strategy for data", European Commission, 19 February 2020.

BOX 1.2 CYBERSECURITY AMIDST THE COVID-19 OUTBREAK

In March, the European Commission, ENISA, CERT-EU and Europol issued a joint statement on COVID-19 related cyber threats.²³ In this statement, the entities commit to remain in close contact with one another to track malicious activities, raise awareness and help protect citizens. They pledge themselves to continue monitoring the COVID-19 situation and coordinate as appropriate to ensure a safer cyberspace for the EU and the world.

The statement was issued in response to an increased number of cyber-attacks and cybersecurity risks amidst the COVID-19 outbreak, when most institutions and companies are adopting teleworking arrangements that place company data and ICT systems in the target of hackers and other cyber criminals. According to Lexology, remote work raises a number of cybersecurity risks, namely: access to confidential company data through unsafe home or public Wi-Fi networks; vulnerable VPNs due to outdated software; ineffective backup and recovery systems; reduced security on personal devices and computers; and sharing of proprietary information on workplace chat apps. Also, employees may become the target of phishing emails containing links or attachments infected with malware. Such vulnerabilities can ultimately translate into data loss, privacy breaches, business disruptions, or fraudulent appropriations of funds.²⁴

The Europol published a report in March on the latest developments of COVID-19 on the criminal landscape in the EU, including cybercrime.²⁵ The report finds that criminals have used the COVID-19 crisis to carry out social engineering attacks, namely phishing emails through spam campaigns and more targeted attempts such as business email compromise. Europol expects the number of cyber-attacks to increase further and continuing innovation by cybercriminals in the deployment of various malware and ransomware packages themed around the COVID-19. Moreover, the report also finds that there have been multiple cyber-attacks against organisations and individuals that aim to profit from the global health concern. In several cases, these attacks have targeted critical health infrastructure, which is particularly threatening and may impact how well healthcare systems can respond to the outbreak. An example is the cyber-attack on Brno University Hospital in Czechia, which prompted the hospital to postpone urgent surgeries and reroute new acute patients to a nearby alternative hospital.

Several other cyber incidents targeting the health-care sector have been reported, namely the NetWalker ransomware targeting Spanish hospitals' computer systems occurred in late March and the Maze ransomware attack on Hammersmith Medicines Research, a British company that previously tested the Ebola vaccine and was due to perform the medical trials on a COVID-19 vaccine.²⁶ Other attempts and attacks have been reported on the World Health Organization and the Italian Social Security website.²⁷

Against this background, it becomes increasingly important that organisations protect themselves from these attacks by making cybersecurity a priority in their risk management frameworks.

²³ "Joint fight against COVID-19 related threats", ENISA, 20 March 2020.

²⁴ COVID-19 and Cyber risk, Lexology, 26 March 2020.

²⁵ "Pandemic profiteering: how criminals exploit the COVID-19 crisis", Europol, 27 March 2020.

²⁶ <https://elpais.com/espana/2020-03-23/la-policia-detecta-un-ataque-masivo-al-sistema-informatico-de-los-hospitales.html> and <https://www.forbes.com/sites/daveywinder/2020/03/23/covid-19-vaccine-test-center-hit-by-cyber-attack-stolen-data-posted-online/#4c4a374418e5>.

²⁷ <https://www.forbes.com/sites/daveywinder/2020/03/25/hackers-target-world-health-organization-as-cyber-attacks-double-during-covid-19-pandemic/> and <https://www.forbes.com/sites/daveywinder/2020/04/02/covid-19-payouts-disrupted-as-heartless-hackers-attack-italian-crisis-benefits-site/#692a2bf15f10>.

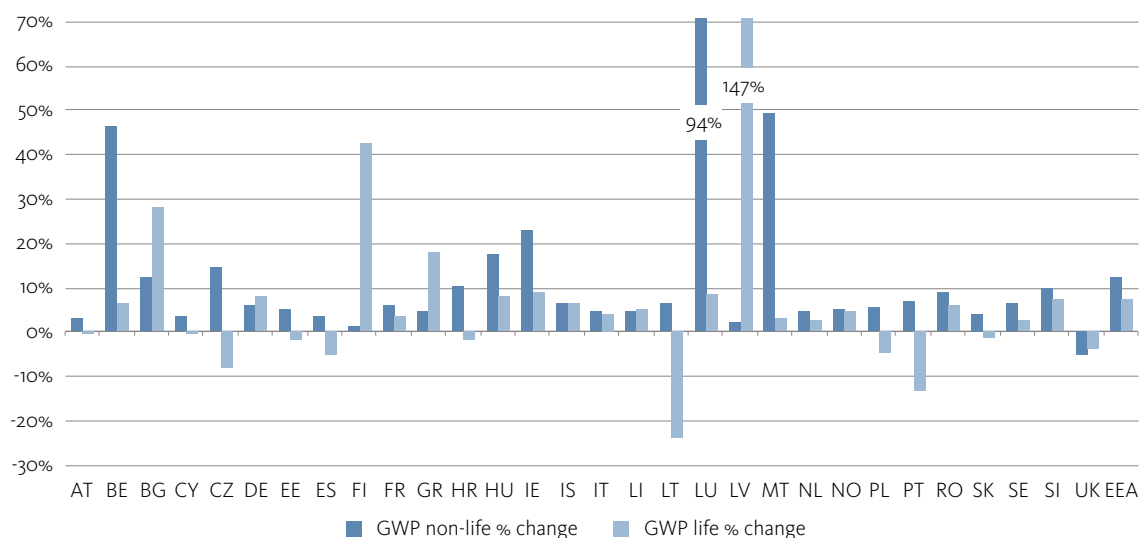
2. THE EUROPEAN INSURANCE SECTOR

The recent market development, discussed in Chapter 1, poses difficult challenges in the immediate future to the insurance sector, both in terms of navigating the turbulent market conditions and in maintaining operations. It is clear that both capital and solvency positions will be significantly affected by the current situation. The latest available Solvency II data do not capture the impact of the coronavirus outbreak as they refer to Q4 2019. However, they can provide an overview of the initial resilience of the European insurance sector before being hit by the current crisis. In this respect, high insurers' solvency ratios and improved asset valuations over 2019 due to the rebound in equity prices and declining yields in the first half of 2019 provide a buffer to withstand the impact of macro-financial shocks on the sector. Furthermore, differences in initial positions and specificities across countries, along with differences in the severity of the spread of the virus, suggests different abilities among the EEA countries to absorb the hit. An analysis of the potential impacts of Covid-19 will be presented in the risk assessment chapter 5.

2.1. MARKET SHARE AND GROWTH

The European insurance sector gross written premiums were increased, both for life and non-life business in Q4 2019. Non-life-business gross written premiums increased from Q4 2018 to Q4 2019 by 12% mainly driven by Luxembourg (94%), Malta (49%) and Belgium (46%) that displayed the highest GWP growth in Q4 2019 (y-o-y) for non-life. Likewise life-business increased by 6% mainly driven by Latvia (147%) and Finland (42%) (Figure 2.1). The increase observed in Luxembourg in the Non-life gross written premiums sector is mainly driven by the relocation of non-life companies from the UK to Luxembourg. In the case of Latvia, the significant increase is driven by the consolidation of one group with several branches in Lithuania and Estonia, where a variation in the opposite direction, linked to the same circumstance, is observed. On the other side, the ongoing low yield environment challenges the insurer's growth, in particular for life business of certain countries that show a reduction of GWP from Q4 2018 to Q4 2019. Overall GWP as a percentage of GDP remained unchanged at 9% from Q4 2018 for the

Figure 2.1: Total Life and Non-Life GWP growth in Q4 2019 (year-on-year)



Source: EIOPA QRS.
Reference date: Q4 2018 and Q4 2019.

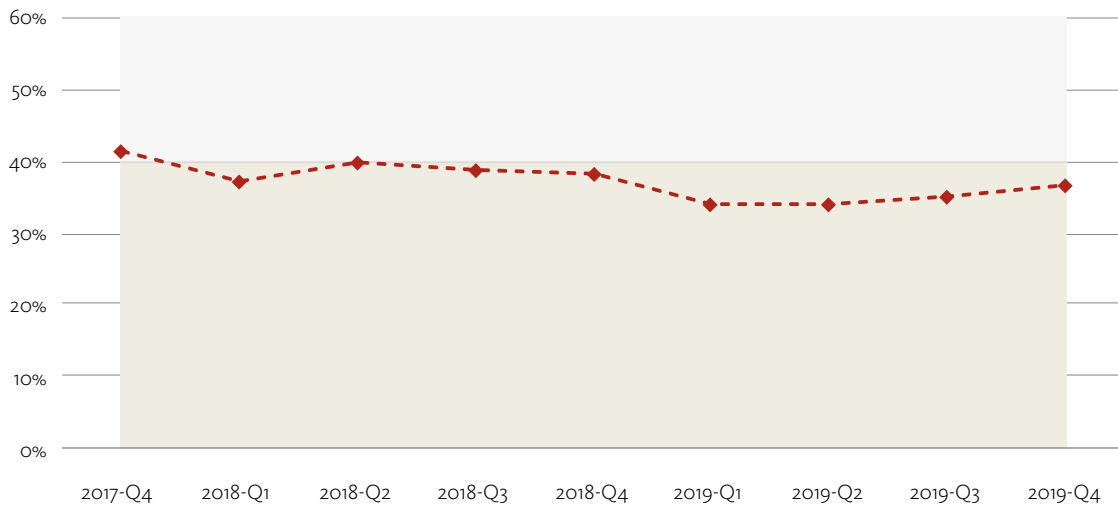
European insurance market, while total assets as a share of GDP improved from 70% in Q4 2018 to 74% in Q4 2019.

penetrations ratios is unclear as both assets/premiums as well as GDP are foreseen to drop.

The strong hit facing by economic activities in 2020 could result in decreasing premium and lowering new business. In the first and upcoming quarters of 2020, gross written premiums will be considerably hit by the recent market developments, driving serious concerns to the profitability and liquidity of insurers. The impact on

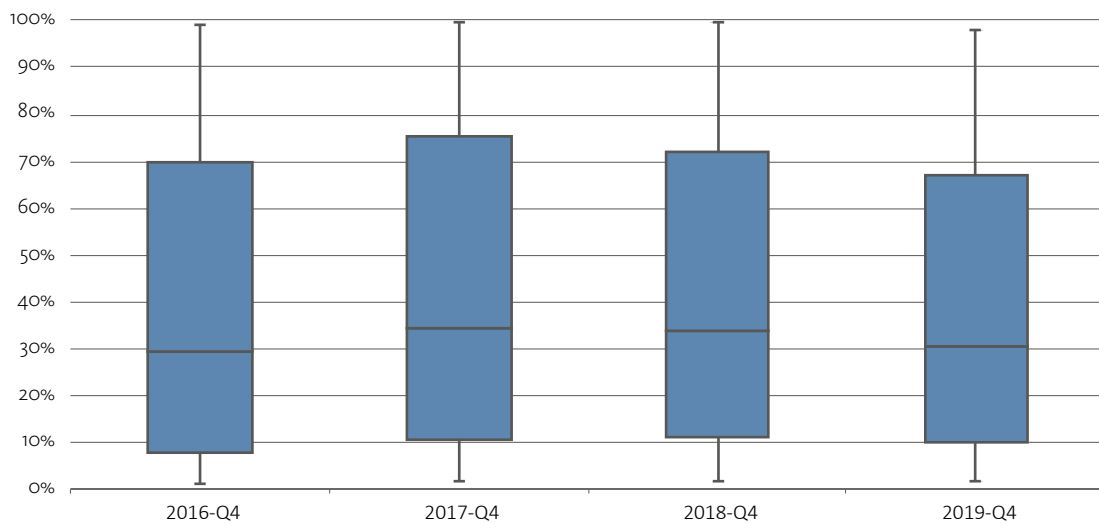
The share of unit-linked business has slightly increased in the last three quarters, however it is still lower than the levels in 2017 and 2018. The average share of unit-linked business deteriorated, from 41% in Q4 2017 to 38% in Q4 2018 and to 36.5% in Q4 2019 (Figure 2.2), likewise the share for the median insurance company declined from 34% in Q4 2018 to 30% in Q4 2019 (Figure 2.3).

Figure 2.2: GWP-Life business: Unit-linked share development over time



Source: EIOPA QRS.

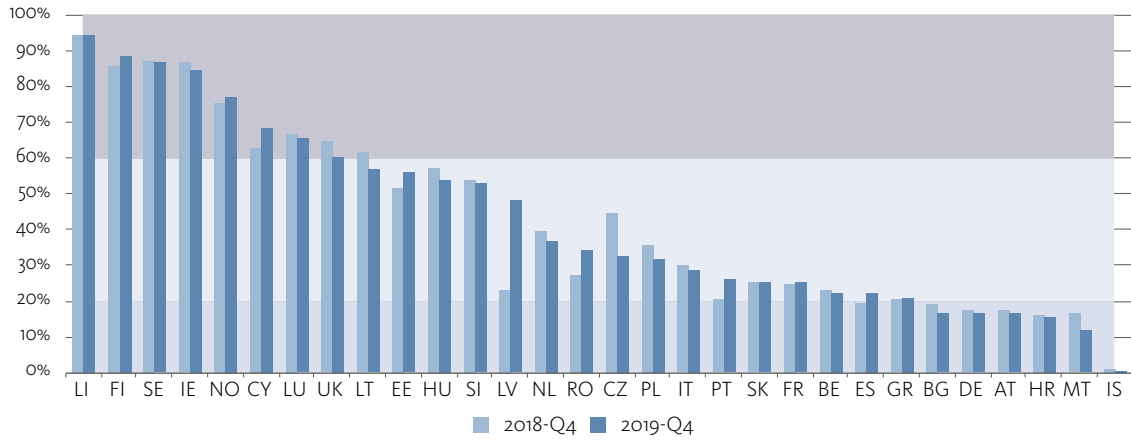
Figure 2.3: Unit-linked as a share of GWP-Life business (median, interquartile range and 10th and 90th percentile)



Source: EIOPA QRS.

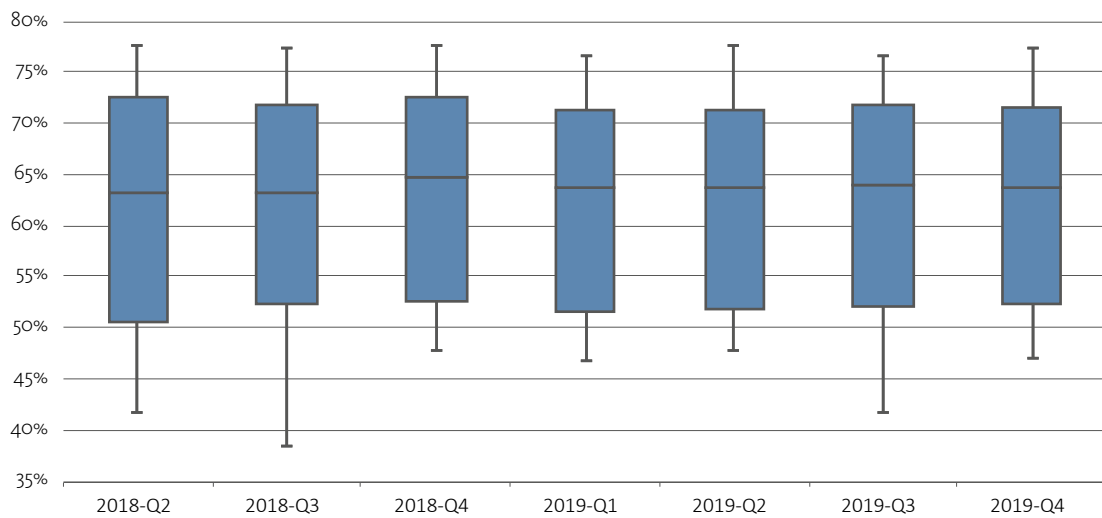
Note: Sample sized on insurance companies which have reported unit-linked business (life and life part of composite insurance companies).

Figure 2.4: Unit-linked as share of GWP-Life business across countries



Source: EIOPA QRS.

Figure 2.5: Liquid assets ratio (median, interquartile range and 10th and 90th percentile)



Source: EIOPA QFG.

Note: The liquid assets ratio shows the proportion of liquid assets on total assets (excluding assets held for unit-linked). The ratio is calculated by applying different weights (ranging from 100% for cash to 0% for intangible assets) to different assets, according to the liquidity profile.

Moreover, considerable differences in the use of unit-linked business remain across countries (Figure 2.4), driving a potential asymmetrical hit among EEA countries. In countries with higher shares of unit-linked, undertakings could be better positioned for a financial downturn as the policyholders face the losses. While it seems that there is still a significant number of non-pure unit linked products offering guarantees by insurers. Moreover, although the insurance sector is, in principle, not exposed to face losses coming from unit-linked products, in case of funds liquidation, insurance undertakings could face liquidity

risks and ultimately reputational risks.²⁸ This is seen to be a potential tail-risk that did not materialise yet.

The median value for liquid asset ratio remains overall stable since the beginning of 2019 (Figure 2.5).

The median value for liquid asset remains stable standing around 64% at the end of 2019, while an improvement of the lowest decile can be observed from Q3 2019 to Q4 2019, capturing undertakings holding more liquid assets.

²⁸ Please refer to Chapter 5, paragraph on “Insurers’ Holdings of investment funds and liquidity risk”, for a focused analysis related to unit-linked products and liquidity risk.

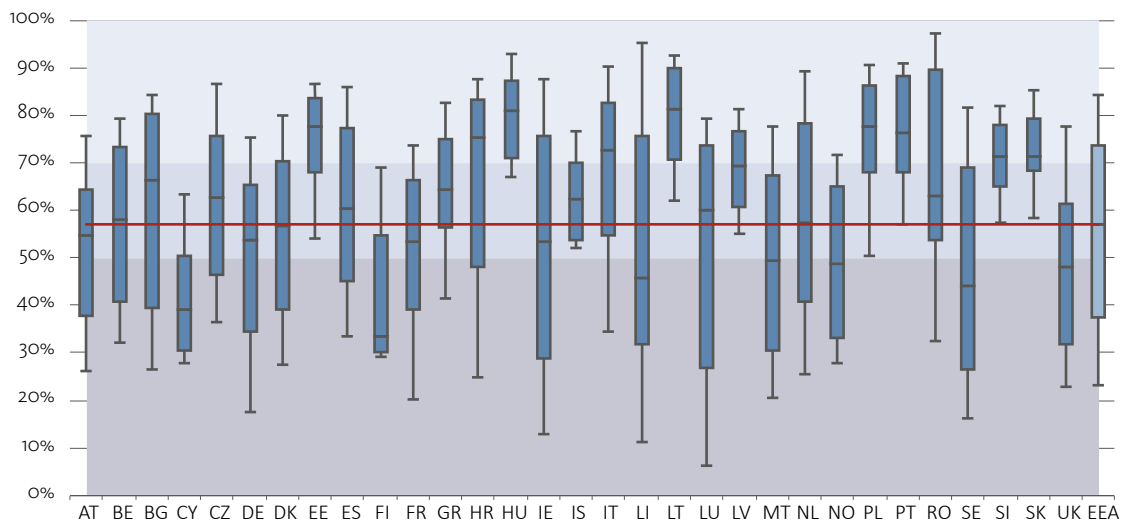
The liquid asset ratio varies considerable across EEA countries. Malta, Finland, Cyprus, Liechtenstein, Slovenia and Norway have liquidity asset ratios below 50%, while Estonia, Hungary and Poland have high liquidity asset ratios in comparison with the median, 57% (Figure 2.6), which could ease to absorb potential losses.

The strong hit on economic activities, which is reducing incomes, could result in decreasing premiums and lowering new business, affecting negatively insurer's disposable liquidity. In the end of 2019 insurers were well positioned, but if the assets they hold would become more illiquid and at the same time the premiums inflow would reduce and claims increase they might face liquid-

ity shortages. Even if they might not have difficulties in meeting payment obligations when they are due, they might potentially realise losses in selling illiquid assets to be able to meet these obligations.

Lapse rates in the life business increased prior to the Covid-19 outbreak (Figure 2.7). The median value increased from 2.25% in Q4 2018 to 2.5% in Q4 2019, and a further deterioration could be expected as a consequence of policyholders' income reduction. On the other hand, the ultra-low interest rates might potentially reduce the incentives to lapse insurance contracts and, particularly, the life insurance contracts with guarantees.

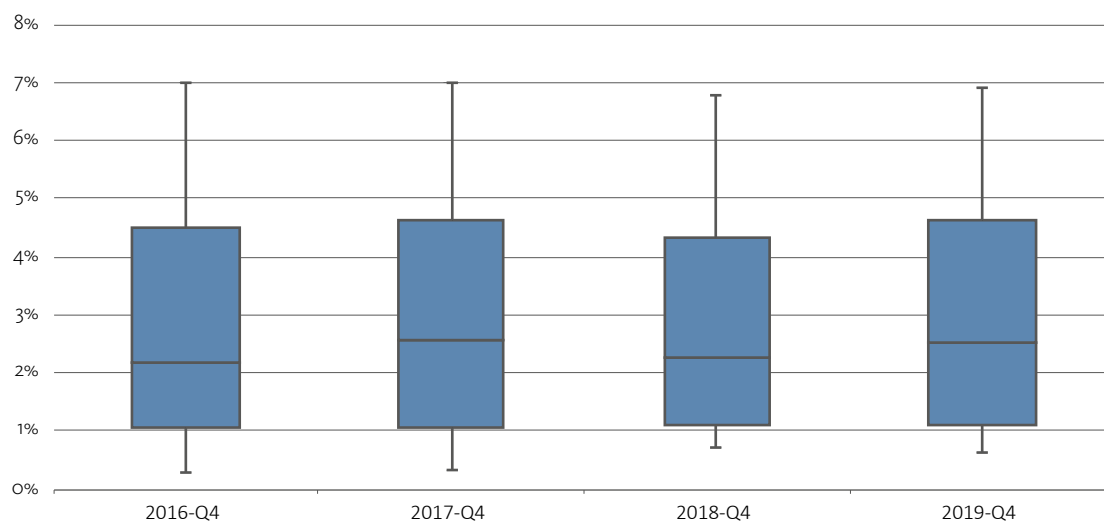
Figure 2.6: Liquid assets ratio by country (median, interquartile range and 10th and 90th percentile) and EEA median in Q4 2019.



Source: EIOPA QRS.

Note: The liquid assets ratio shows the proportion of liquid assets on total assets (excluding assets held for unit-linked). The ratio is calculated by applying different weights (ranging from 100% for cash to 0% for intangible assets) to different assets, according to the liquidity profile.

Figure 2.7: Lapse rates



Source: EIOPA QFG.

2.2. PROFITABILITY

Although insurer's profitability remained broadly unchanged in 2019, exceeding 2018 results, deterioration is expected looking ahead.

The median return on assets (ROA) increased from 0.48% in Q4 2018 to 0.61% in Q4 2019, whereas the median return on excess of assets over liabilities (used as a proxy of return on equity), increased from 5% in Q4 2018 to 9% in Q4 2019 (Figure 2.8 and Figure 2.9). The improvement in overall profitability seems to stem mainly from valuation gains in the investment portfolio of insurers driven by a strong rebound in equity prices after the drop in Q3 2019 and declining yields (and hence increasing values of bond holdings) throughout the first half of 2019. On the other hand, significant amounts of earned coupons and redemption amounts from matured bonds need to be reinvested at lower rates. Given market yields at very low levels, this might have an impact on insurer's profitability in the medium to long-term horizon²⁹. Moreover, decreased expected profits in future premiums (EPIFP)³⁰ to 10% in Q4 2019 from 10.3% in Q3 2019 indicates expectations of deteriorating profitability looking ahead.

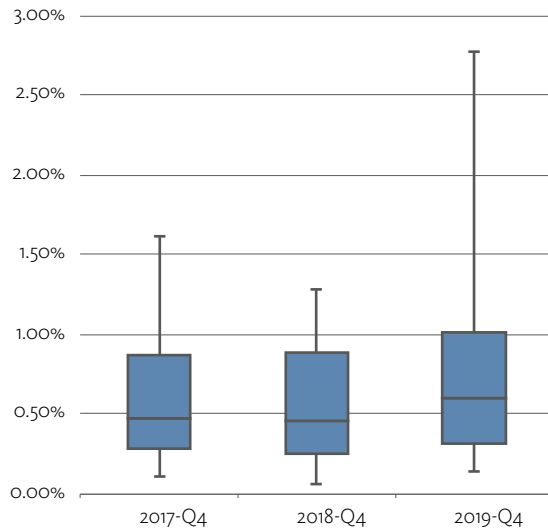
The latest developments in the financial markets pose a challenging environment for insurer's profitability.

The impact of the COVID-19 outbreak on the European insurance sector is multiple, both on the asset and on the liability side. Insurers' balance sheets are expected to be negatively affected by decreasing assets and increasing liabilities. The drops in equity indices have been of unforeseen magnitude and the sell-off of corporate bonds together with widening credit spreads due to 'flight-to-quality/safety' with risk free rate curves remaining at low levels, especially on the long end are in line with a "double-hit" type of scenario. A downward shift in risk free rates results in an increase of the value of liabilities as their valuation is performed using a market consistent term structure. Moreover, the negative duration gap accentuates the increase of liabilities. However, the long-term guarantee measures might compensate to some extent the impact. Finally, unit-linked profitability could be reduced, for insurers, because of the decrease of the unit fund value, which in turn reduces the inflow of the fund management charges.

²⁹ Report on the impact of Ultra Low Yields reflecting on the impact of Covid-19 on the insurance sector, EIOPA.

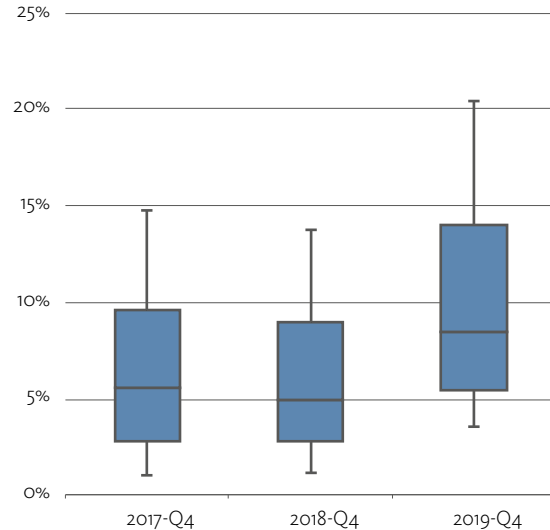
³⁰ Expected profits included in future premiums (EPIFP) are profits which result from the inclusion in technical provisions of premiums on existing (inforce) business that will be received in the future, but that have not yet been received."

Figure 2.8: Return on Assets (median, interquartile range and 10th and 90th percentile)



Source: EIOPA QFG (templates S.39.01.11 and S.02.01.02).

Figure 2.9: Return on Excess of Assets over Liabilities (median, interquartile range and 10th and 90th percentile)



Source: EIOPA QFG (templates S.39.01.11 and S.02.01.02).

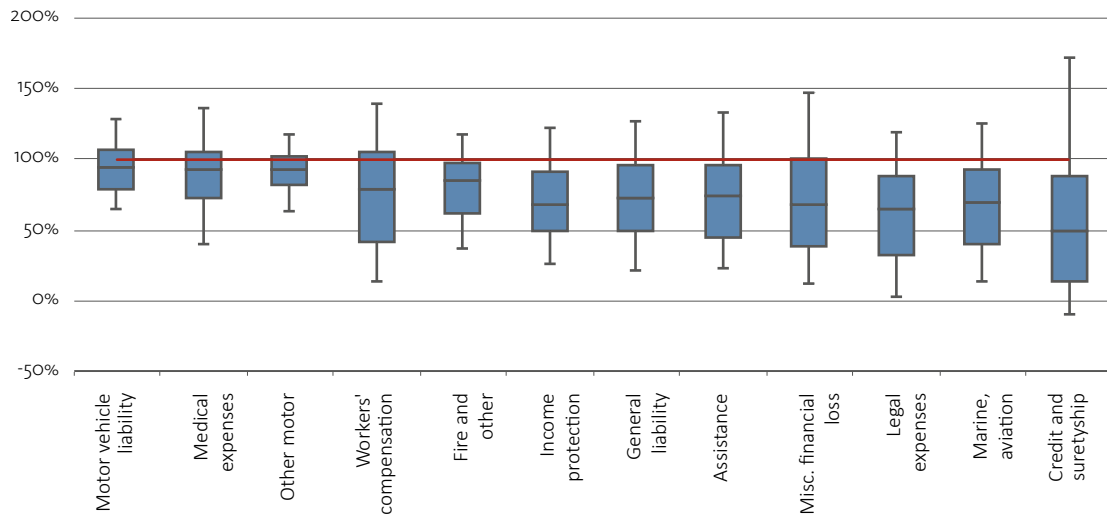
Underwriting profitability, for the non-life business, remained positive at the end of 2019 before the hit. The median Gross Combined Ratio for non-life business remained below 100% across all lines of business, indicating that most EEA insurers were able to generate positive underwriting results (excluding profits from investments (Figure 2.10))³¹. The gross combined ratio for credit and suretyship insurance exhibits a large dispersion; overall it is the most profitable line of business but significant outliers can be observed.

Recent market developments are posing difficulties for insurers to maintain their underwriting profitability levels. The impact on economic activities could

result in reducing premiums and lowering new business. Moreover, on the liability side, there could be potential negative effects via increase in claims, for life insurance sector as well as for non-life business. Credit and suretyship despite of being the most profitable line of business, it is expected to be significantly hit by the Covid-19 shock causing a severe impact on insurer's profitability, particularly to those insurer's which were already facing losses. Worker's compensation and miscellaneous financial loss is also expected to be negatively impacted by the Covid-19 shock. On the other hand, motor vehicle liability and other motor are estimated to partially compensate the negative impact on profitability positions via claims reduction.

³¹ The Gross Combined Ratio is the gross loss ratio plus the gross expense ratio.

Figure 2.10: Gross Combined Ratio across lines of business (median, interquartile range and 10th and 90th percentile) as of Q4 2019



Source: EIOPA Quarterly Solo.

Reference date: Q4 2019.

Note: Premiums, claims and expenses by line of business (Claims Incurred Gross Direct Business + Expenses incurred by line of business divided by Gross Earned Premiums)³².

32 Nominator S.05.01.02 ([R0310+ R0550, C0010-C0160]); Denominator S.05.01.02 [R0210, C0010-C0160]

BOX 2.1: ON THE RISK TRIGGERED BY LAWSUITS AGAINST INSURERS FOR COVID-19 COVERAGE OF NON-LIFE BUSINESS

The Covid-19 shock is having a big impact on economic activity and companies have started looking to their insurers for coverage of losses arising from the crisis. The financial news report that leading insurers such as Allianz, AXA, Hiscox, RSA, QBE and Zurich already face potential multi-million euro lawsuits from small businesses, operating in the hospitality and leisure industry, that allege legitimate business interruption claims have been rejected. The risk of becoming involved in lengthy and costly legal battles and of facing significant pay-outs adds up to the problems created by the worsening business environment which already threaten the profitability and potentially the solvency of some insurers.

Business interruption insurance can be sold as an add-on (i.e. an extension of coverage) of damage to property insurance. A part of these contracts clearly exclude the coverage of the consequences of pandemic, but complaints filed against insurers, raise questions on unclear phrases that are used in some insurance policies such as for example: Does COVID-19 cause physical damage or property loss? Is insurance coverage triggered when the virus is present on or near a policyholder's property?

In some cases, instead, business interruption insurance is a standing alone insurance with clearer contractual indication whether the losses covered are those caused by "diseases and epidemic" or "administrative closure". In the first case, policy wordings typically include a defined list of diseases covered. In some case,

the wording is less specific, offering cover for any “notifiable disease” outbreak, a disease required by law to be reported to public authorities. Global reinsurers became very cautious since the SARS outbreak and the losses they incurred in some of the cases. For example, a Hong Kong-based hospitality chain got paid-out a \$16 million claim for business interruption losses from the SARS outbreak in 2003. Since then, virus and bacterial infection exclusions have become a norm in insurance policies globally. Covid-19 is a new virus and it is, therefore, not a named disease in already commercialised policies (guarantees or exclusions).

In this Covid-19 crisis, for some contracts, business interruption claims could be very big compared to collected premiums. Once ambiguous aspect is whether the trigger of the losses is the Covid-19 or the measures taken by the government. A common view expressed by insurers that “core small commercial package policies” do not cover business interruption as a result of the government’s pandemic response. Britain’s Financial Conduct Authority (FCA) regulator asked the courts to clarify uncertainty over whether businesses can claim compensation for disruption caused by the coronavirus pandemic. In the US class actions have been announced but whether these will be initiated remains uncertain. This will depend on not only whether policyholders have the right to claim pay-outs, but also on whether a “class” can be legally identified, because among other things, the language in insurance policies is not always consistent and it is unclear whether every policyholder suffered losses in the same way. Adding to the pressure, U.S. insurers are facing mounting political pressure to cover claims from businesses that are losing revenue because of Covid-19-led shutdowns ordered by state and local governments.

Market research³³ suggests that in the UK many small businesses could stop buying business interruption insurance in the wake of the growing controversy over whether the policies will pay out for Covid-19 losses.

Legal uncertainties affect also other type of insurances. Online **travel insurer** InsureandGo Australia is facing severe criticism and threats of legal action after refusing to refund or allow deferments of policies for customers who are unable to travel due to restrictions and cancellations. The Covid-19 shock could potentially trigger also **directors and officers liability insurance (D&O)** claims payouts. This insurance covers liabilities of the corporation itself as well as the personal liabilities for the directors and officers of the corporation. While actions may not arise with the same immediacy as business interruption insurance litigation, the landscape of Covid-19 related litigation triggering D&O coverage could potentially evolve over time, when governmental bodies and shareholders may begin to inquire as to what went wrong. At least three companies, the online meeting service Zoom, Norwegian Cruise Lines and Inovio Pharmaceuticals, have already received lawsuits targeting directors or officers over corporate disclosures on the business risks of Covid-19.

Not only there is uncertainty about whether claims should be paid out, but there is also the possibility that insurance premiums will be partially refunded (e.g. motor vehicle insurance). With less traffic there have been fewer accidents and fewer car insurance claims. The prospect of paying claims is what insurance rates are based on. More than 20 major car insurers in the US are providing refunds ranging from 15% to 25%, on premiums for April and May. Some are in the form of cheques in the post, and others in the form of credits towards future payments. European car insurers are also facing calls to give refunds, but so far only few have proactively taken this step.

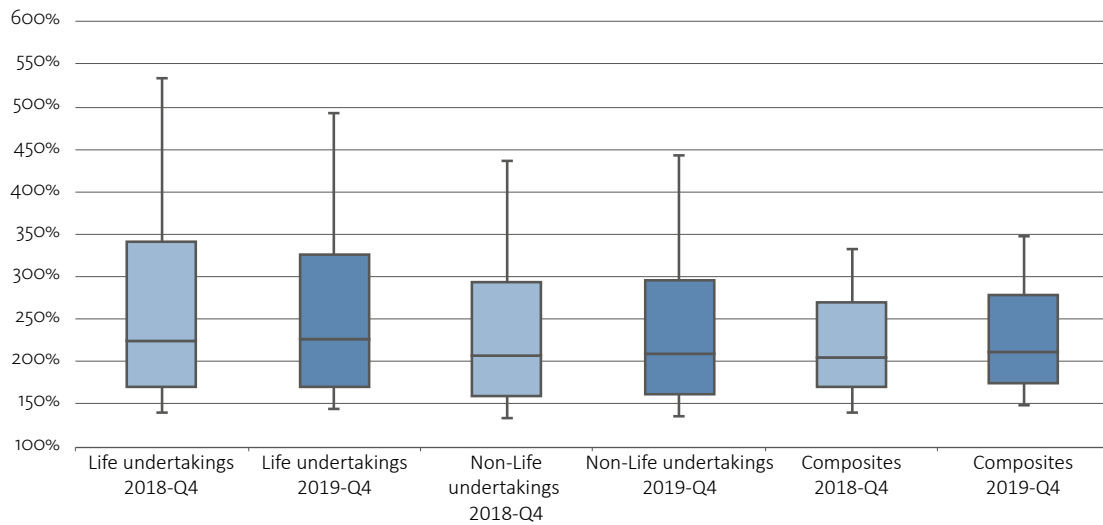
³³ The article “UK companies to shun business interruption insurance” on Financial times discusses results of research carried by McKinsey & Company. <https://www.ft.com/content/ba7b8321-73a0-442d-ac85-74a09019223>
For an overview of the potential impact of Covid-19 on non-life insurance: <https://www.mckinsey.com/industries/financial-services/our-insights/coronavirus-response-short-and-long-term-actions-for-p-and-c-insurers>

2.3. SOLVENCY

High solvency positions before the Covid-19 outbreak provide insurers certain buffers to deal with the current situation (Figure 2.11). The increase in the risk free curve at the end of 2019 eased it for the insurers to maintain their solvency positions, notwithstanding the prolonged low interest rate environment. Furthermore, the number of life and composite insurance undertakings with SCR ratios below 100% decreased from 1 in Q4 2018 to 0 in Q4 2019, while the number of non-life insurance undertakings with SCR ratios below 100% threshold increased from 4 in Q4 2018 to 7 in Q4 2019 (Figure 2.12). On the other hand non-life undertakings seem to be better capitalized before the corona crisis than in Q4 2018 as the number of undertakings with SCR above 150% significantly increased.

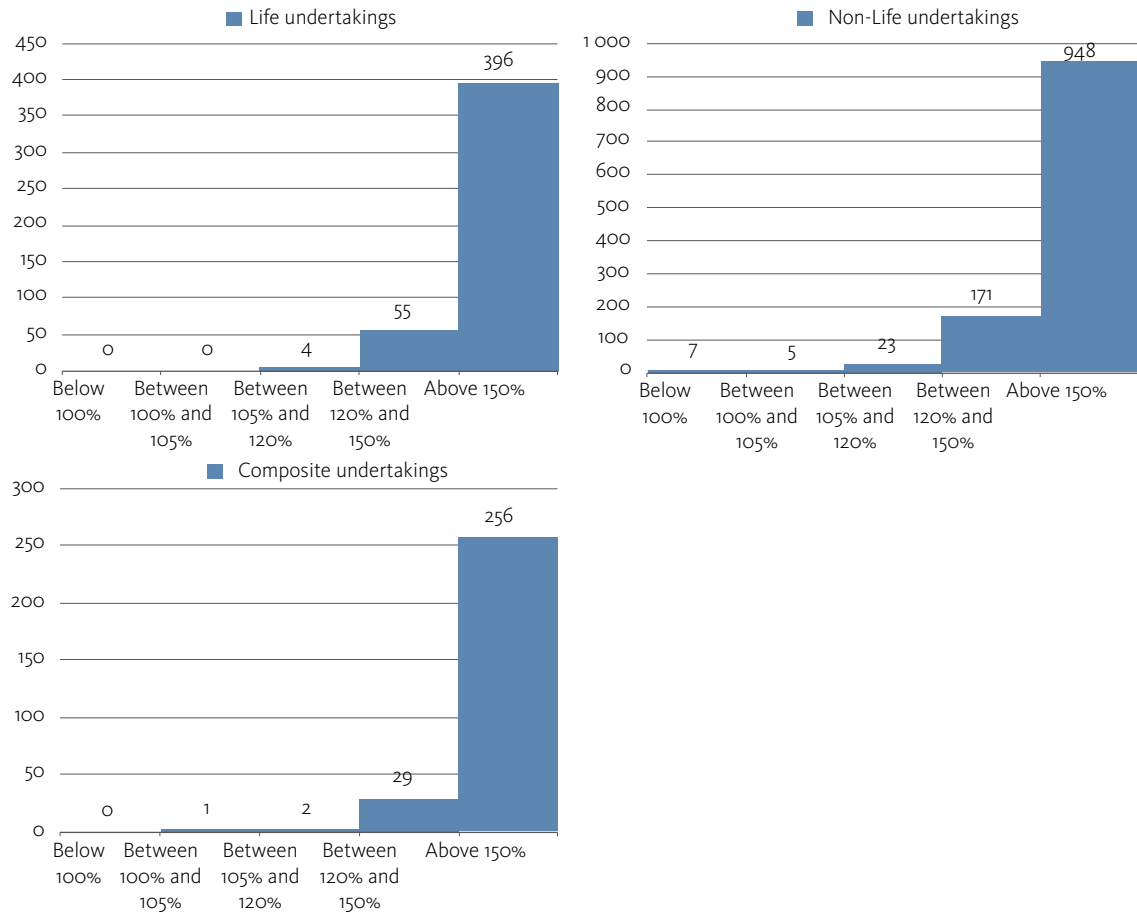
The insurer’s solvency positions are expected to deteriorate due to the latest market developments related to the Covid-19 outbreak, as described in Chapter 5. The insurers’ balance sheets is expected to be negatively affected by increasing liabilities and decreasing assets. According to internal projections and using shock from end-2019 to 21 April 2020, it is expected a drop in the excess of assets over liabilities of 514 billion euros (35% reduction) and the median SCR ratio was projected to decrease to 178% from 210% in Q4 2019. Furthermore, the dissimilar impact of the Covid-19 outbreak across countries along with the considerable differences of SCR ratios (Figure 2.11 and Figure 2.13), suggest asymmetrical capacity to absorb the negative impact among the EEA countries. In particular those countries with lower SCR ratios could face stronger difficulties compared to those better capitalized.

Figure 2.11: SCR ratio (median, interquartile range and 10th and 90th percentile) in 2019



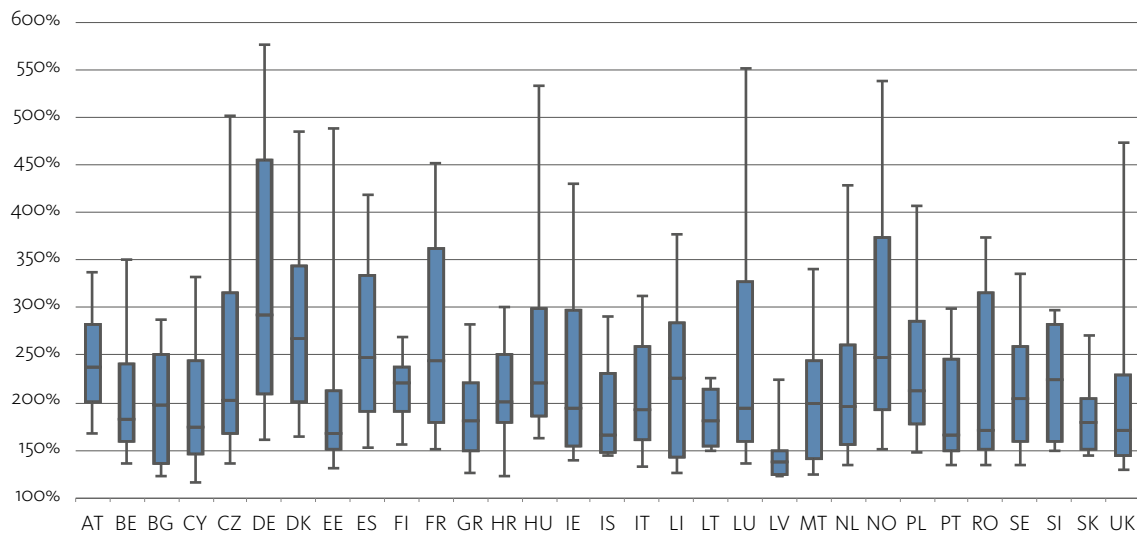
Source: EIOPA QRS.

Figure 2.12: Intervals of SCR ratios for solo undertakings as of Q4 2019 by type of undertakings



Source: EIOPA QRS.
Reference rate: Q4 2019.

Figure 2.13: SCR ratio by country (median, interquartile range and 10th and 90th percentile)



Source: EIOPA QRS.
Reference date: Q4 2019.

2.4 REGULATORY DEVELOPMENTS

On November 2019 the International Association of Insurance Supervisors (IAIS) adopted the **Common Framework for the Supervision of Internationally Active Insurance Groups (ComFrame)**, which establishes supervisory standards and guidance focusing on the effective group-wide supervision of Internationally Active Insurance Groups (IAIGs). As part of ComFrame, the IAIS is developing an Insurance Capital Standard (ICS), which aims to provide a globally comparable risk-based measure of capital adequacy of IAIGs. The adopted **ICS Version 2.0** will be used during a five-year monitoring period for confidential reporting to the group-wide supervisors and discussion in supervisory colleges; in a second phase of implementation, after the monitoring period, the ICS will be implemented as a group-wide Prescribed Capital Requirement for IAIGs as part of ComFrame.

The IAIS also adopted in November 2019 the **Holistic Framework for the assessment and mitigation of systemic risk in the global insurance sector**; as part of the Holistic Framework, the IAIS revised certain Insurance Core Principles and ComFrame materials with the aim of enhancing or adding supervisory policy measures specifically designed to assess and mitigate potential systemic risk building up in the insurance sector.

On December 2019, the **Sustainability Disclosures Regulation** (Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector) was officially published; it provides specific requirements of transparency regarding financial products (including Insurance Based Investment Products, IBIPs) that pursue the objective of sustainable investment or that have similar characteristics. These requirements will be supplemented by the Taxonomy Regulation, for which a compromised text was agreed in December.

The European Supervisory Authorities (ESAs) published on December 2019 **Joint guidelines on cooperation and information exchange, establishing colleges of anti-money laundering and countering the financing of terrorism (AML/CFT) supervisors**, which are aimed to ensure effective cooperation and information exchange between competent authorities for the AML/CFT supervision of firms that operate on a cross-border basis.

EIOPA published on February 2020 its **Guidelines on outsourcing to cloud service providers** with the objective to provide clarification and transparency to market participants avoiding potential regulatory arbitrages and foster supervisory convergence regarding the expectations and processes applicable in relation to cloud outsourcing.

On 20 March 2020 EIOPA issued **Recommendations on supervisory flexibility regarding the deadline of supervisory reporting and public disclosure - coronavirus/COVID-19** so that undertakings can concentrate their efforts on monitoring and assessing the impact of the coronavirus/COVID-19 situation as well as ensuring business continuity; the recommendations aim to offer operational relief in allowing for certain delays in reporting and public disclosure while highlighting the need for insurers to publish appropriate information on the effect of the coronavirus/COVID-19 in the published information.

EIOPA issued in March 2020 a **Statement on actions to mitigate the impact of coronavirus/COVID-19 on the EU insurance sector** addressing business continuity and solvency concerns, as well as a recommendation to national competent authorities on supervisory flexibility regarding the deadline of supervisory reporting. More specifically, EIOPA aims to offer operational relief in allowing for delays in reporting and public disclosure in the following cases. EIOPA will decrease its requests of information and the consultations to the industry to essential elements in order to support insurers' business continuity to their clients and provide for flexibility regarding upcoming supervisory reporting deadlines to enable insurers to concentrate efforts on monitoring and assessing impact of coronavirus/COVID-19 and maintaining business continuity. On the capital side, EIOPA encourages insurance companies to take measures to preserve their capital position in balance with the protection of the insured, following prudent dividend and other distribution policies, including variable remuneration.

On April 2020, **EIOPA Statement to insurers and intermediaries, urging them to take steps to mitigate the impact of coronavirus/COVID-19 on consumers** was issued. Access to and continuity of insurance services should be considered essential in the context of the outbreak. Moreover, insurers and intermediaries are asked to: Provide clear and timely information to consumers on contractual rights; treat consumers fairly and be explicit in all communications; Inform consumers about contingency measures taken; continue applying product oversight and governance requirements and, where necessary, carry out a product review; and consider the interests of consumers and exercise flexibility in how they are treated, where reasonable and practicable.

EIOPA published in April 2020, a **statement on dividends distribution and variable remuneration policies in the context of COVID-19**, where EIOPA urges (re)insurers to temporarily suspend all discretionary dividend distributions and share buy backs.

BOX 2.2: TRADE CREDIT INSURANCE AND COVID-19: FINANCIAL STABILITY AND STATE AID

Trade credit insurance covers manufacturers, traders, and service providers against the risk that their buyer does not pay (for example, following bankruptcy or insolvency) or in case the payment is delayed. Typically, the trade credit insurance policy covers a fraction of the outstanding debt (for example, from 75% to 95%). Most of trade agreements also rely, to some extent, on trade finance, which is also facilitated by credit insurers guaranteeing credit-related bank lending. Trade credit can cover domestic and/or export credit risk. Before Covid-19, short-term (less than 2 years) export credit risk for countries listed in the European Communication³⁴ (EEA plus a few additional countries) was considered as marketable. This means that State insurers could not cover these risks unless they fully split that part of the business and do not receive any State support for that part, while credit risks for countries not in the list is considered non-marketable, i.e. it can be covered by State insurers. Long-term export credit risk is also considered as non-marketable.

Amid the European wide economic lockdown, the risk of insolvencies increased considerably. Reopening of the economies accompanied with the risk of a second wave of virus outbreak poses further challenges both for the companies themselves to manage effectively these risks, but also for pricing credit risk for the affected companies.

The relatively short tail nature of trade credit insurance business allows insurers to manage the recession risk caused by Covid-19 to a certain extent. Among other actions, the management of the risk could take the form of decreasing and even withdrawing capacity to sectors affected the most by the economic lockdowns or are expected to be further affected in the near future. Alternatively, repricing could also take place.

The above-mentioned developments could have a financial stability impact, since the risk of slower economic recovery and of an insolvency domino would be more pronounced. On the one hand, lower (or more expensive) trade credit insurance would adversely affect trading companies, since trade receivables is usually dominant item on a trading company's balance sheet, hence they need to secure them. On the other hand, trade credit insurance could be used as a mean to facilitate advantageous financing terms in case trade receivables are posted as collateral or ease the constraints for securitising trade receivables in case of liquidity shortages, hence lack or expensive trade credit insurance would have negative effect on the economy.³⁵ Finally, banks would also bear more credit risk on the absence of trade credit insurance, amplifying their already stretched positions.

Among other initiatives,³⁶ on 19 March 2020 the European Commission adopted a "Temporary Framework for State aid measure to support the economy in the current COVID-19 outbreak".³⁷ Based on Article 107(3) (b) of the Treaty on the Functioning of the European Union,³⁸ the Framework provides for five type of State aid that Members can take prior approval of the European Commission, one of which is to introduce additional flexibility to enable short-term (i.e. less than two years) export credit insurance to be provided by State insurers where needed by considering these risks as non-marketable for the countries that could demonstrate a lack of private

34 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2012.392.01.0001.01.ENG&toc=OJ:C:2012:392:TOC

35 Similar arguments regarding trade credit can be found in "Trade credit insurance & surety: taking stock after the financial crisis", October 2014, Swiss Re.

36 For instance, the use of the flexibility under the UE's Fiscal Rules, the Coronavirus Response Investment Initiative for €25 billion, measures on transport and tourism sector, etc.

37 https://ec.europa.eu/competition/state_aid/what_is_new/sa_covid19_temporary-framework.pdf

38 Which includes, in the list of State aids that are considered compatible with the internal market, "aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State".

cover. The other four State aids foreseen by the Temporary framework are aid in the form of: direct grants (or tax advantages) up to €800,000 to a company, guarantees on bank loans, subsidised interest rates and guarantees and loans channelled through credit institutions.

Furthermore, on 28 March 2020, European Commission published a Communication³⁹ that considers all short-term commercial and political risks associated with export to the countries of the list, including EU Members, as temporary non-marketable until 31 December 2020. This allowed State insurers to cover these risks. However, this cover should comply with the requirements of Communication 2012/C 392/0⁴⁰, which guarantee that it does not provide exporters with an advantage. Thus, since it cannot be considered as a State aid, any scheme implemented following this Communication does not require prior approval from the European Commission.

39 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.Cl.2020.101.01.0001.01.ENG&toc=OJ:C:2020:101:TOC>

40 [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012XC1219\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012XC1219(01)&from=EN)

Some Members (Czech Republic⁴¹, France⁴², Germany⁴³ and Belgium⁴⁴) have already implemented State aid schemes, while others (Denmark, Italy, Spain) will also implement a scheme but do not have the approval of the European Commission yet. These schemes cover or enhance trade insurance, usually including domestic and export risk, although using very different formulas: Coinsurance vs. Reinsurance vs. Guarantee of loans, State insurer vs. State directly, Cover of contracts issued in 2020 vs. Cover of receivables existing in 2020. Other members have also put in place schemes for short-term export credit insurance under the European Commission Communication of 28 March 2020 (France⁴⁵, Italy⁴⁶, Portugal⁴⁷) that also present some differences.

41 https://ec.europa.eu/commission/presscorner/detail/en/IP_20_794

42 https://ec.europa.eu/commission/presscorner/detail/en/ip_20_650

43 https://ec.europa.eu/commission/presscorner/detail/en/ip_20_653

44 https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_57188

45 https://www.economie.gouv.fr/files/files/PDF/2020/DP_Plan_de_soutien_aux_entreprises_francaises_exportatrices.pdf

46 <https://www.gazzettaufficiale.it/eli/id/2020/04/08/20G00043/s>

47 <https://dre.pt/application/conteudo/130243054>

3. THE EUROPEAN REINSURANCE SECTOR

Catastrophe activity in 2019 was benign with global insured losses below the average of the last 10 years. Consequently, the resilience of the reinsurance companies was strengthened after record losses in 2017 and high losses in 2018. Renewals in 2019 and January 2020 saw moderate price increases, mostly in regions and lines of business affected by catastrophes. Growth in global reinsurance capital was driven by an increase in traditional capital, whereas alternative capital declined due to the high natural catastrophe losses in 2017 and 2018. The issuance of new insurance-linked securities (ILS) in 2019 was lower than in the two previous years.

The relevance of the reinsurance sector in insuring losses from extreme risk events should become visible in the context of the COVID-19. However, the impact on the sector is still to be assessed, as data for the first quarters of 2020 has not become available yet. Profitability of the sector is likely to be impacted through both investment and underwriting results. Falls in equity markets as well as low interest rates are combined with potential increasing claims in affected lines of business. Notwithstanding, reinsurers' solvency ratios have been well above the regulatory requirements and should be able to withstand the negative impact of the outbreak.

3.1. MARKET SHARE AND GROWTH

Reinsurance gross written premiums (GWP) remained at around 15% of total GWP in the EEA in Q4-2019, standing at EUR 224 bn (Figure 3.1). Non-life reinsurance accepted represented 9% of total GWP (EUR 134 bn), while life reinsurance obligations accounted for 6% (EUR 90 bn). Overall reinsurance premiums increased by 4% when compared to Q4-2018, owing mostly to an increase in non-life proportional reinsurance (Figure 3.2). The latter was primarily driven by increased premiums written for the fire and other damage to property insurance, general liability and motor vehicle liability insurance lines of business (Figure 3.3).

Reinsurance premium growth will very likely be impacted by the current COVID-19 outbreak, but it will be possible to assess the extent of the impact only once Solvency II data for the year 2020 becomes available. On one hand, the reduction in economic activity due to the lockdown measures and travel restrictions in place in many jurisdictions will most certainly contribute to lower the demand for certain business lines (e.g. motor vehicle, marine, aviation and transport, etc.). On the other hand, the extent to which insurers will adjust risk mitigating techniques, including the use of reinsurance, to support earnings and solvency levels remains uncertain.

Figure 3.1: Gross Written Premiums in the EEA (in EUR billion and %)

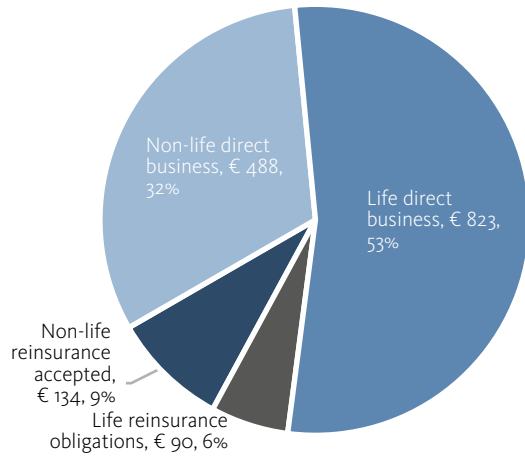
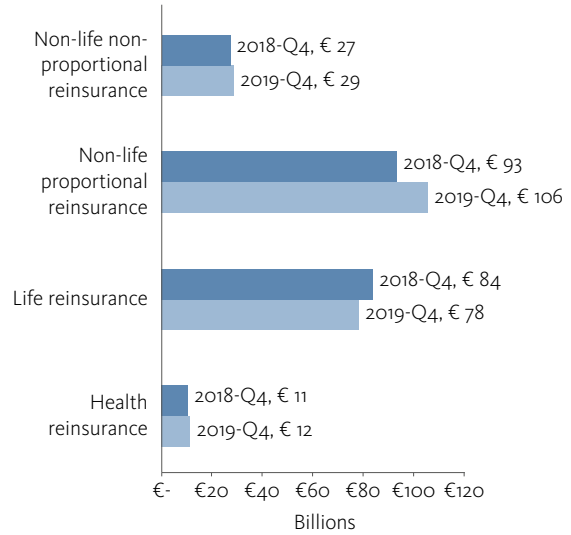


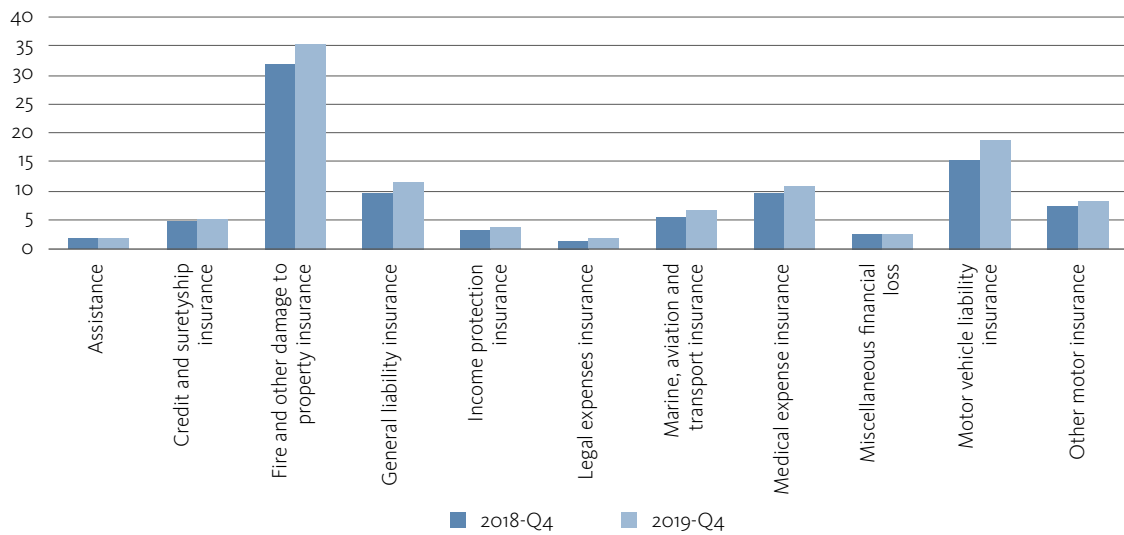
Figure 3.2: Reinsurance Gross Written Premiums in the EEA (in EUR billion)



Source: EIOPA Quarterly Solo
Reference date: Q4 2019

Note: Year-to-date amounts. Non-life reinsurance accepted includes proportional and non-proportional reinsurance. Life reinsurance obligations include life reinsurance and health reinsurance.

Figure 3.3: Gross Written Premiums for non-life proportional reinsurance by Line of Business (in EUR billion)



Source: EIOPA Quarterly Solo

The impact of COVID-19 on global reinsurance capital and reinsurance rates is also to be determined. So far, effects have been noted on the market for alternative capital, specifically for ILS, with activity levels declining and some investors fearing potential outflows. The effects were visible in both primary and secondary markets. A few new issuances were postponed until volatility declines and some investors sold off part of their holdings of ILS in search for cash, amid a lower correlation of the asset class with broader financial markets. Despite the current uncertainty, a strong issuance is still expected in the second quarter.⁴⁸

Available data shows a peak in global reinsurance capital in September 2019 (USD 625 bn), an increase of around 7% since end-2018 (USD 585 bn).⁴⁹ Capitalisation of traditional reinsurers rose by 9% to USD 532 bn in the same period (year-end 2018: USD 488 bn) due to a generally strong operating performance, lower global catastrophe loss activity and good investment performance. Since 2010, reinsurance capital grew by 33 percent, split into an increase of USD 85 bn in traditional capital and USD 69 bn in alternative capital.

During the first 9 months of 2019, alternative capital fell by 4.3% to USD 93 bn. To a large extent this was caused by a reduction in collateralized reinsurance, even though this type of transaction still represents the bulk of the alternative capital. Significant capital, especially regarding collateralised reinsurance, remains trapped because of prior losses. The total outstanding insurance-linked securities (ILS) amounted to USD 40.7 bn at year-end 2019, an all-time high, while issued ILS decreased from USD 13.9 bn in 2018 to USD 11.1 bn in 2019.⁵⁰

The reduction of alternative capital was driven by the payment of losses and investor redemptions after peak peril losses in the years 2017 to 2018. Investors fear that the impact of climate change is not fully reflected in the historical data supporting catastrophe models. This affects the market supported by alternative capital, especially collateralized reinsurance, e.g. in Florida. Nevertheless, the alternative reinsurance market remains attractive due to the diversifying nature of catastrophe-exposed business and the relatively high returns, especially after a potential re-evaluation of risk.

Reflecting these market conditions, average reinsurance rates increased moderately in renewals in 2019 and January 2020. Overall, capacity in the market was more than sufficient. However, outcomes varied significantly depending on the region, line of business and cedant. For the April and June 2020 renewals, S&P was expecting a repricing of risks after major typhoon losses in Japan and market issues in Florida to lead to a significant increase of reinsurance rates.⁵¹

3.2. PROFITABILITY

In 2019, the global insurance industry catastrophe losses were considerably lower than the 2017 and 2018 record figures and fell even below the long-term average. According to estimates, natural catastrophes caused worldwide economic losses of USD 150 bn, a decrease of USD 36 bn from 2018. The insured losses amounted to USD 52 bn, against a total of USD 86 bn in the previous year. The overall economic losses as well as the insured losses sank below the 10-year average of USD 187 bn and USD 65 bn, respectively. The number of fatalities decreased even further from 15,000 in 2018 to about 9,000 in 2019, thus being significantly lower than the 10-year average of 37,400 as well as the 30-year average of 51,600.

Severe tropical cyclones were most prominent in terms of losses, for both economic and insured losses.

The two costliest natural disaster events were typhoons Hagibis and Faxai in Japan with overall losses of USD 26.1 bn and insured losses of USD 17.0 bn (see Table 3.1), thus exceeding even 2018 record losses in Japan caused by typhoons Jebi and Trami by USD 9.6 bn overall and USD 5.0 bn insured. The next two largest natural catastrophes were caused by storms on the American continent, the costliest of which was Hurricane Dorian causing catastrophic damage in the Bahamas, but largely sparing the US mainland. In Europe, the greatest cause of losses were heatwaves and severe hailstorms. Summer storms led to USD 2.5 bn overall losses, USD 0.9 bn of which were insured.

48 [www.artemis.bm: https://www.artemis.bm/news/busy-q2-of-catastrophe-issuance-expected-despite-covid-19-lull-aon/](https://www.artemis.bm/news/busy-q2-of-catastrophe-issuance-expected-despite-covid-19-lull-aon/)

49 AON Benfield: Reinsurance Market Outlook January 2020.

50 [www.artemis.bm: http://www.artemis.bm/dashboard/](http://www.artemis.bm/dashboard/)

51 [www.artemis.bm: https://www.artemis.bm/news/significant-reinsurance-rate-increases-likely-for-florida-and-japan-sp/](https://www.artemis.bm/news/significant-reinsurance-rate-increases-likely-for-florida-and-japan-sp/)

Table 3.1: The five largest natural catastrophes in 2019, ranked by insured losses

Date	Event	Region	Overall losses (USD bn)	Insured losses (USD bn)
12-13/10/2019	Typhoon Hagibis	Japan	17	10
09/09/2019	Typhoon Faxai	Japan	9.1	7
27/08-09/09/2019	Hurricane Dorian	Caribbean, USA	5.6	4
17-31/05/2019	Severe storm, tornado	USA	4.7	3.6
6-14/08/2019	Typhoon Lekima	Japan	8.1	0.84

Source: Munich Re, NatCatSERVICE.

The last renewals revealed that the competitive pressure in the reinsurance sector remains high. Moreover, the ability to release reserve from previous years appears to have been diminished, whereas the long-term business is getting less profitable, as the high interest rates calculated in previous rates are difficult to earn. Against this background, getting risk-adequate prices at the upcoming renewals is crucial for the reinsurance companies.

Reinsurance underwriting has remained profitable in 2019, with median combined ratios for both non-life and life reinsurance remaining below 100%.

The median gross combined ratio for EEA reinsurers for non-life direct business and accepted proportional reinsurance has remained broadly stable from year-end 2018, while the distribution of the combined ratio for non-proportional reinsurance has shifted upwards (Figures 3.4 to 3.6), mainly driven by the “Casualty” line of business⁵². Combined ratios for life reinsurance obligations remained overall stable since year-end 2018, with a slight improvement in the lower end of the distribution.

Underwriting profitability is expected to be negatively affected by the impact of COVID-19 on insurance claims and premiums. For non-life business, this impact should be related to cancelled major events. According to Willis Re, event cancellation claims could amount to insured losses of US\$4 billion to US\$6 bn globally, which should be equivalent to a midsize hurricane, and about 1% of the global reinsurance sector’s capital base (US\$559 bn).⁵³ Impact could also be expected for claims across other lines of business, such as medical expense insurance, marine, aviation and transport insurance, credit and suretyship insurance and income protection insurance. This impact could be partly offset by a reduced exposure in lines of business such as workers’ compensation and motor vehicle insurance. For life business, the impact on claims will be linked to developments in mortality rates in relevant jurisdictions. Underwriting profitability could be further impacted by reduced premium growth, as explained in chapter 3.1.

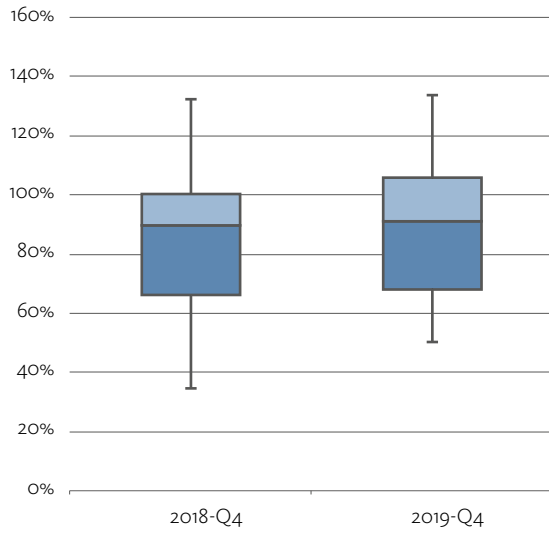
⁵² Liability insurance in the US was not very profitable in the end of 2019. Reinsurance is a global business, so what happens outside EEA matters for European groups.

On <https://www.reinsurancene.ws/munich-res-q1-profit-falls-as-covid-19-losses-reach-e800mn/>

Munich Re has made the following statement: “...However, the reinsurer also decided to selectively discontinue business including third-party liability in the US, which failed to meet risk/return expectations.”

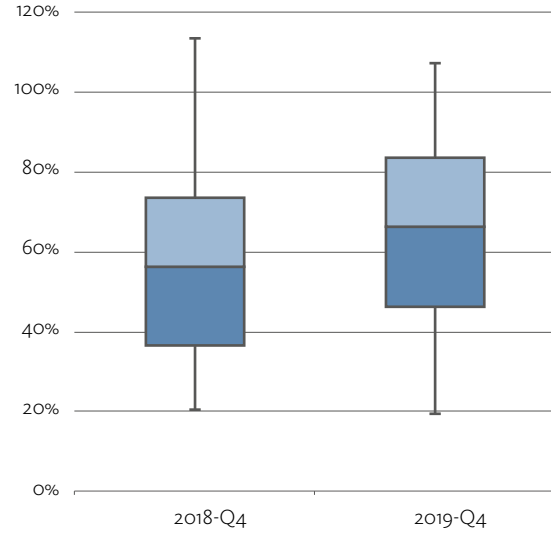
⁵³ “Moving on from the initial assessment phase of COVID-19”, Willis Re, 23 April 2020.

Figure 3.4: Gross Combined Ratio for non-life direct business and accepted proportional reinsurance of EEA reinsurance undertakings (median, interquartile range and 10th and 90th percentile)



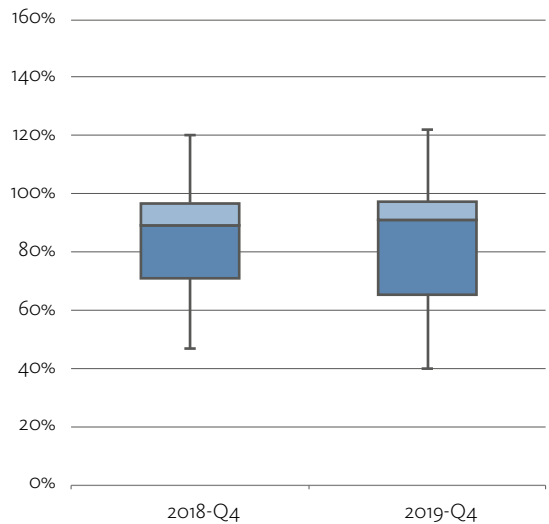
Source: EIOPA Quarterly solo
Note: outliers have been excluded.

Figure 3.5: Gross Combined Ratio for accepted non-proportional reinsurance of EEA reinsurance undertakings (median, interquartile range and 10th and 90th percentile)



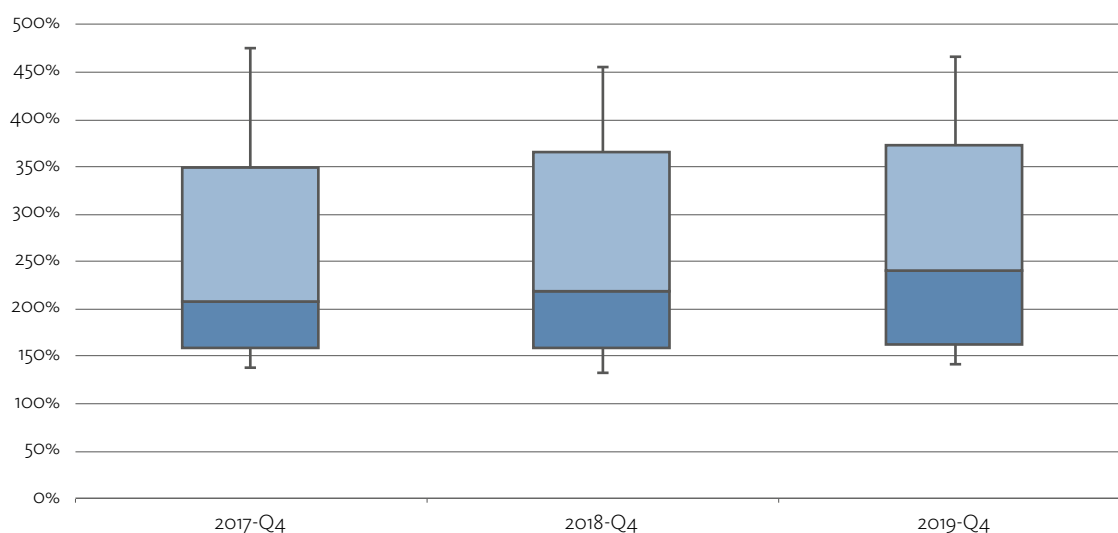
Source: EIOPA Quarterly solo
Note: outliers have been excluded.

Figure 3.6: Gross Combined Ratio for life reinsurance obligations of EEA reinsurance undertakings (median, interquartile range and 10th and 90th percentile)



Source: EIOPA Quarterly solo
Note: outliers have been excluded.

Figure 3.7: Solvency ratio of EEA reinsurance undertakings (median, interquartile range and 10th and 90th percentile)



Source: EIOPA Quarterly Solo

3.3. SOLVENCY

Solvency positions of reinsurance undertakings operating in the EEA improved across the whole distribution during 2019. The median solvency ratio increased by 22 percentage points since Q4-2018, to 240% in Q4-2019 (Figure 3.7). Generally, reinsurance companies coped very well with the record losses observed in 2017 and 2018 and maintained a very strong capital position after the lower level of catastrophe losses and positive developments in the stock markets in 2019.⁵⁴

Increased claims, as well as the sharp fall in equity markets and declines in interest rates amidst the COVID-19 outbreak, should add pressure to reinsurers' solvency positions. The situation could be further aggravated due to rising credit spreads and in case of rating downgrades or defaults on corporate bonds. Major

European reinsurers highlight in their recently published Solvency and Financial Condition Reports for 2019 that hedging and asset and liability management strategies, including the use of the volatility adjustment, should help mitigating the impact on solvency positions. In addition, internal pandemic models should already take into account scenarios of significant increases in mortality rates.

With solvency ratios generally well above the regulatory requirements, the reinsurance industry is well capitalised and should be able to withstand the negative economic impact of the COVID-19. Notwithstanding the general robust capital position of the sector, it remains important to exercise prudence against the current background of uncertainty, also in what concerns distribution policies, such as dividend payments and variable remuneration. This has been highlighted in recent statements by insurance regulators, including EIOPA.⁵⁵

⁵⁴ "Global Reinsurance Guide 2020", Fitch Ratings, September 2019.

⁵⁵ "EIOPA statement on dividends distribution and variable remuneration policies in the context of COVID-19", 12 April 2020.

BOX 3.1: THE IMPACT OF THE COVID-19 SHOCK ON REINSURERS

As a result of the Covid-19 outbreak the reinsurance sector has been negatively impacted. Stock markets have declined substantially and reinsurers are largely exposed towards equity, especially unlisted equity. Information already available, for some specific reinsurers, show also a deterioration in Q1 2020 of the underwriting profitability with respect to the previous year.

Cancellation or postponement of major events, casualty business, commercial and professional liability and workers' compensation areas have been highly impacted by Covid-19. Cancellation or postponement of major events (a line of business Corporate Solutions) seem to be the most affected non-life segment of reinsurers. Big reinsurers already warned about exposures to the postponement and cancellation of large events such as major sport events (e.g. Tokio Olympic Games), conferences, trade shows and international conferences. As indicated by several reinsurance groups, declared losses are reserves posted for anticipated claims related to event cancellation. In the upcoming months also other line of business such as casualty business, commercial and professional liability (See Box 2.1 in Chapter 2) and workers' compensation, might be potential negatively affected. In many cases, sickness or mortality due to virus contraction at work could have to be covered by worker compensation insurance.

The losses stemming from natural catastrophes also contributed to the deterioration of Q1 2020 reinsurers' results. Major losses from natural catastrophes also increased year-on-year for some relevant reinsurers, above the reported results in Q1 2019. The two typhoons occurred in Japan, along with the enormous fires happened in Australia during the last quarter of 2019 were very significant in terms of losses, for both economic and insured losses.

The combined ratios along with the net profit and operating income for several significant reinsurance groups observed in the first quarter confirm also a worsening, down from the results reported in the first quarter of 2019. The profit for most reinsurers remains positive in Q1 2020, in some cases driven by the positive affected LoBs by Covid-19, such as MTPL, where claims dramatically dropped. On the other hand, gross written premiums (GWP) seem to have an heterogeneous performance among reinsurers.

Heretofore, the losses faced by reinsurers in the first quarter of the year seem to have only a minor impact for big reinsurers due to their robust capital positions, however high uncertainty, due to potential future claims, might pose difficulties. As stated by reinsurers and reported in the news, the sector benefited from strong capital positions at the end of 2019 to absorb the losses stemming from Covid-19 and natural catastrophes in the first quarter of the year. However the high uncertainty and potential significant increase in claims, higher than expected claims settlements, adverse litigation outcomes or judicial could directly impact the profitability and solvency positions of some reinsurers (as discussed in Box 2.1).

Furthermore, the ratings assessments for some reinsurance groups might drive to worse credit quality evaluation, in particular for those reinsurers groups with relatively thin capital buffers and significant exposure to financial market volatility through their asset portfolios. For instance, Swiss Re was already downgraded by Fitch Insurer Financial Strength (IFS) Rating to 'A+' (Strong) from 'AA-' (Very Strong) and Long-Term Issuer Default Rating (IDR) to 'A' from 'A+'. A deterioration of the credit quality rating of reinsurers also affects, to some extent, the worthiness of reinsurance coverage provided to direct insurers.

4. THE EUROPEAN PENSION FUNDS SECTOR

In 2019, the European occupational pension fund sector's investments benefitted from positive developments in the stock markets, yet, in particular the Defined Benefit sector, continued to be negatively affected by the persistent low interest rate environment due to low discount rates for market-consistently valued liabilities. The investment returns throughout the EEA have reached new heights, marking a strong turning point from the difficult equity markets in 2018. The prolonged low, and negative, interest rate environment affected Defined Benefit pension funds, as long-term guarantees continued to be expensive. Yet, the aggregate effect of the positive market developments throughout 2019 resulted in improved cover ratios throughout the EEA.

Following a positive year for European IORPs with regard to investment returns and substantial increases in asset market values and improved cover ratios, the sector has been heavily affected by the market turmoil in the wake of the Covid-19 pandemic, which swept away substantial value gains of 2019. In line with the findings of the 2019 IORP stress test, IORPs are expected to keep a long-term objective to their investments and most IORPs aim at re-balancing to pre-stress allocations within 12 months.

Due to the character of the crisis, IORPs may not only face further market volatility and impairment of assets in a persistent low interest rate environment, yet may be subject to funding and liquidity concerns due to suspended or lowered contributions from sponsors and members. Deteriorating coverage and funding ratios of Defined Benefit IORPs require supervisory monitoring and potential actions, which usually entail setting up recovery plans and close coordination with the NCAs. The impacts of the Covid-19 crisis may lead to benefit cuts for members and may require sponsoring undertakings to finance funding gaps, which may lead to additional pressure on the real economy and on financial institutions sponsoring an IORP. Considerations should also be given to the effects on IORPs' liquidity when benefit payments will remain relatively stable or tend to increase - usually there is limited redeemability of funds set by national law -, yet contribu-

tions from members and sponsoring undertakings may be delayed or cannot be paid in.⁵⁶

Sponsoring undertakings in heavily affected sectors by the COVID-19 pandemic are expected to be in significant financial distress and correspondingly, members of such pension funds are at risk of unemployment in the near future. Sponsoring undertakings' financial difficulties to maintain contributions, or in the worst case, sponsoring undertaking' insolvency may test national pension protection schemes. The set-up, structures and design of such pension protection schemes are divergent amongst Member States and the use of such may require supervisory attention.

4.1. KEY DEVELOPMENTS

In 2019 total assets held by occupational pension funds increased - in line with the reported return of assets - by 15%, yet not by increased membership or contribution levels. In 2018, the European IORPs sector suffered from marginal and even negative investment returns, so the asset-weighted average of 15% constitutes a remarkable increase, considering growth rates of around 5% in the years before 2018.

With the departure of the UK, the Netherlands account for 67% of the European Occupational pensions sector in terms of assets under management (Table 4.1). With EUR 1.6trn of assets under management in NL and EEA total of EUR 2.4trn, NL is by far the biggest IORP sector in the EEA. (Figure 4.1) End-year 2019 NL IORPs' investment represented almost 200% of NL GDP in 2019. Whereas the next biggest IORP sector, DE, with its EUR 235bn at year-end 2019, represent only 7% of DE GDP in 2019. (Figure 4.2)

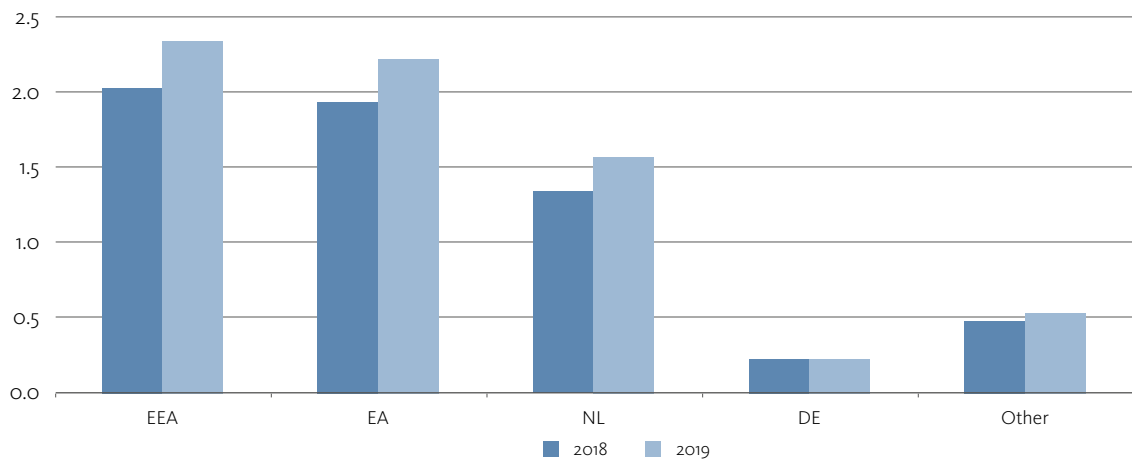
⁵⁶ Financial Times: Groups hit by coronavirus seek to halt pension contributions, 18 March 2020; <https://www.ft.com/content/c4217e98-6926-11ea-800d-da70cffe4d3>.

Table 4.1: Total assets per country as a share of EEA total assets reported for 2019⁵⁷

NL	DE	IT	IE	NO	ES	BE	IS	AT	SE	PT	RO	FR
67.1%	10.0%	6.4%	5.3%	1.7%	1.56%	1.57%	1.39%	1.03%	0.87%	0.86%	0.57%	0.49%
DK	LI	FI	SK	LU	GR	SI	PL	LV	HR	MT	BG	HU
0.39%	0.29%	0.18%	0.10%	0.07%	0.07%	0.04%	0.02%	0.02%	0.007%	0.0009%	0.0004%	0.0002%

Source: EIOPA Quantitative Survey

Figure 4.1: Total Assets (in EUR trn)

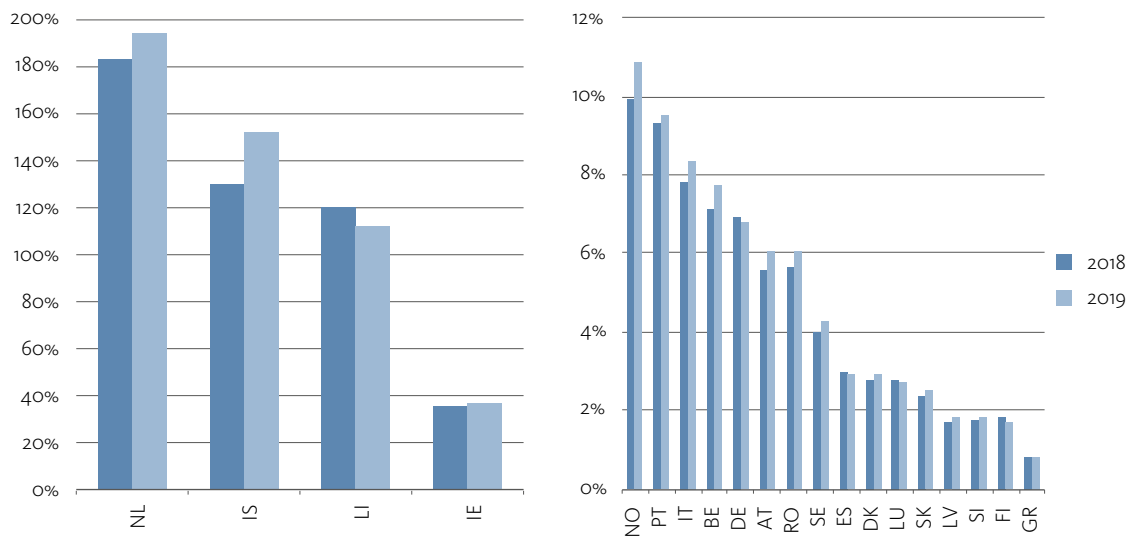


Source: EIOPA

Note: The 2019 data is preliminary and subject to revisions. UK is not included as 2019 data was not reported.

Figure 4.1 is based on data received by 26 countries (EEA) and 16 countries (EA) which provided total assets for 2019. The category 'Other' includes all countries except NL and DE.

Figure 4.2: Penetration rates (total assets as % of GDP)



Source: EIOPA

Note: Figure 4.2: Penetration rates for BG, HR, HU, FR, MT and PL are lower than 1%.

57 Table 4.1 excludes info on UK as 2019 data was not reported.

4.2. INVESTMENT ALLOCATION, MARKET PERFORMANCE AND FUNDING OF THE SECTOR

As in previous years, the investment allocation of pension funds remained broadly unchanged in 2019 for the EEA and EA (Figures 4.3). The increases in equity investments and ‘other investments’ are in line with the higher market values observed throughout 2019. The EEA and EA investment allocations are dominated by the high share of equity and sovereign bond holdings in NL.

As a result of the positive market developments in 2019, the EEA weighted and un-weighted average rate of return on assets increased significantly compared to 2018 (Figure 4.4). Where in 2018 the average rate of return on assets was negative for most Member States in 2018, the asset returns in all Member States were positive in 2019, leading to an asset-weighted average of 15% return on assets in the EEA. NL reached almost 17%, IE more than 20%, which is linked to the relatively high share of equity investments in the corresponding portfolios.

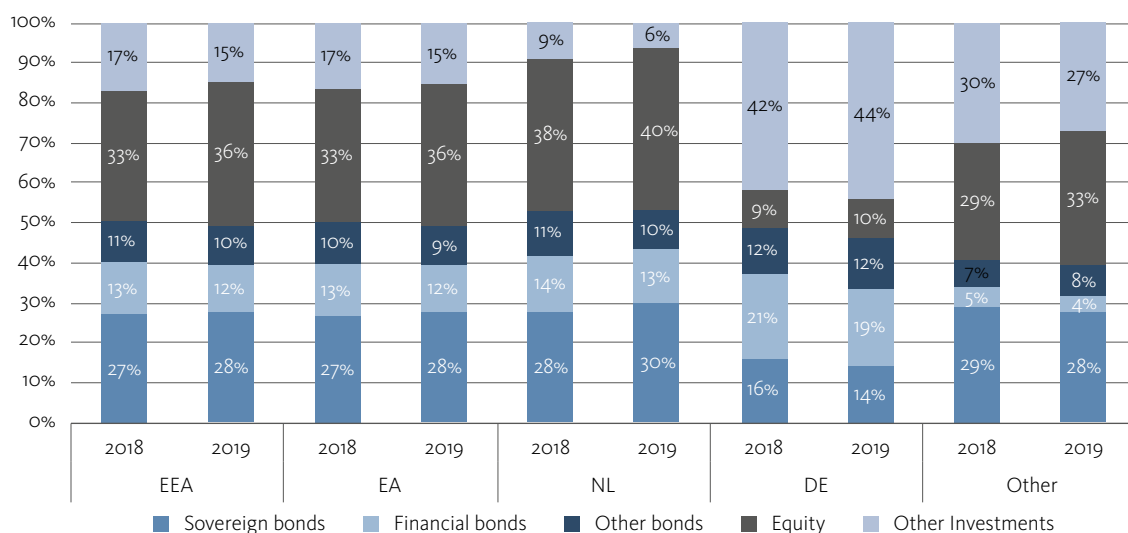
The favourable landscape is currently negatively affected by the Covid-19 outbreak. Pension funds in some

Member States tend to have large equity exposures and very long-term liabilities. As a result of a sharp decline of equity markets and a reduction of risk free rates, the total assets of pension funds are expected to decline and the value of DB liabilities to remain high. Moreover, the prospects for the sector remain challenging as the Covid-19 shock, coupled with the central bank response measures to sustain the economy, contribute to the continuation of the low for long scenario.

The weighted average cover ratio⁵⁸ for DB schemes in the EEA improved for the vast majority of Member States in 2019 (Figure 4.5). However, only for a small sample of countries the preliminary 2019 data was available. IORPs in all those Member States reached a coverage ratio of at least 100% by year-end 2019.

As a result of the Covid-19 shock, funding ratios of DB IORPs are expected to significantly drop in the first two quarters of 2020. The long-term effects and whether the sector will remain stable or whether action will need to be taken from either the regulator or the sponsoring undertakings remain uncertain. This mainly depends on how quickly the economy will recover once the pandemic will be under control.

Figure 4.3: Investment Allocation in 2018 and 2019

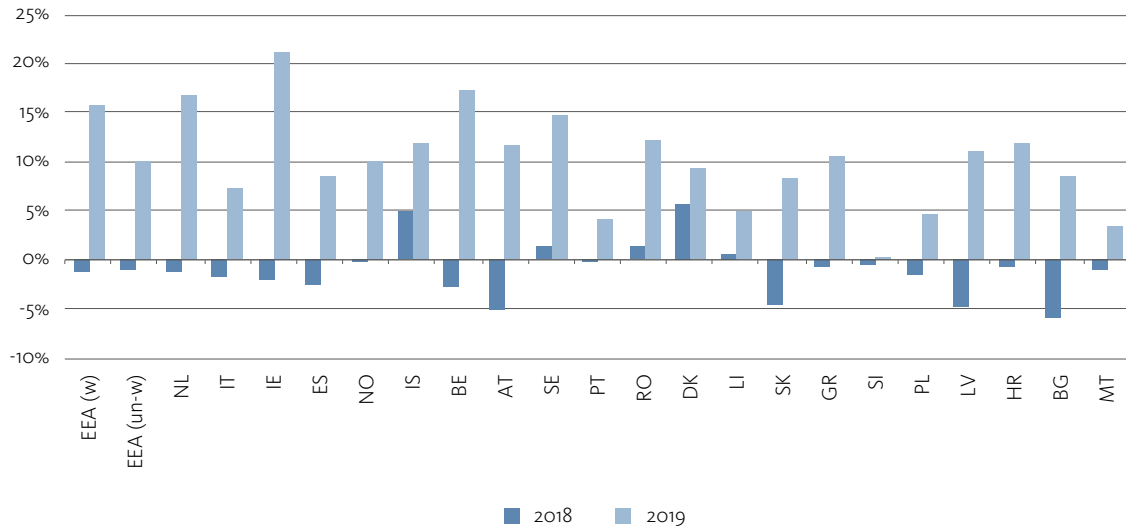


Source: EIOPA

Note: Data for 2019 is preliminary and subject to revisions. Figures 4.3 is based on 24 countries for the EEA and 13 countries for the EA that provided the investment breakdown for 2019. Data for FI, NO is not yet available. UK is not included as 2019 data was not reported. The category ‘Other’ includes all the countries except the NL and DE.

⁵⁸ Cover ratios are defined as net assets covering technical provisions divided by technical provisions.

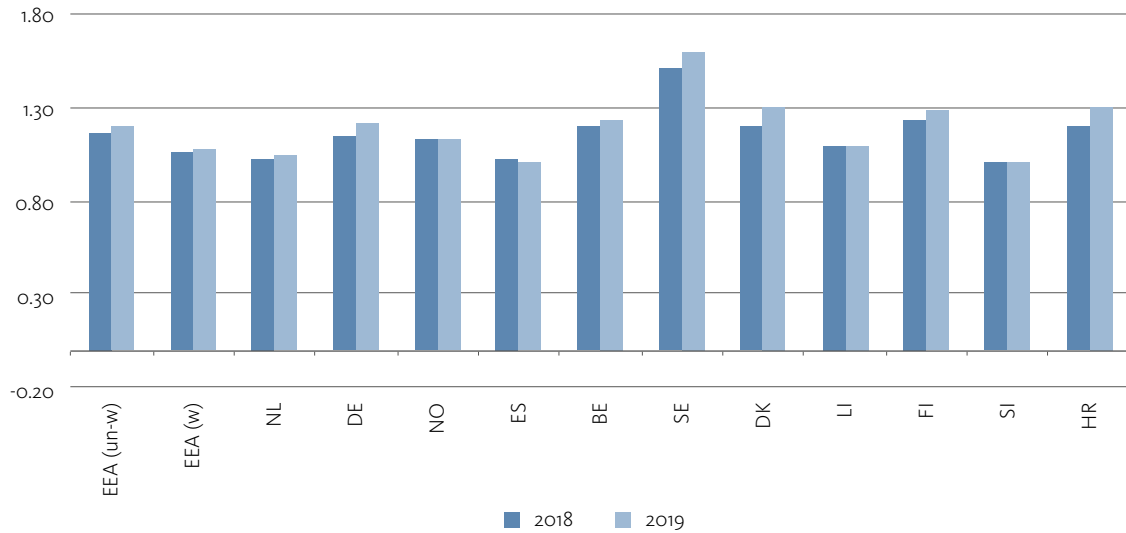
Figure 4.4: Rate of Return on Assets



Source: EIOPA

Note: Data for 2019 is preliminary and subject to revisions. Both the weighted and un-weighted averages for the EEA are calculated based on the 21 countries, which provided data and are depicted in the chart. The weighting is based on total assets. Please note that data on DE, FI, FR, LU and HU for 2019 is not yet available. UK is not included as 2019 data was not reported.

Figure 4.5: National cover ratios for selected countries



Source: EIOPA

Notes: Data for 2019 is preliminary and subject to revisions. Both the weighted and un-weighted averages for the cover ratio are calculated on the basis of the 11 countries that provided data and are depicted in this chart. The weighting is based on total assets. Cover ratios refer only to DB schemes. Due to different calculation methods and legislation, the reported cover ratios are not fully comparable across jurisdictions.

BOX 4.1: THE POTENTIAL IMPACT OF THE COVID-19 SHOCK ON OCCUPATIONAL PENSION SCHEMES

Institutions for occupational retirement provision (IORPs) have been severely affected by the COVID-19 shock. The investment allocation of EEA IORPs, in the end of 2019, consisted of equity for 33% and for bonds for 50%. As a result a sharp decline of the equity markets has reduced their asset values and the very low interest rates has inflated the value of DB liabilities. Moreover, the Covid-19 pandemic, coupled with the central banks response measures to sustain the economy, contribute to the continuation of low interest rates. In the described context, PGB, the €27.3bn Dutch multi-sector pension fund, recently announced its intention to raise its contributions by 4 percentage points to 28% next year in order to keep pensions sustainable⁵⁹. Energy giant ExxonMobil is to pay the Dutch section (€3bn ExxonMobil OFP) in its Belgium-based pension fund €250m to make up for a funding shortfall⁶⁰.

The long-term effects on current occupational pension schemes remain uncertain. This will depend on how severe the economic crisis will be and on how long it will last. And there is the possibility that financial markets and the economy could recover fast. In this respect, of crucial importance will be the evolution of macro variables such as unemployment and disposable income. **The Covid-19 pandemic may result in liquidity pressures.** Companies might face difficulties due to a) delayed or missing contributions from employers and employees, b) the potential need to cover cash margin calls on derivative hedging positions, c) any moratorium on payments on loans and mortgages, d) expected declines in dividend payments on IORPs' equity holdings and e) potential difficulties in selling assets under current market circumstances. Very low or negative cash flows might put undertakings in difficulty.

The Netherlands account for 67% of the European Occupational pensions sector in terms of assets under management. Dutch pension funds have reported that funding ratios dropped in the end of Q1 2020, as a result of the Covid-19 shock. The funded status of the average Dutch plan reportedly fell to 89.6% as of March 31, down from 96% at the end of February, 104% at the end of December and 104.8% at the end of Q1 2019, according to DNB⁶¹. Pension fund assets fell to €1.45 trillion (\$1.6 trillion) as of March 31, down 7.1% for the month, while liabilities grew 6.8% to €1.62 trillion. Klaas Knot, President of DNB, stated the Covid-19 pandemic had increased the urgency of pensions reform, as its impact had made the current pensions system "absolutely untenable". Also he indicated that "a new pensions contract must offer pensioners the perspective of indexation". The DNB president, however, thinks it is too early to start discussing another deferment of rights discounts for ailing pension funds "as only the funding level at the end of the year will be the criterion for cuts". As of now, the main measure taken by the Dutch supervisory has been to ease pension funds' supervisory burden, for example by granting them a three-month leeway on submitting their annual statements. Further economic developments and their impact on the pension sector are monitored closely.

59 <https://www.ipe.com/news/dutch-pgb-to-raise-contribution-rate-to-28-from-24/10045488.article>

60 <https://www.ipe.com/news/exxonmobil-to-fill-250m-funding-gap-in-dutch-pension-fund/10045195.article>

61 <https://www.pionline.com/pension-funds/funding-levels-drop-dutch-plans-q1>

5. RISK ASSESSMENT

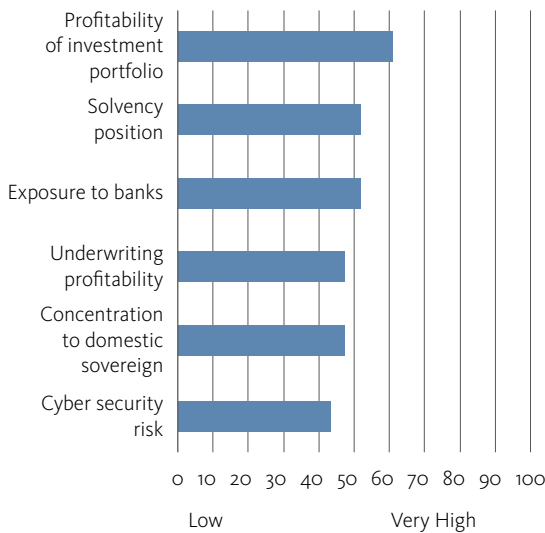
5.1. QUALITATIVE RISK ASSESSMENT EUROPEAN INSURANCE SECTOR

The unprecedented situation of the Covid-19 shock is causing disruption to households and businesses generating a high uncertainty regarding the future economic outlook. Insurance companies are likely to face challenging conditions, potentially affecting their profitability and solvency positions. In order to assess the materiality of

risks to financial stability for the insurance sector, EIOPA conducted a qualitative questionnaire among national competent authorities (NCAs)

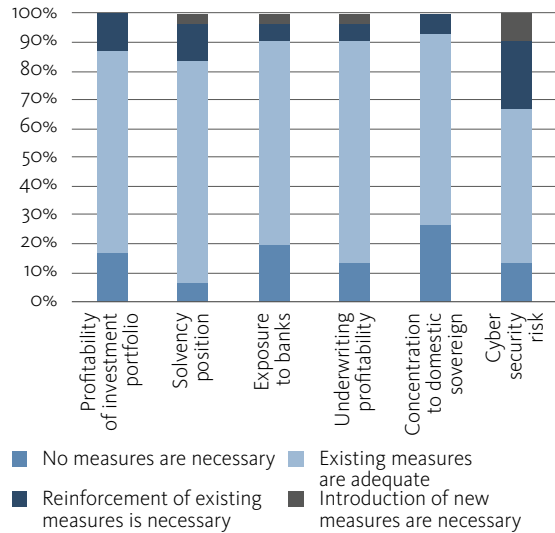
The EIOPA qualitative Covid-19 questionnaire reveals that profitability of investment portfolio, solvency position, exposure to banks, underwriting profitability, concentration to domestic sovereign and cyber risk are the top six key risks and challenges in terms of materiality (Figure 5.1) for insurers⁶². However, it also shows that, overall, insurers have set in place adequate measures to mitigate those risks.

Figure 5.1. Top 6 risks in terms of materiality for the insurance sector



Source: EIOPA Qualitative Covid-19 questionnaire (May 2020)
 Note: Based on the responses received. Risks are ranked according to materiality (from 1 indicating low materiality to 4 indicating very high materiality). The figure shows the aggregation of the average scores assigned to each risk. The results were subsequently normalised on a scale from 0 to 100.

Figure 5.2. The need of risk mitigation measures for the top 6 risks for the insurance sector



Source: EIOPA Qualitative Covid-19 questionnaire (May 2020)
 Note: Based on the responses received.

62 Results of the questionnaire can be found in the Appendix of the EIOPA report "Impact of ultra low yields on the insurance sector, including first effects of COVID-19 crisis" published in July 2020 https://www.eiopa.europa.eu/content/impact-ultra-low-yields-insurance-sector-including-first-effects-covid-19-crisis_en

Based on the qualitative questionnaire, profitability of investment portfolio is the highest ranked risk for the insurance sector in terms of materiality, with more than 10% of the responses signalling a need to reinforce the existing measures, although no new measures are seen to be necessary. Almost half of the respondent NCAs ranked it as the risk with the highest materiality while a slightly lower share (40%) ranked it as medium materiality. The low interest rate is confirmed as the main risk for the insurance sector. The interest rate was already expected to remain low and this expectation is now even more strengthened, in the context of the measures taken by central banks to sustain the economy. With approximately 65% of the investment portfolio dedicated to fixed-income assets, the insurance sector is sensitive to the low yield environment.⁶³ As indicated by NCAs in the open questions of the questionnaire, two additional factors were mentioned to put pressure on the profitability of insurers' investment portfolios. First, the returns generated by loans and mortgages are expected to decrease, due to impairments because of the forecasted recession. Second, for the same reason, dividend received on equity holdings might reduce. On the positive side, NCAs reported that life insurers with guaranteed products have built significant buffers to withstand worsening market conditions. Instead, for national markets, which are not significantly exposed to guaranteed products sold in the past, the impact of lower investment profitability is seen somewhat limited. Furthermore, financial markets have regained lost ground during April and May.

Notwithstanding the adequate capital positions of insurers prior to the Covid-19 shock, solvency is ranked as the 2nd biggest risk for insurance sector, with 15% of NCAs considering that a reinforcement of existing measures or introduction of new measures would be necessary.⁶⁴ Almost one-quarter of the participants indicate Solvency position as high materiality and 60% as medium materiality. As stated by many NCAs, a deterioration of the solvency positions was observed in Q1 2020, both because of the expected persistence of the low rate and because of the depreciation of assets and economic uncertainties that had a negative impact on insurers' balance sheets. On the positive side, the reductions and/or cancellations of distributed dividends might mitigate the solvency risk of some insurers by helping them preserving capital.⁶⁵

63 The issue was identified as one of the main concern for the insurance sector, thus it was decided to have a dedicated report covering the topic: Impact of ultra- low yields on the insurance sector, including first effects of COVID-19 crisis.

64 More focused discussion on the capital position of insurers can be found in chapter 2.

65 EIOPA (2/5/2020) EIOPA statement on dividends distribution and variable remuneration policies in the context of COVID-19. Available at: https://www.eiopa.europa.eu/content/eiopa-statement-dividends-distribution-and-variable-remuneration-policies-context-covid-19_en

The risks related to exposure to banks and concentration of domestic sovereign are ranked on the 3rd and 5th places, respectively, with 10% of the responses indicating that reinforcement or introduction of new measures are needed. Exposures to banks are considered by 23% of the participants as having high or very high materiality, while more than half of the NCAs consider it had medium materiality. NCAs indicated a higher concern for those insurance companies with high exposure to banks, as the Covid-19 crisis could negatively affect quality of banks' portfolios leading to increase in their NPL (non performing loans) ratios. Although 70% of the respondent NCAs stated that existing measures in place taken by the insurers are adequate, 10% believe that the reinforcement of existing measures or introduction of new measures would be needed. On the other hand, concentration of domestic sovereign is rated by 30% of the respondents as high or very high materiality. Insurers heavily exposed to fixed income assets are more sensitive to interest rates and spread risks. For some insurers, the Volatility Adjustment (VA) could compensate the variation in spreads, for others the matching adjustment procedures and hold to maturity strategies might reduce the spread risk.

The risk of decreased underwriting profitability emerged, as it is the ranked on 4th place in terms risk materiality according to the questionnaire, with 10% of the responses indicating that reinforcement or introduction of new measures are needed. When asked to assess the impact on life and non-life lines of business (Solvency II QRT) in the current situation of Covid-19 shock, the responses pointed out that new premiums are expected to decline almost across all non-life business lines. Instead, the situation looks more heterogeneous for claims. A temporary claims reduction is foreseen for some non-life business lines, namely, motor business (79% of the responses expect decrease and strongly decrease), general liabilities (36%), marine, aviation and transport insurance (33%), reducing the pressure on profitability. However, claim increases have been reported by the NCAs for some other non-life lines of business such as miscellaneous financial losses (50% increase and strong increase), income protection insurance (40% increase and strong increase) and credit and suretyship insurance (60% increase and strong increase). NCAs indicate that the overall impact seems to be slightly negative, but still it is too early to make an assessment as some claims could materialize later, also due to the legal uncertainty on whether insurers are liable to pay out some type of claims.

Figure 5.3. Impact on claims incurred for life business

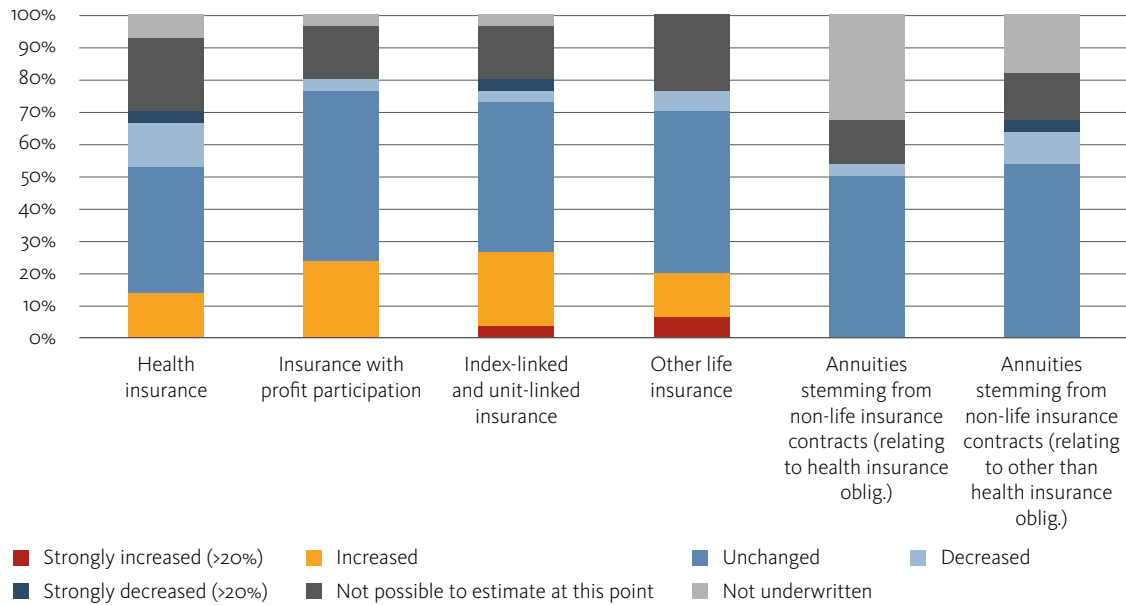
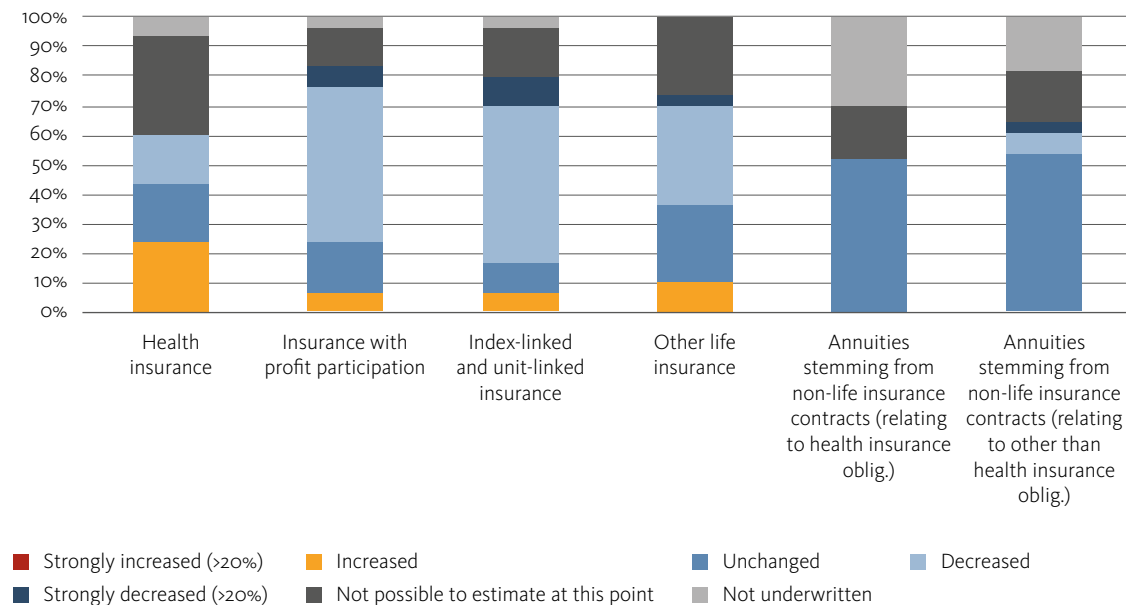


Figure 5.4. Impact on premiums written for life business⁶⁶



Source: EIOPA Qualitative Covid-19 questionnaire (May 2020)
 Note: Based on the responses received. Risks are ranked according to impact (from -2 indicating strongly decrease to +2 indicating strongly increase). The figure shows the aggregation of the average scores assigned to each risk. The results were subsequently normalised on a scale from 0 to 100.

⁶⁶ Premiums written are based on new business and existing contracts.

Figure 5.5. Impact on claims incurred for non-life business

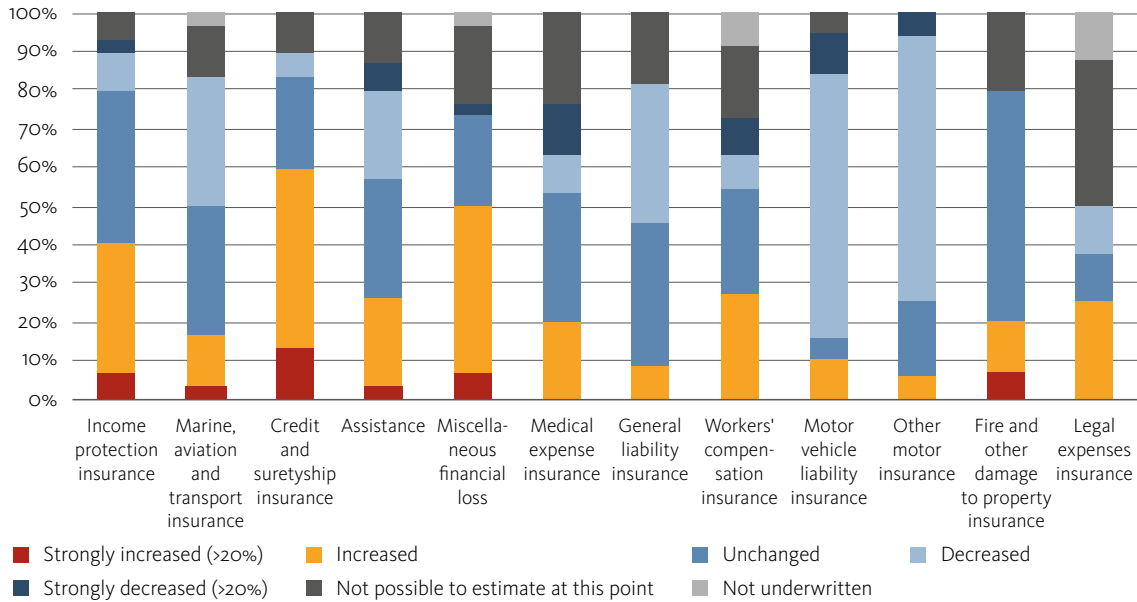
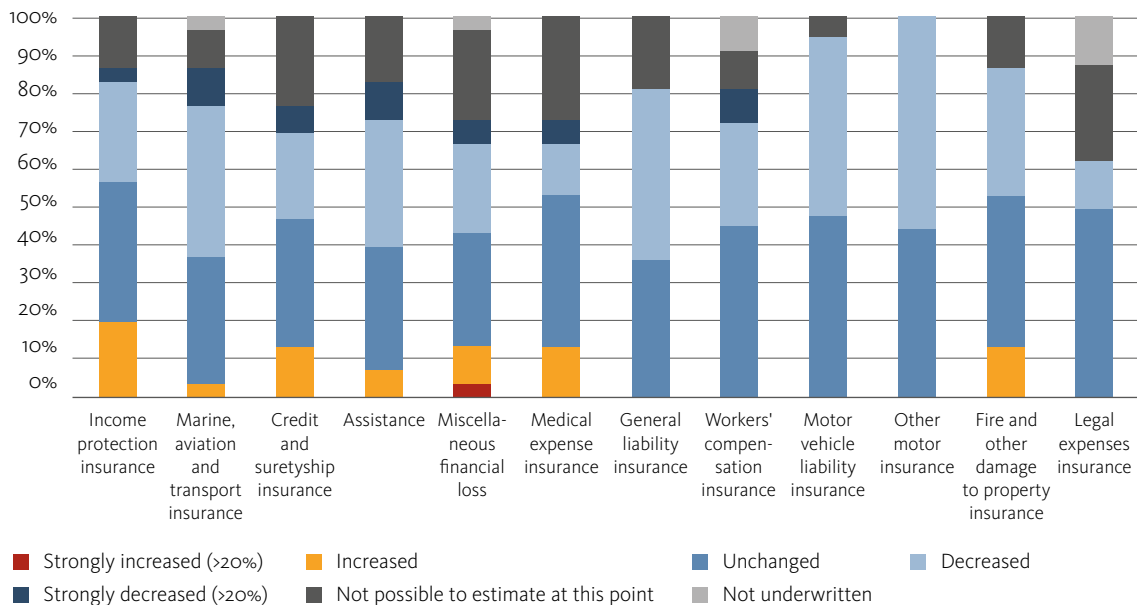


Figure 5.6. Impact on premiums written for non-life business⁶⁷



Source: EIOPA Qualitative Covid-19 questionnaire (May 2020)
 Note: Based on the responses received. Risks are ranked according to impact (from -2 indicating strongly decrease to +2 indicating strongly increase). The figure shows the aggregation of the average scores assigned to each risk. The results were subsequently normalised on a scale from 0 to 100.

⁶⁷ Premiums written are based on new business and existing contracts.

For the life insurance sector, underwriting profitability is expected to be more negatively affected by a reduction of premiums rather than by an increase of claims.

In particular, when asking about written premiums, 63% of the NCAs foresee a reduction (63% reduction and strong reduction) of premiums on index and unit-linked insurance and 60% a reduction (60% reduction and strong reduction) of insurance with profit participation products.

The survey further indicates that Covid-19 outbreak could significantly affect the business models of insurance undertakings.

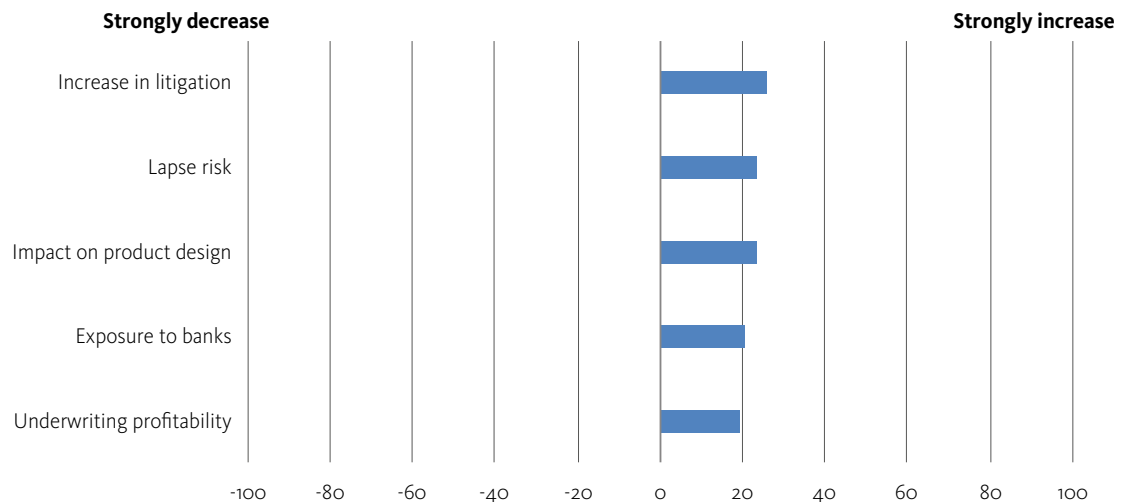
In particular, when asked to assess the materiality of cyber risks, 20% of the NCAs considered as high materiality, while 40% of the NCAs consider it had medium materiality. Although more than half of the respondent indicate that the mitigation measures are adequate, 33% of NCAs indicate that a reinforcement of current measures and introduction of new measures are needed. In this context, no specific measure has been identified or suggested. In the forward-looking perspective, 28% of the participants foresee an increase of the materiality of the cyber risk over the next 6 months, main-

ly driven by the increase of teleworking environments and potential phishing attacks.

Some risks, which could take time to materialize after the Covid-19 shock, might pose additional pressure on the insurance undertakings in the future (Figure 5.3).

Based on the responses received, NCAs expect an increase in litigation over the next 6 months that could trigger an increase in claims and expenses for insurance undertakings with a negative effect on their profitability positions. Profitability might be impaired by lapse risk that could increase over time due to income reduction caused by the Covid-19 crisis. Furthermore, some NCAs also expect an increase in the impact on product design, exposures to banks and underwriting profitability (previously discussed). Approximately more than one third of the respondent NCAs believe that the exposures to banks might become a concern; this holds similarly for concentration to domestic sovereigns, but to a slightly lower extent, hence, it is not shown in the chart. However, responses provided by NCAs suggest that there is a certain level of heterogeneity across countries.

Figure 5.7. Risks with the highest expected increase in materiality over the next 6 months in the context of Covid-19



Source: EIOPA Qualitative Covid-19 questionnaire (May 2020)

Note: Based on the responses received. Risks are ranked according to the expectation for the future movements of each exposure (from -2 indicating strongly decrease to +2 indicating strongly increase). The figure shows the aggregation of the average scores assigned to each risk. The results were subsequently normalised on a scale from -100 to 100.

The risks discussed in this section are the ones that prevail in terms of materiality, but the questionnaire regarding the impact of Covid-19 covered all potential challenges to the insurance sector. Risks that have not been indicated as top risks, probably because they might be specific to fewer jurisdictions or to particular types of companies (e.g. derivatives tend to be used by big undertakings), but that might raise concerns, have been addressed in other parts of the report. In this context, the reinforcement of existing measures for external ratings and outlook was also indicated as a concern for some NCAs.⁶⁸ External ratings and outlook (e.g. downgrades) are considered for half of the NCAs to have medium materiality, while 14% of the respondents consider that insurers should reinforce the existing mitigating measures. Some NCAs noted that they foresee an elevated risk of downgrades, especially of BBB-bonds, in the light of lower profitability of businesses and increasing public debt. In addition, some supervisors are closely monitoring the potential risk of downgrades and its impact on own funds and solvency ratios. 41% deem that it will increase/strongly increase in following months. This issue is addressed from an analytical perspective in this chapter in the paragraph on “The impact of large-scale rating downgrades due to Covid-19 crisis”. Furthermore, the exposure to sectors negatively affected by Covid-19 and potential vulnerabilities stemming thereof are addressed in the section “Sectoral exposures” in the end of this chapter. The issue of the exposure to reinsurance and the related counterparty risk is touched upon in Chapter 3 in the Box 3.1 on “The impact of the Covid-19 shock on reinsurers”. The potential risk stemming from liquidity of investment funds and in particular of unit-linked portfolios is addressed in this chapter in the section “Insurers’ Holdings of investment funds and liquidity risk”. The potential liquidity risk arising from derivatives holdings is analysed in this chapter in the section “Variation margins on derivatives”.

EIOPA and national supervisory authorities are working in close cooperation to help insurers to focus on ensuring business continuity and continuing to serve their customers. In order to mitigate the impact of the outbreak on the insurance sector in Europe, both EIOPA⁶⁹ and national supervisors have put in place different measures. Although certain degree of heterogeneity across countries can be observed, there is a common approach of operational relief towards insurance undertakings. Extensions of reporting deadlines, suspending non-essential ongoing inspections, delay the entry into force of national

regulatory initiatives and postponement of non-essential policy initiatives are some measures taken among countries to support insurers to focus on their main business operations. On the capital side, cancellation and/or reduction of dividends pay-outs, following EIOPA statement, is another measure taken by many countries. Finally, several countries also considered necessary to take measures such as monitor closely the insurance undertakings, perform further analysis (e.g. on evolution of the ratings of the portfolios, on IT and outsourcing risks, etc.), launch surveys on the impact of Covid-19 among insurance companies and issue recommendations to insurance undertakings following the EIOPA statements in some cases (e.g. implement necessary measures to secure business continuity, enable changes and adjustments of contractual rights and obligations resulting from insurance contracts, etc.).

5.2. QUANTITATIVE RISK ASSESSMENT EUROPEAN INSURANCE SECTOR

This section further assesses the key risks and vulnerabilities for the European insurance sector identified in previous parts of the report. Although some of the risks discussed in this section have not materialised so far, analyses and discussion of potential scenarios that could affect the insurance sector are included, due to the extremely high uncertainty regarding on how the COVID-19 crisis will evolve. In the first section of this part of the report, the breakdown of the investment portfolio and asset allocations is discussed with a focus on specific country exposures, followed by an analysis on the interconnectedness between insurance and the banking sector. Moreover, a discussion regarding liquidity risk is provided, enhanced by an analysis on insurers’ holdings of investment funds from a liquidity perspective as well as a more detailed analysis regarding derivative positions and variation margins. Finally, the impact of large-scale rating downgrades due to Covid-19 crisis are analysed as well as an overview of sectoral exposures of insurers is provided.

INVESTMENTS

Asset allocations for insurers remained stable on aggregate, with dominant exposures towards fixed income assets and equities, exposing insurers to fluctuating market valuations due to the COVID-19 shock. Government and corporate bonds make up around two-thirds of the total investment portfolio whereas equities (listed and unlisted) follow in terms of materiality (Figure

⁶⁸ More focused discussion on this matter can be found in this Chapter: in the paragraph on: “The impact of large-scale rating downgrades due to Covid-19 crisis”.

⁶⁹ More focused discussion on the EIOPA regulatory developments can be found in chapter 2 under 2.4 section.

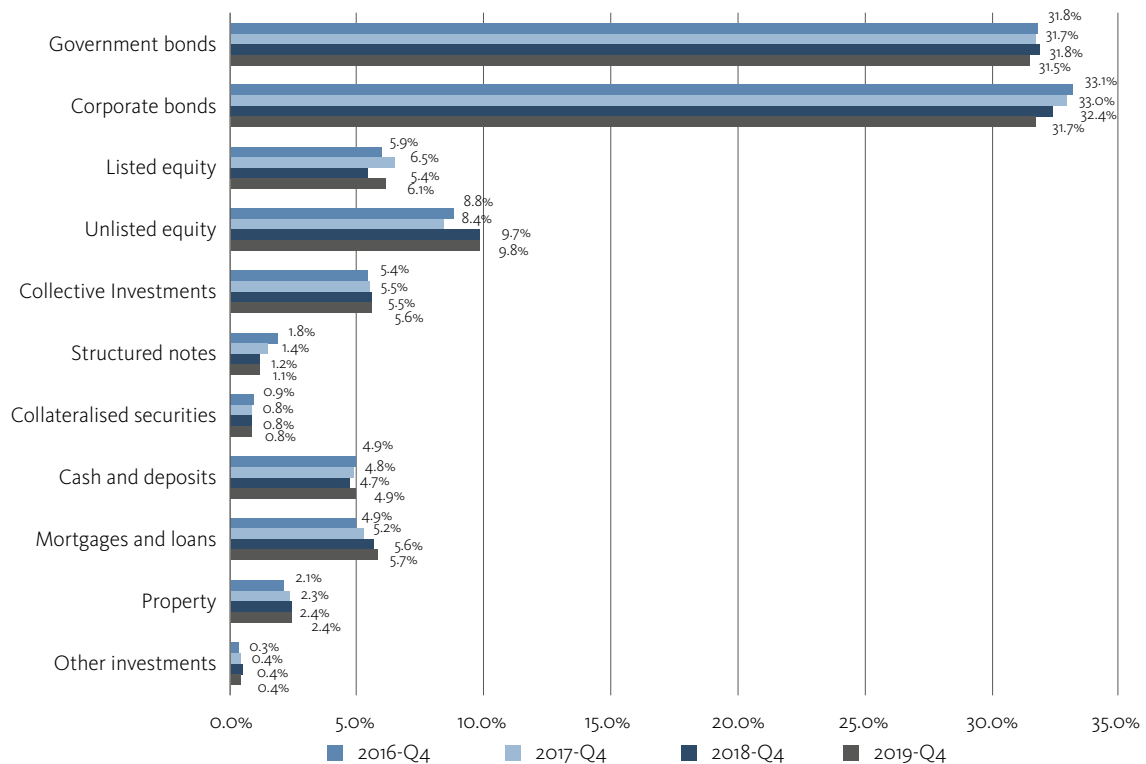
5.8), making insurers' portfolios, at the European market level, susceptible to interest rate risk, credit risk and equity risk. From an undertaking's perspective, composite and life insurers are highly exposed to government and corporate bonds, whereas non-life companies are mostly exposed to corporates, governments and unlisted equities, with reinsurers showing the highest exposure towards unlisted equities⁷⁰ and cash and deposits (Figure 5.9).

On the aggregate market level, both government and corporate bonds have similar share in the portfolio, as of Q4 2019. Therefore, within the context of the flight-to-quality observed in the market during the virus outbreak, the relative changes in yields between government and corporate bonds as well as the duration of the portfolios would determine the final direction of the movements. Furthermore, the sharp drop in equities observed during March, could adversely affect insurers' aggregate asset side. However, the subsequent rebound of the equity market mitigates the aforementioned effect.

On the undertaking type level, the above-mentioned movements should be scaled to the specificities of their exposures. In fact, non-life undertakings and reinsurers might be more affected by the drop in the value of government, corporate bonds and equities. On the contrary, life and composite undertakings might be affected more by movements in government and corporate bonds.

Amid the uncertainty in financial markets and regarding the fade out of the pandemic, investment decisions on a potential rebalancing of portfolios is expected to be challenging for insurers. Ultra-low interest rates, higher risk premia and potential increased need for liquidity could increase the risk of asset allocation not matching the liabilities' characteristics. Furthermore, the uncertainty regarding equity markets and its apparent different trajectory compared to economic outlook, as well as the uncertainty regarding alternative investments could increase the risk of tactical asset allocations not being effective⁷¹.

Figure 5.8: Investment split in Q4 2019 compared to Q4 2018, Q4 2017 and Q4 2016



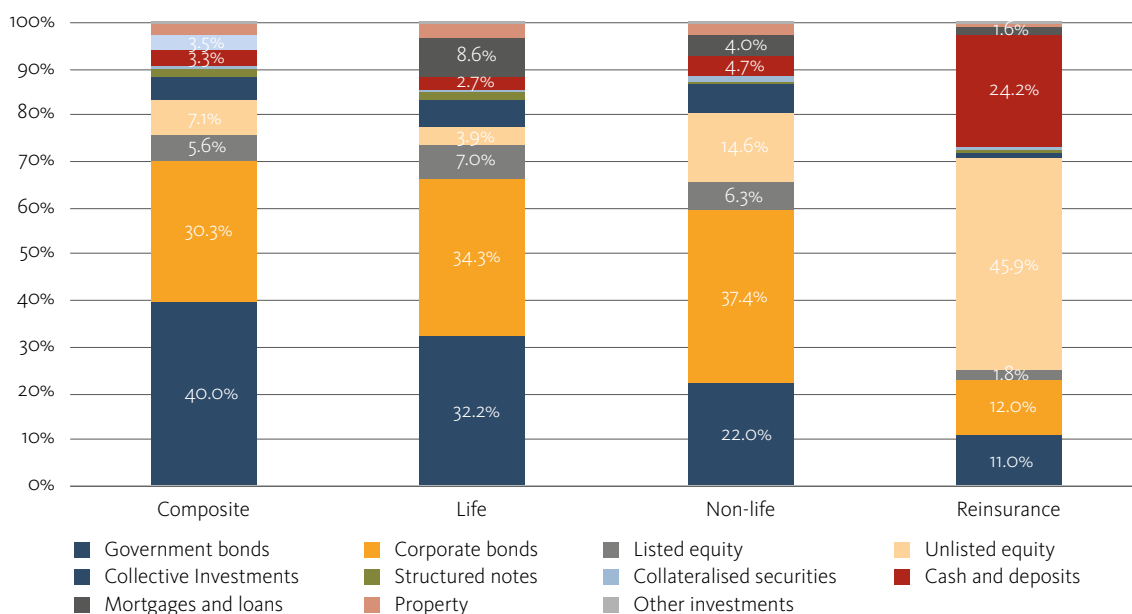
Source: EIOPA Quarterly Solo
Reference Date: Q4 2019

Note: Look-through approach applied. Assets held for unit-linked business are excluded. Equities include holdings in related undertakings.

⁷⁰ Equities include holdings in related undertakings, which account for most equities held by reinsurers.

⁷¹ More focused analysis in terms of investment allocation and behavior could be found in the EIOPA report "Impact of ultra low yields on the insurance sector, including first effects of COVID-19 crisis" published in July 2020 https://www.eiopa.europa.eu/content/impact-ultra-low-yields-insurance-sector-including-first-effects-covid-19-crisis_en

Figure 5.9: Investment split in Q4 2019 by type of undertaking



Source: EIOPA Quarterly Solo

Reference Date: Q4 2019

Note: Look-through approach applied. Equities include holdings in related undertakings, which account for most equities held by reinsurers. Assets held for unit-linked business are excluded.

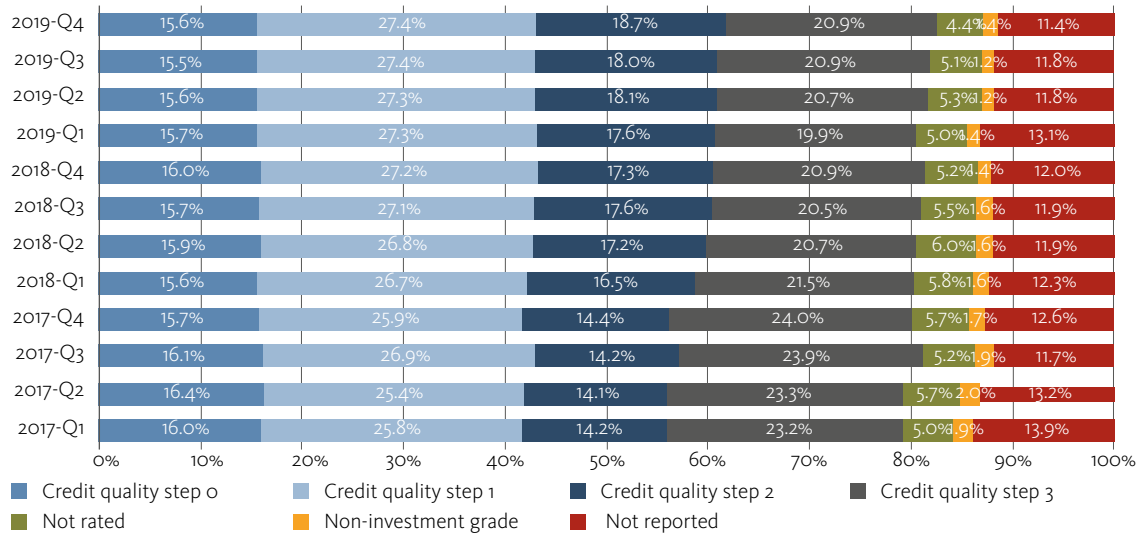
The concentration to lower quality bonds, for some countries, accompanied by a higher risk of rating downgrades⁷², due to Covid-19 slow down, could potentially be a risk transmission channel for the insurance sector. The vast majority of bonds held by European insurers are investment grade, with most rated as CQS1 (AA) (Figure 5.10). The uncertainty on the post crisis economic outlook, could negatively affect the credit quality of insurer’s bond portfolio (including unit-linked exposures), mostly for corporate bonds. Crucially, CQS3 (BBB rated) bonds, amount approximately to 20% of the total bonds market value, raising the risk that, in the case of massive

credit rating downgrades, the impact on the market value of the portfolio will be significant and, at the same time, potentially increase in the spread risk solvency capital requirement. Countries shown to have concentrated exposures to low quality bonds are the most vulnerable to face the aforementioned risks, although the overall effect depends, as well, on the diversification within the credit quality steps of the bond portfolio (Figure 5.11). However, the virus outbreak and the resulting economic lockdowns expose companies to systematic risk, hence diversification benefits within asset classes could be sustained.⁷³

72 Especially those corporates with already vulnerable balance sheets might be more severely affected.

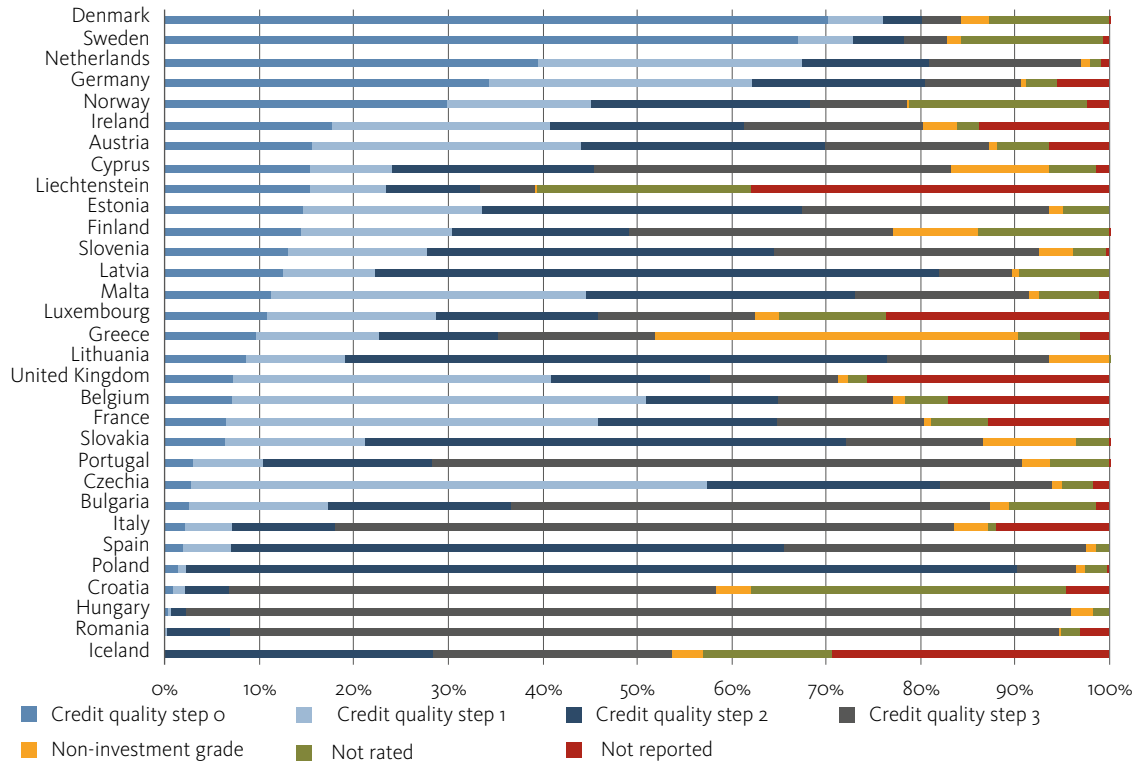
73 Please refer to paragraph on “The impact of large-scale rating downgrades due to Covid-19 crisis” for a more detailed analysis on rating downgrades.

Figure 5.10: Credit quality of bond portfolio



Source: EIOPA Quarterly Solo
 Note: Government and corporate bond portfolios combined. Assets held for unit-linked are included.

Figure 5.11: Credit quality of bond portfolio across countries

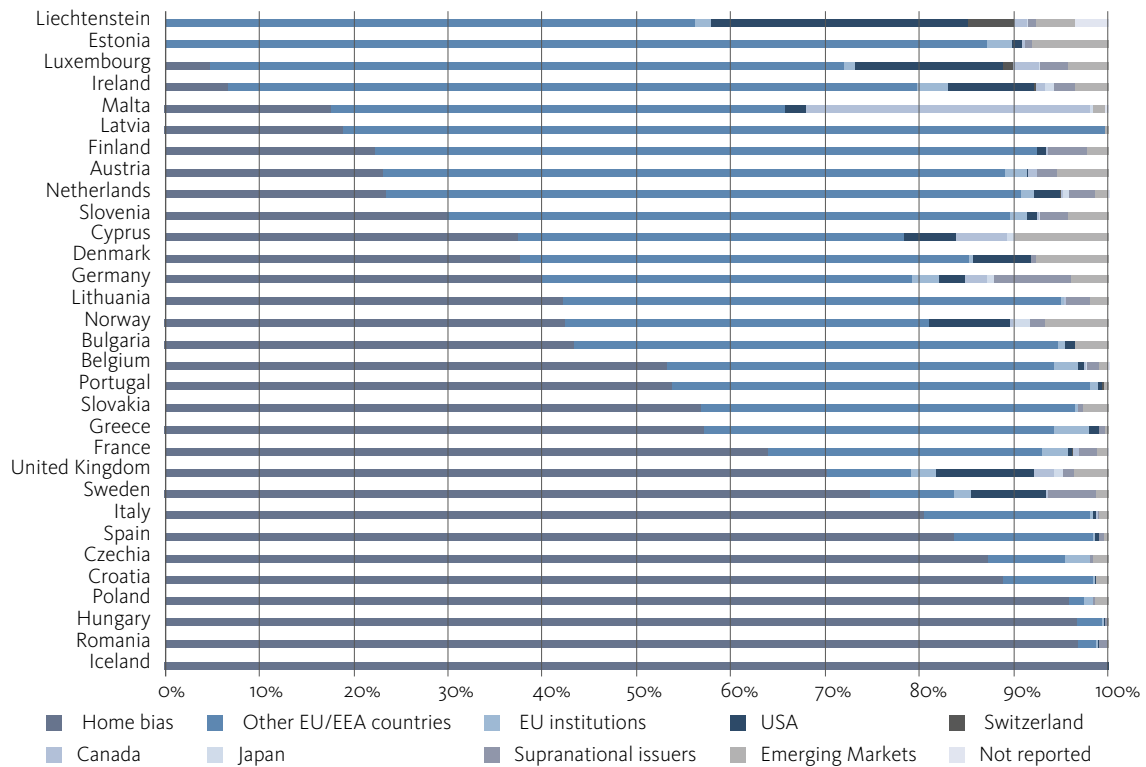


Source: EIOPA Quarterly Solo
 Reference date: Q4 2019
 Note: Government and corporate bond portfolios combined. Assets held for unit-linked are included.

The risk of specific countries experiencing heavier hits from COVID-19 shock amplifies the concentration risk of insurance sector showing significant home bias for bond investments. Approximately 90% of the government bonds are invested in EEU/EA countries, retaining the exposure from 2018 Q4, but an increase in exposure towards emerging markets countries can be observed. Although that could be a sign of searching for higher yields, emerging markets could be a potential source of risk looking forward, due to higher volatility and less stability of their economies as a consequence of the Covid-19 outbreak (Figure 5.13). Regarding corporate bonds, approximately 80% of the aggregate portfolio is invested in EEA/EU countries with the 12% in US markets, i.e. the largest and most liquid corporate bond market in the world, without an indication of significant change from the allocation as of Q4 2018 (Figure 5.15).

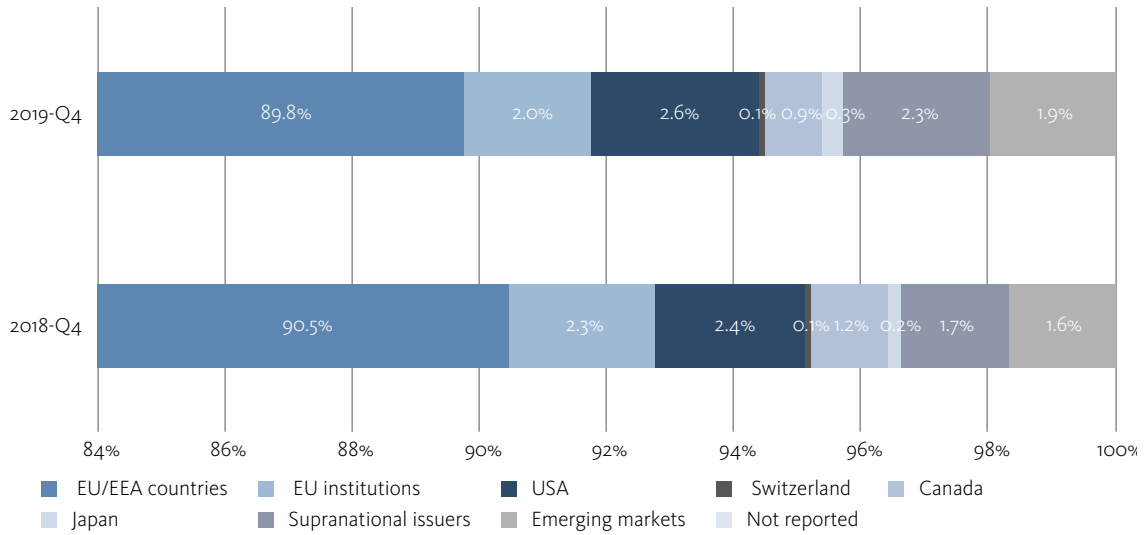
Looking through the government bond portfolio, holdings of insurers continue to show significant home bias (Figure 5.12). The different impact of Covid-19 across countries, as well as the different recovery, could amplify country specific risks and hence significantly affect the market value of assets for domestic insurers that show significant home bias. Similar considerations apply for corporate bonds portfolio, although home bias is shown to be more sustained compared to government bonds (Figure 5.14). Companies in heavily hit countries could potentially be affected more by the confinement measures, resulting in higher uncertainty in the post virus market equilibrium, hence their risk premia would further increase and their rating could deteriorate. As a result, the abovementioned developments would result in decreased valuations or even defaults. In fact, considerable uncertainty exists related to how companies are going to finance their activities or serve their debts against the uncertainty regarding the economic outlook. Companies, whose issues are on the borderline of investment grade level, run the highest financing difficulties.

Figure 5.12: Home biased behaviour for insurers' holdings of government bonds



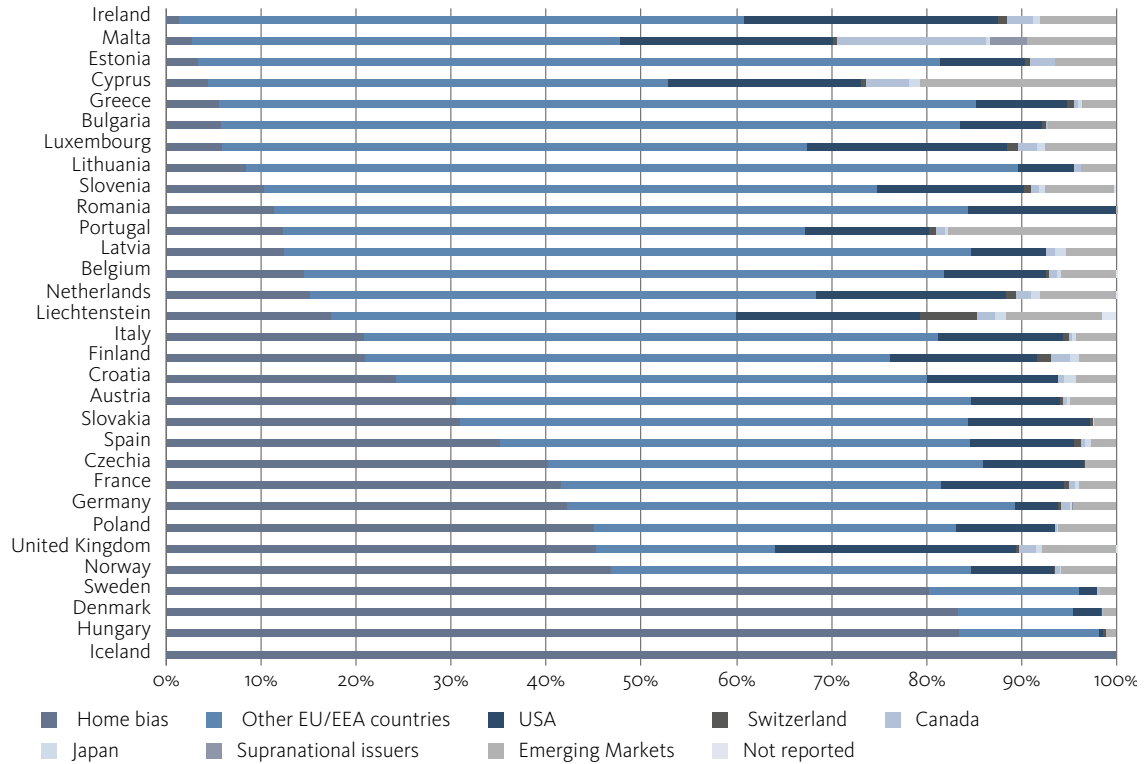
Source: EIOPA Quarterly Solo
 Reference Date: Q4 2019
 Note: Assets held for unit-linked business are included.

Figure 5.13: Overall government bonds exposures of the European insurers to different countries



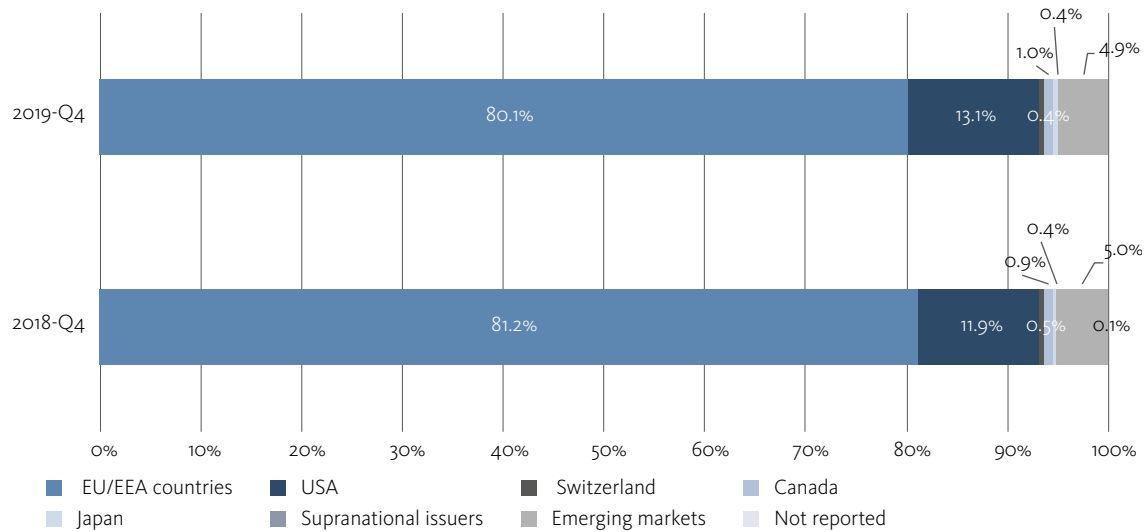
Source: EIOPA Quarterly Solo
 Note: Assets held for unit-linked business are included.

Figure 5.14: Home biased behaviour for insurers' holdings of corporate bonds



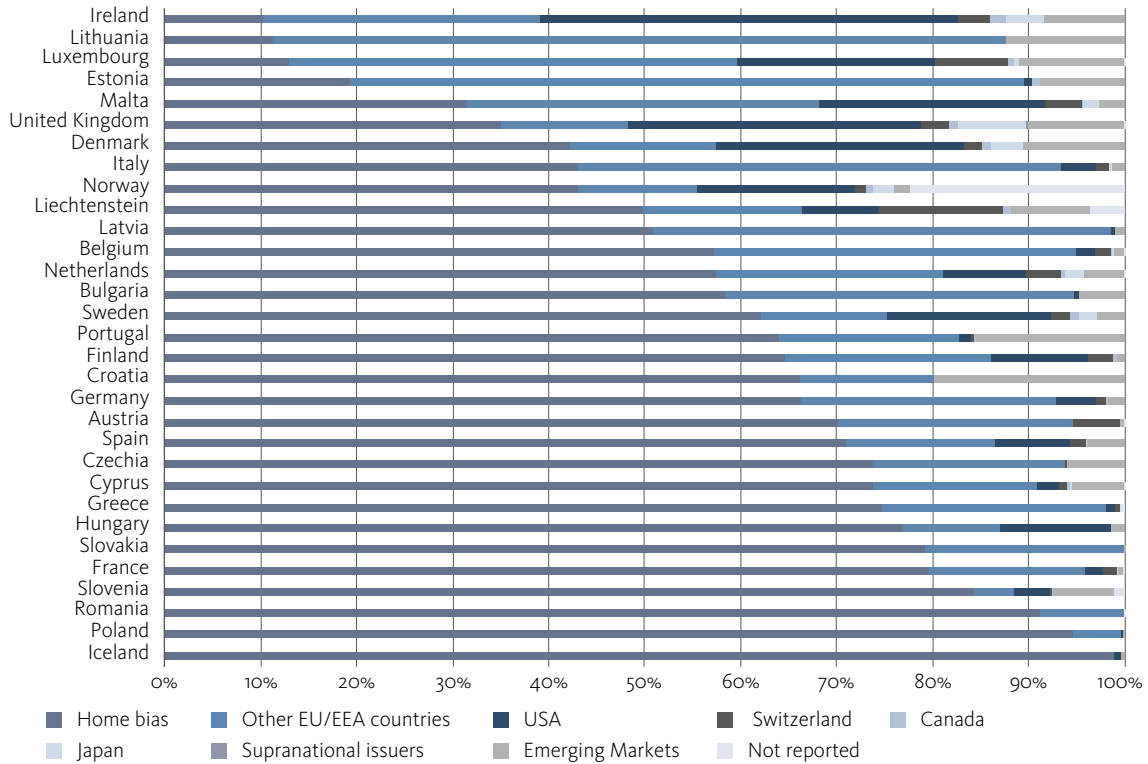
Source: EIOPA Quarterly Solo
 Reference Date: Q4 2019
 Note: Assets held for unit-linked business are included.

Figure 5.15: Overall corporate bonds exposures of the European insurers to different countries



Source: EIOPA Quarterly Solo
 Note: Assets held for unit-linked business are included.

Figure 5.16: Home biased behaviour for insurers' equity investments in Q4 2019

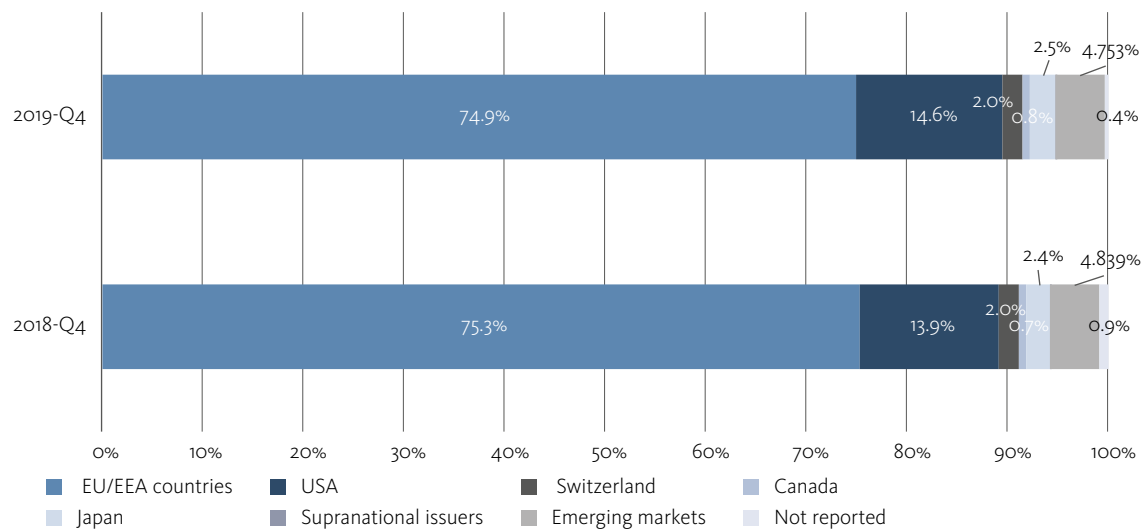


Source: EIOPA Quarterly Solo
 Reference Date: Q4 2019
 Note: Assets held for unit-linked business are included.

Equity investments show high degree of home biased behaviour, with concentration risk for the sector further amplified due to country specific hit of COVID-19 shock. Equity exposures towards EU/EEA countries re-

mained stable (Figure 5.17). Insurers show a high degree of home bias, even higher than bonds, making them susceptible to deterioration of the economy in country and rating downgrades.

Figure 5.17: Overall equity exposures of the European insurers to different countries



Source: EIOPA Quarterly Solo
 Note: Assets held for unit-linked business are included.

BOX 5.1: THE COVID-19 SHOCK: AN APPROXIMATION OF THE IMPACT ON EXCESS OF ASSETS OVER LIABILITIES

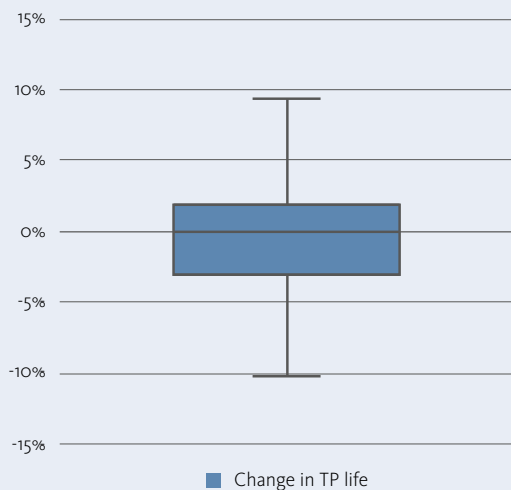
The Covid-19 pandemic has caused significant losses in financial markets and risk-free rate curves flattening. This box discusses a methodological approach that could give an estimation of the effect of the developments in the financial markets caused by the Covid-19 shock on insurers' balance sheet by assessing the impact of changes in RFR curves on the technical provisions and the impact of financial market changes, as reflected in the movement of the appropriate indices, on the investment positions. The exercise could give an indication of the sensitivity of liabilities and assets to the financial market changes on 18th of March 2020, one of the worst days during the crisis as the European equity market reached quickly very low levels, high volatility and an increase in bond spreads was observed.

The analysis consists of a two-step approach. In the first step, using Q4 2019 Solvency II data, an estimation of the impact of the change in RFR curves from December 2019 to 18th of March 2020 on insurers' balance sheets technical provisions is performed. The analysis considers the impact of the change in the RFR curves for the technical provisions – life (excluding unit-linked and index-linked) and technical provisions – non-life. In this exercise, changes in technical provisions depend on the duration of technical provisions (both life and non-life) and on the change in RFR from the beginning to the selected date for illustration. On the asset side, the decrease in equity markets, the change in yields for government bonds and credit spreads for corporate bonds are considered in

order to estimate the performance of investments. In the second step, an estimation on the change of excess of assets over liabilities is computed to give an idea of the potential losses in the sector. The impact is computed at solo level, then results are aggregated. In order to estimate the changes in the technical provisions mentioned above, a series of assumptions/simplifications are considered; a detailed discussion of the methodological aspects and the assumptions can be found in the EIOPA report on "Impact of ultra-low yields on the insurance sector, including first effects of COVID-19 crisis"⁷⁴.

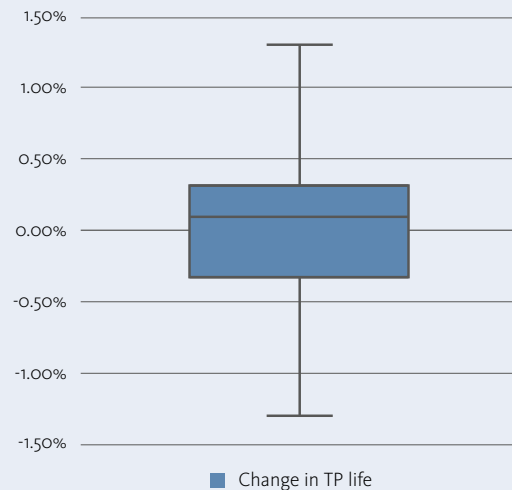
The estimations based on the change in RFR curves on 18th of March 2020 compared to 31 December 2019 lead to an aggregated decrease of 1.4% in life technical provisions and 0.06% increase in non-life technical provisions (Figure 5.18 and Figure 5.19). The estimated impact is different for each insurer and its direction depends on the duration and currencies of the technical provisions. The aggregate liabilities for life and non-life are estimated to decrease by 1.23% (-76.3 bn. EUR). As at the initial stage of the Covid-19 crisis a flight-to-quality behaviour was observed, hence the decrease in liabilities captured for 18th of March while the same analysis performed for end of March or April yields shows an overall increase in liabilities.

Figure 5.18 Estimated change in life TP (excluding unit-linked business)



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.

Figure 5.19: Estimated change in non-life TP



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.

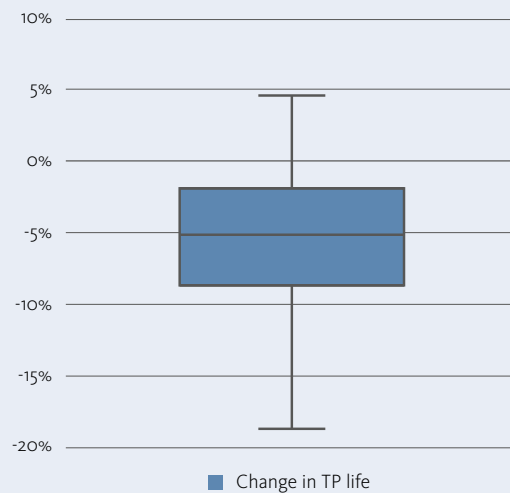
On the assets side, the estimated impact shows a decrease of 8.7% of the total investment covers. The estimated decrease is driven by a 35.1% drop in value of equity investments, a 2.5% decrease in government bonds, a 7.2% drop in corporate bonds, structured notes and mortgages and loans, a 4.2% decrease in collateralised securities and a 8.7% loss in CIUs investments.⁷⁵ IRS derivatives contracts⁷⁶ would have a positive impact compensating the losses by 34.1 bn. EUR. Overall, investment assets are estimated to drop by approximately 678 bn. EUR.

⁷⁴ EIOPA report on the "Impact of ultra low yields on the insurance sector, including first effects of COVID-19 crisis" published in July 2020 https://www.eiopa.europa.eu/content/impact-ultra-low-yields-insurance-sector-including-first-effects-covid-19-crisis_en.

⁷⁵ CIU assets are attributed to other asset classes based on look through analysis. Portions that could not be attributed to other asset classes were assigned to other asset classes as per the distribution pattern for the undertaking concerned.

⁷⁶ The change in derivatives is estimated by applying the impact of the change of the RFR curves to the interest rate swaps contracts (IRS) which make up for the largest part of the derivatives held by insurers. The analysis considers the split between FL-FX and FX-FL swap contracts and their weighted average duration. Using the duration approach, the change is computed based on the shift observed in the level of the RFR curves.

Figure 5.20 Estimated change in investment assets



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.

In the end of Q4 2019, most of the insurance undertakings were well capitalised, holding an excess of assets over liabilities that amounted to approximately 1.46 tr. EUR for the sample considered in the estimation. Based on the approximation, insurers would have lost around one third of their excess of assets over liabilities on 18th of March 2020 (-39.1%).

EXPOSURE TOWARDS THE BANKING SECTOR

The significant exposures of insurers towards the banking sector, and their home bias, could potentially become a channel of risk transmission and contagion given the negative consequences of the virus outbreak on the sector. In accordance with the bank recovery and resolution directive (BRRD), banks cannot be “bailed out”, with the exception of very large and systemically important banks. Instead, creditors have to be “bailed-in”, meaning that unsecured creditors, including depositors and bondholders, are subject to the risk of facing losses.

Insurers show different levels of exposures towards banks across countries (Table 5.1), but on average approximately 15% of their total investment is concentrated towards banks. The levels of home bias differs across countries but the concentration on EU/EEA countries is dominant, with only few exceptions (Figure 5.21). As a result, in case a specific country is severely affected by the virus and the confinement measures, the effect would be amplified for an insurer with high concentration on the banking sector of that specific country. It is noteworthy that insurers hold also large amounts of domestic government bonds and that the creditworthiness of the banking sector is tightly linked to the one of the local government and vice versa (the so called “sovereign bank loop”). For this reasons, in some countries, risk exposures to the banking sectors could potentially be amplified.

Table 5.1: EU/EEA insurers' exposures towards banks as a percentage of total investments at country level.

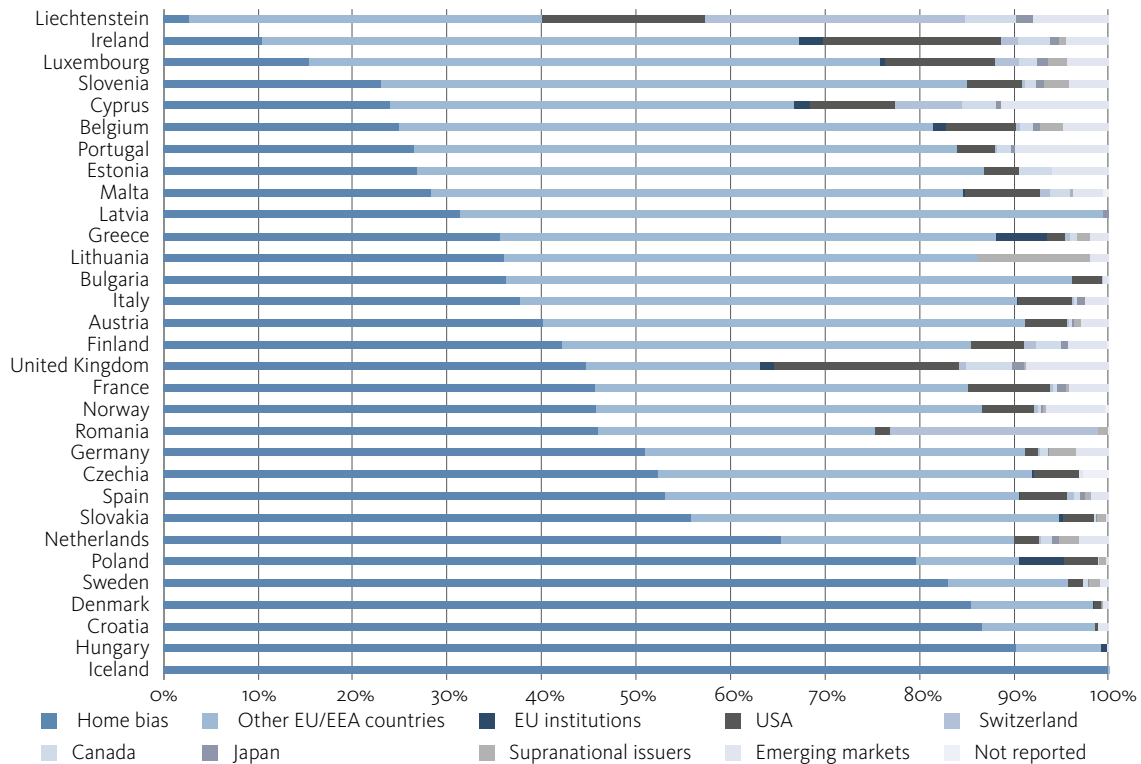
Country	% Exposure to banks	Country	% Exposure to banks
EU/EEA average	15.72%	ITALY	7.58%
AUSTRIA	19.76%	LATVIA	22.08%
BELGIUM	7.95%	LIECHTENSTEIN	25.69%
BULGARIA	15.91%	LITHUANIA	13.36%
CROATIA	6.80%	LUXEMBOURG	20.34%
CYPRUS	28.42%	MALTA	23.64%
CZECHIA	15.56%	NETHERLANDS	17.64%
DENMARK	27.58%	NORWAY	15.19%
ESTONIA	42.68%	POLAND	13.16%
FINLAND	12.18%	PORTUGAL	15.70%
FRANCE	13.00%	ROMANIA	16.88%
GERMANY	21.70%	SLOVAKIA	20.92%
GREECE	10.79%	SLOVENIA	14.73%
HUNGARY	6.49%	SPAIN	11.48%
ICELAND	30.90%	SWEDEN	33.15%
IRELAND	23.00%	UNITED KINGDOM	11.09%

Source: EIOPA Quarterly Solo

Reference Date: Q4 2019

Note: The data presented is based on all types of instruments and obtained by restricting the issuer with the NACE codes K64.1.9 and K64.9.2. Unit-linked and index-linked data has been excluded. Exposures refer to all banks' assets: equity, bonds, cash and deposits, structure notes, collateralised securities, mortgages and loans and other investments. The blue colour highlights the lowest exposures towards banks while the red colour highlights the highest exposures towards banks

Figure 5.21: Insurance sector exposure towards the banking sector, domestic versus cross-border



Source: EIOPA Quarterly Solo

Reference Date: Q4 2019

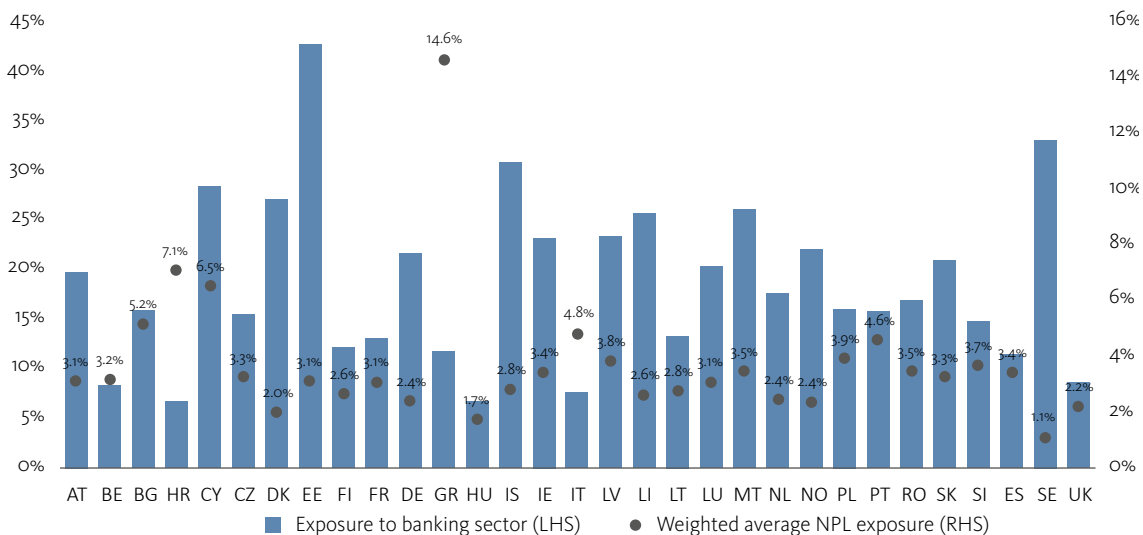
Since the virus outbreak the economic outlook has deteriorated. Even though NPL (non performing loans) reduction continued in Q4 2019, the Covid-19 pandemic has worsen the financial position of corporates and households, in particular in highly indebted countries, and might affect existing loan portfolios and efforts to manage NPLs.⁷⁷ Using the NPLs as a proxy of a bank's exposure to credit risk, a country level indicator was created for the insurance sector. The indicator was calculated as the weighted average of the NPL levels of domestic and cross borders exposures to the banking sector. In fact, a relative heterogeneity across countries could be observed (Figure 5.22), with some countries shown to have relatively higher levels of NPLs, meaning that they might be more vulnerable to potential negative effects on the real economy due to COVID-19 economic slowdown.

In case of credit events, risks from the banking sector could be transmitted to the insurance sector, through specific financial instruments holdings. Insurers' exposures towards banks are mainly driven by holdings of bank bonds but also through cash and deposits and to a minor extent only through equity (Figure 5.23). All liabilities that

are not expressly excluded from the scope of "bail-in" are "bailable-in". The main exclusions regard deposits in accordance with the statutory deposit protection scheme up to generally EUR 100,000 and secured liabilities as covered bonds. Covered bonds (i.e. secured bonds) is the largest subcategory of bank bonds held by insurers with a share of 46% of total bank bonds; these bonds are characterised by low risk.

The second largest subcategory is the one of senior bonds (unsecured), which at the end of 2019 were accounting for approximately 42% of the bank bonds. It is the most junior bonds that are first in line to be facing the losses when creditors are "bailed in". Junior bonds include subordinated bonds, hybrid bonds and convertible bonds, which amount to an almost unchanged 7.9% of the total bank bonds exposure (Figure 5.17). Finally, undertakings have substantial cash exposures, ranging from 7% (life) to 25% (reinsurers) of total investments, which could potentially be "bailed-in", hence affected in a credit event. An additional type of exposure is the one on derivatives with positive SII values (where the bank owes to the insurer), but these are typically lower than 1% of total investments.

Figure 5.22: Insurance sector exposure towards the banking sector versus average NPL ratio



Source: ECB (for EU/EEA countries), IMF (other) and EIOPA calculations.
Reference Date: Q4 2019

Note: The "weighted average NPL exposure" is calculated, for each country, as the weighted average of the NPL levels of domestic and cross borders insurers' exposures to the banking sector (home bias vs. other EU/EEA vs. CH vs. other). For example, for a country that has 80% exposure towards domestic banks and 20% exposure to other EU/EEA countries banks, the weighted average NPL exposure is computed as 80%*NPL home bias+ 20%*average NPL EU/EEA

77 EBA Risk dashboard, 14 April 2020, https://eba.europa.eu/sites/default/documents/files/document_library/Risk%20Analysis%20and%20Data/Risk%20dashboard/Q4%202019/882137/EBA%20Dashboard%20-%20Q4%202019.pdf

Figure 5.23: Exposures to banks by type of instruments and type of business

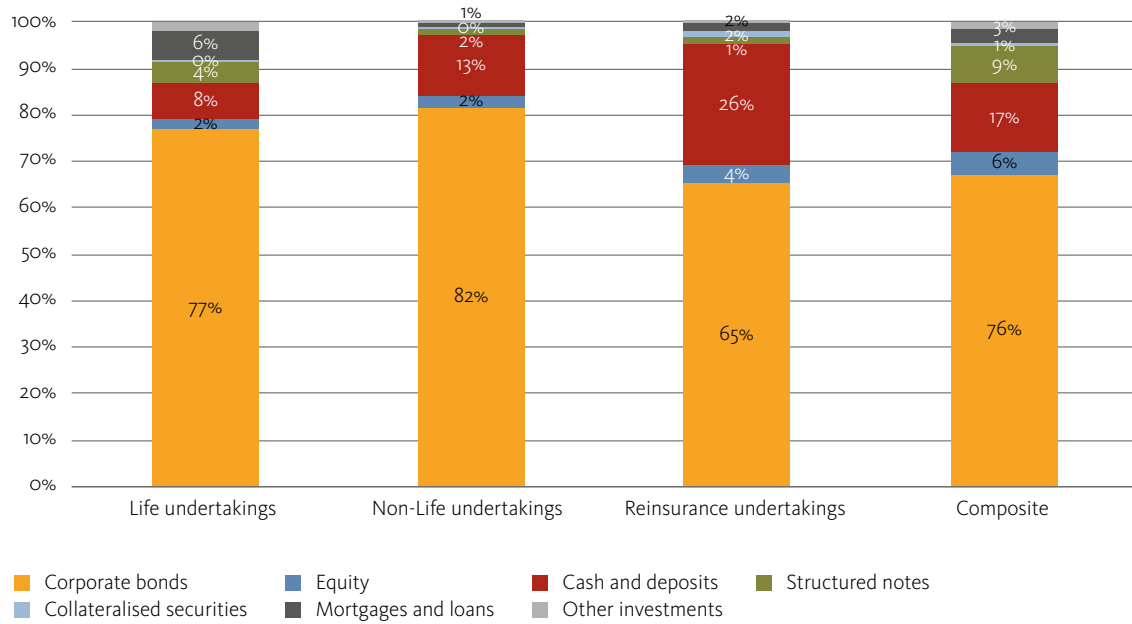
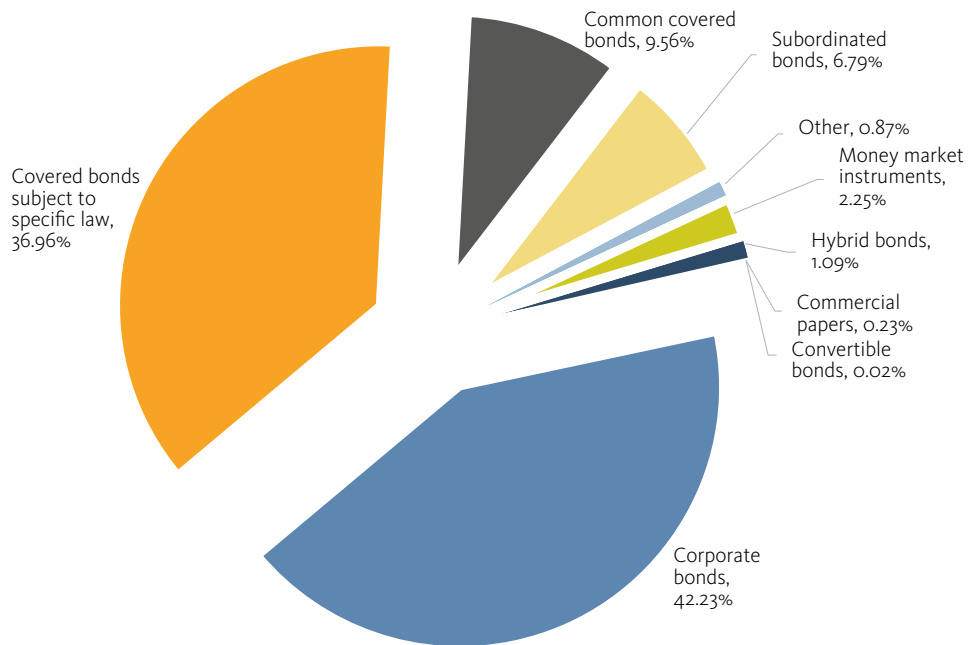


Figure 5.24: Breakdown of exposures to bank corporate bonds



Source: EIOPA Quarterly Solo
Reference Date: Q4 2019

BOX 5.2: INSURERS EXPOSURES TOWARDS THE BANKING SECTOR DURING THE PANDEMIC OUTBREAK

During the virus outbreak, banks equity prices have been fallen sharply, following the general decrease in markets. The uncertainty regarding the general economic outlook and how it will be reflected on banks led to a contemporaneous increase in the yields of the banks bonds.

Insurers by being exposed to both banks' equity and bonds are vulnerable to the above-mentioned market movements. Therefore, the scope of the following exercise is mainly focused to apply a top-down approach to understand the potential impact.

In order to approximate the effect on the market value of equity investments, the Stoxx 600 Banks index was used, whereas for an estimation on the market value of unsecured bonds the yield from the IBOXX Euro Banks index was used and for an estimation on the secured bonds the yield from the IBOXX Euro covered bond index was used (source: Refinitiv). The first step for the calculation was performed by estimating the increase or decrease observed in the corresponding index from the beginning of 2020 to the end of March and apply that change in the market value of bond and equity investments.

In order to estimate the effect on the market value of bonds the duration methodology is applied. The actual weighted average duration on insurer's corporate bonds holdings is approximately 4.6. The bank equity index declined by 35%, the unsecured bonds yields increased by 85 bps basis points from 55 to 140 bps. While the covered bond index remained unchanged at approximately 55 bps.

The main result is that unsecured bonds decline in value by approximately -7.6%. Equity exposures tend to be small (on average 1%-4% of the total exposure towards banks depending on the type of insurer) and the market repricing does not materially impact insurers. Covered bond exposures are relatively safe, as the spread remained unchanged, and represent approximately 47% of the bank bonds holdings by insurers. In summary, the transmission of the risk from the banking to the insurance sector is likely to take place via holdings of subordinated and unsecured bonds. Finally, if these bonds do not provide sufficient loss absorbing capacity also cash and deposits might be affected.

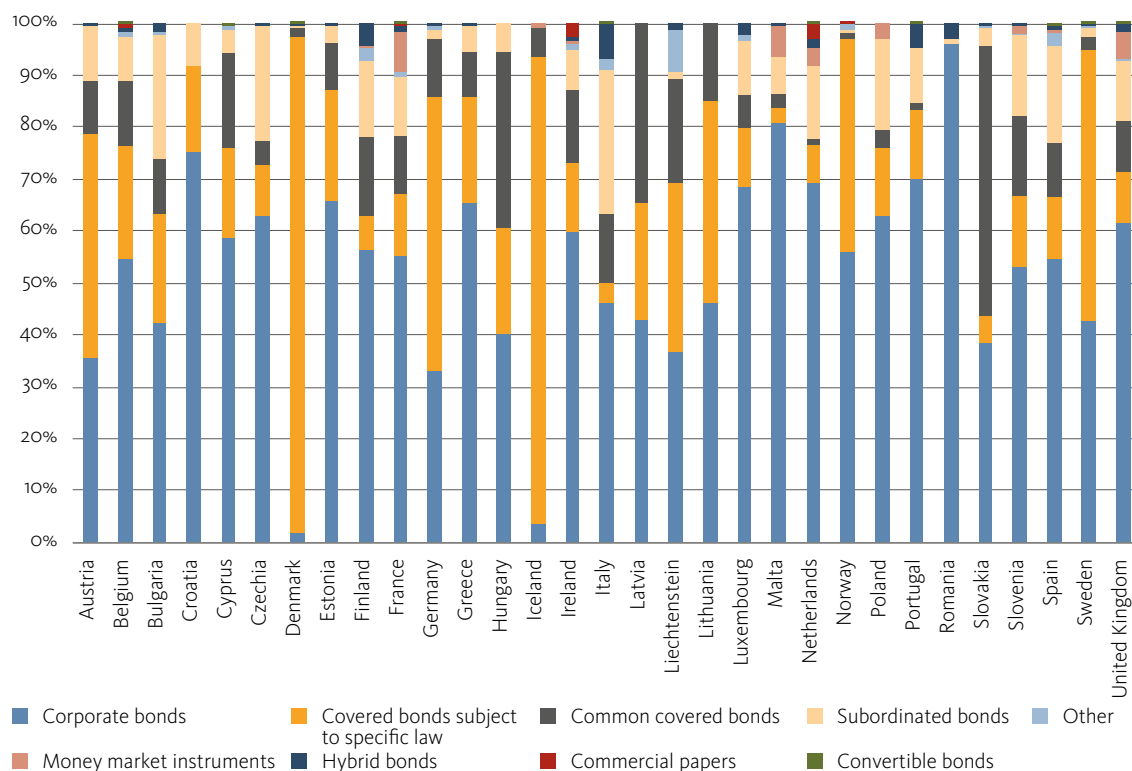
Negative effects could be amplified for insurers with high concentration of subordinated bank bonds without diversifying across countries. The breakdown, by subcategory, of the bonds portfolio exposure towards banks by country reveals some degree of concentration of junior bonds (i.e. mainly subordinated bonds), which are more likely to face losses in credit events and during market turbulence, in specific countries (Figure 5.25). This could be a potential risk transmission channel, in case the banking sector for particular countries faces severe challenges due to the market turmoil and the weak future economic outlook for the country.

LIQUIDITY RISK

Amid the distress in the macroeconomic environment, household balance sheets are expected to be crucially

affected. Unemployment is expected to increase, amplifying the impact on households' demand capacity, which is further supported by first estimations on the impact of Covid-19. Insurance demand potentially will follow with a decrease, therefore the volumes of new business could be lower than expected. Further to that, and related to regular premium policies, a fall in demand could result in an increase in lapse and surrender rates from the in force book of insurers. However, depending on the specificities of how insurance sector is structured within each jurisdiction (for example, in terms of the average income level of policyholders or disincentives for surrendering), policyholder behaviours might vary. At any case, the fall in demand could be compensated by stronger preference for some contract types, for example those focused on biometric risk coverage.

Figure 5.25: Breakdown of exposures to bank corporate bonds by country in Q4 2019



Source: EIOPA Quarterly Solo
Reference Date: Q4 2019

The shift in demand dynamics could affect insurers' liquidity positions, due to the decreased inflow of premiums. In fact, to the extent that insurers are utilising premiums from new business to pay claims of older cohorts of policies, ceasing writing new policies would amplify any existing liquidity risks and negatively affect profitability. Same reasoning applies in case of cross-subsidies across in-force cohorts, when the subsidising cohorts stop paying premiums.

Regarding claims arising from property and casualty lines of business, a contemporaneous increase could incur in virus related claims. In particular, the overall strain for the insurers might eventually depend on whether claims caused due to the lockdown are going to be covered irrespective of being mentioned explicitly or not in the contract. Litigation risk could also be increased worldwide in relation to the aforementioned claims.

However, insurers' liquidity can be further challenged by facing increased volumes of surrenders. For example, products with materially high guarantees provide less incentive to be surrendered or lapsed in the current economic

context, whereas possibly newer products with decreased guarantees levels might be out of the money or marginally in the money from the policyholders' perspective. To the extent that the surrendered products have negative technical provisions or, more general, positive surrender strains, insurers' solvency position and liquidity could be potentially negatively affected. In fact, in case of negative technical provisions, the effect is twofold: firstly, insurers do not treat these policies as liabilities in the solvency balance sheet, but rather as own funds, and, secondly, these policies could have non-zero surrender values. Although lapse risk did not materialise yet, during the Covid-19 shock, it remains to a certain extent a potential tail risk in consideration of the foreseen reduction of aggregated output.

Despite the strain on the policyholders' financials, policyholders willing to pay premiums for policies with substantial biometric coverages could offset a potential fall in demand. In fact, depending on the jurisdiction, these products are prudently priced, resulting in negative best estimates. As a result, writing or keeping such policies would support insurers' solvency and liquidity positions.

BOX 5.3: COVID-19 AND LIFE UNDERWRITING MASS LAPSE: STYLIZED SCENARIOS TO ASSESS LIQUID ASSETS' ABSORBING CAPACITY

Amid the severely affected real economy conditions due to COVID-19 and the high uncertainty on the future developments of the crisis and its repercussions, stress scenarios regarding potential massive exits from contracts could provide useful insights in terms of the liquidity resilience of insurers.

The scope of the current exercise is to assess the adequacy of particular liquid asset classes' positions, in terms of absorbing a mass lapse shock, after allowing profits emerging within the year to be used as a first line of defence to absorb the shock. In particular, the most recent data available was used, namely the assets positions and statutory profits were based on 2018 year end data, whereas for the mass lapse shock figures from year-end 2017 were used.

The assessment utilises the net mass lapse SCR for life underwriting, upon which two further scenarios are applied, namely, 50% decrease and 50% increase. These two scenarios do not intend to be interpreted as less or more severe calibrations, but rather should be interpreted in a "reverse stress test" context. In fact, in order to get a meaningful range of outcomes that allow assessing the liquidity position of assets, the aforementioned increases and decreases in SCR were considered.

The current analysis builds on data from groups reporting for financial stability. However, further sampling has been applied, because the focus is on groups that are reporting (or using) standard formula and which have non-zero exposure to life underwriting net mass lapse SCR.⁷⁸

We assume a mass lapse shock in the positions of the groups reporting for financial stability as of year-end 2017, resulting to a negative outflow for insurers during the year. As discussed above, the amount of the negative outflow is derived based on three scenarios, using as benchmark the net mass lapse SCR of life underwriting. The three scenarios tested assumed 50%, 100% and 150% of the net mass lapse SCR to be the realised additional strain (for example, additional strain equals to 50%* net mass lapse SCR).

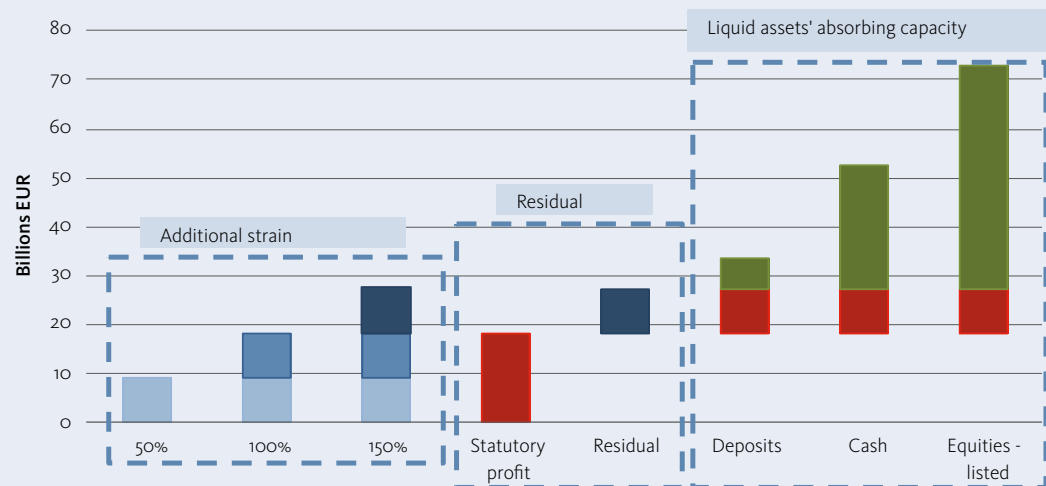
The shock is compared against the aggregated (year-end 2018) statutory profit of the groups included in the analysis, assuming the profits serve as a first line of defence before any asset liquidation. The residual amount over and above the statutory profit is then compared with three liquid asset classes, namely deposits, cash and listed equities as of year-end 2018.⁷⁹

In Figure 5.26 the additional strain is presented for each scenario. The amounts are compared with the statutory profit, with the second (marginally) and third scenario biting over and above statutory profit amount.

⁷⁸ The coverage in terms of market value of total investments (excluding assets held for UL) of groups reporting for financial stability is approximately 33%. However, it should be noted that two filters are applied: first groups reporting standard formula and second groups that have greater or equal to zero net SCR mass lapse for life underwriting. Information relevant to the purposes of the analysis is not available for companies not reporting (or using) standard formula.

⁷⁹ Potentially, part of the profit has been invested in the asset classes at the year-end. However, this is not taken into account for the current exercise. In addition, statutory profit is computed based on accounting principles, hence differing with Solvency II framework in terms of valuation. However, it can still be utilized in the current context, because ultimately the SCR serves as a benchmark in the current exercise.

Figure 5.26



Source: Annual Solvency II reporting group and Quarterly Financial Stability reporting group.

The residual amounts for these two scenarios are further compared to the amounts of the three liquid asset classes, on a standalone basis. In fact, the red amount represents the part of the asset classes needed to absorb the residual strain. The residual assets are shown to be adequate under the most severe scenario considered, and statutory profits themselves are shown to be sufficient to absorb considerable amount of strain.

INSURERS' HOLDINGS OF INVESTMENT FUNDS AND LIQUIDITY RISK

Liquidity risk for the insurer might be triggered from unit-linked policies, whose underlying funds experience liquidity issues.⁸⁰ In jurisdictions not allowing insurers to defer the surrender pay-outs, insurers remain liable to pay the surrender value, from its own assets (i.e. assets not held in unit-linked portfolio) within a certain period of time.⁸¹ Amid the sell-offs taking place during the virus outbreak, some funds have experienced large outflows and even ceased redemptions.

Although the insurance sector has not faced liquidity strains stemming from delayed unit-linked funds redemptions, this remains, to a certain extent, a potential tail risk in consideration of possible future market downturns. This

section discusses a preliminary analysis on the exposures of unit-linked and index-linked portfolio investments toward funds that have been exposed to larger redemptions in March⁸², namely: money market funds (MMFs), ETFs and undertaking for collective investment in transferable securities (UCITS)⁸³.

European insurers have significant exposures to the fund sector. As of Q4 2019, insurers hold 3.5 trillion in collective investment funds (CIUs), which accounts for 30% of their total investments (Figure 5.27). In fact, more than half of it, approximately 1.97 trillion, is held for the unit-linked portfolio.

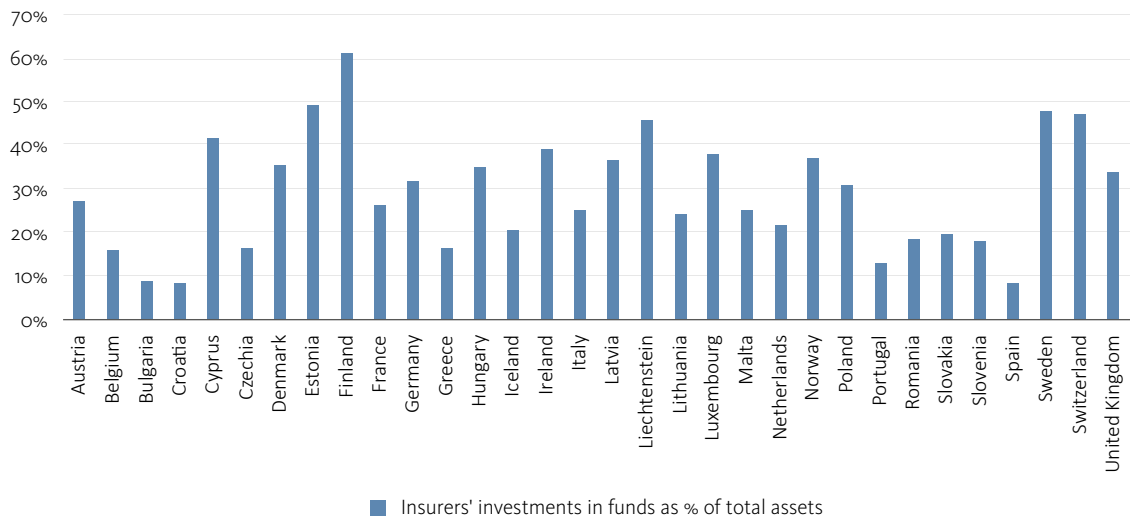
80 This section focuses on the potential liquidity risk for the insurer, not for the policyholders or for the system as a whole.

81 For example, the situation (where an insurer might be forced to liquidate own assets) may arise in situations where it is not possible to liquidate the unit-linked assets within the specified time window to meet the redemption payments, due to the illiquidity of the underlying assets - in which case the insurer would have to use its own assets to make the payment if deferral is not possible.

82 Please refer to ESMA Risk Dashboard, April 2020.

83 Please refer to the definition in Article 1(2) of Directive 2009/65/EC of the European Parliament and of the Council.

Figure 5.27. Insurers investments in funds



Source: EIOPA Quarterly Solo
Reference Date: Q4 2019

In March 2020, some fund categories saw large redemptions raising concerns over liquidity resilience. The volume of outflows as a share of total assets under management was the highest since the 2008 global financial crisis. While market conditions have stabilised since then, investment funds may see further redemption pressures if the macroeconomic outlook worsens in an unexpected way.

European area insurers' exposure to Money Market Funds (MMFs) and Exchange Traded Funds (ETF)⁸⁴ is not negligible in unit-linked and index-linked portfolios, however relatively contained compared to other fund subcategories. EU insurers exposure to unit-linked MMFs with a total of 72 billion. This corresponds to 4% of UL investments in funds (Figure 5.28) and it can go from zero to 9% across countries. According to Solvency II look through, MMFs to which insurers are exposed invest mainly in corporate bonds (most likely commercial

papers, but not possible to say with certainty as the sub category breakdown is not available in the look-through template), cash and deposits and credit derivatives. EU insurers' investments in ETFs amounts to 22 billion Solvency II amount in their UL&IL portfolios (only 7 billion are in non unit-linked), which is 1% of their investments in unit-linked funds.

Insurers' investments in UCITS represents 80% of the 560 billion unit-linked and index-linked investments of our subsample.⁸⁵ This correspond to around 440 billion of investments in UCITS (Figure 5.30). Differently, insurers' investments in UCITS in non-unit linked portfolios is lower, 16% out of out of the 744 billion. The majority of unit-linked UCITS are equity funds, 45%, followed by debt and asset allocation funds with 23% each. Asset allocation funds and "other" funds constitute together 30%.

84 The analysis has some limitations, based on which the results should be read, stemming from data availability issues. Since there is no official reporting of ETF in Solvency II data, the identification was performed based on text analysis of the names of the funds to identify the text "ETF".

85 The analysis has some limitations, based on which the results should be read, stemming from data availability issues. European area insurers' investments in UCITS cannot be fully identified in Solvency II database, as there is not a one to one correspondence between the funds subcategories reported in Solvency II, which are based on investment strategies, and the regulatory regime followed by the fund. Therefore, this flag (UCITS yes or no) is searched in another database, i.e. the ECB list of investment funds. By matching the Solvency II database with the ECB list of investment funds, the sample shrinks to 1.3 trillion of Solvency II amount investments in funds (from 3.5 trillion total CIUs), out of which around 774 billion belong to neither-unit linked nor index linked portfolios and 560 billion to unit-linked and index-linked portfolios. The sample reduction is explained by the fact that the funds identifier in the ECB list is the ISIN code, while in the SII data often the funds' identifier is specific to an undertaking (i.e. CAU Code Assigned by Undertaking) and are therefore not comparable. Moreover, the funds from the ECB list does not include pension funds and money market funds.

Figure 5.28. Unit-linked and index linked portfolios invested in funds, by fund subcategory

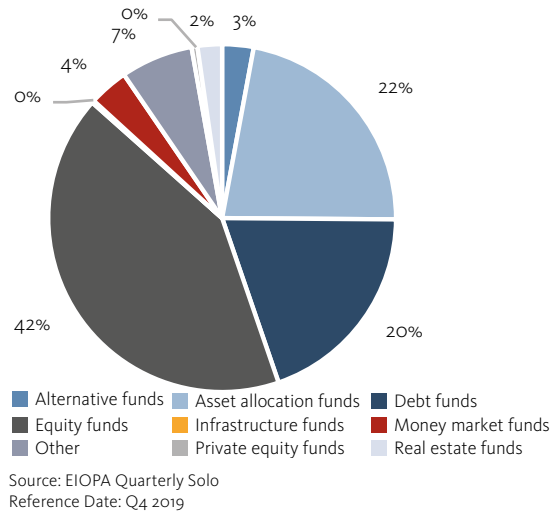


Figure 5.29. Unit-linked and index linked portfolios invested in ETFs

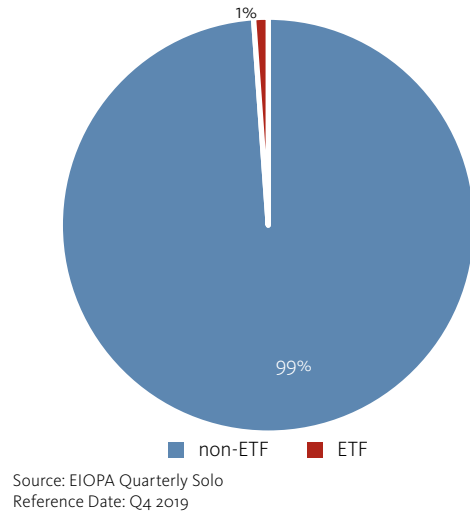


Figure 5.30 Relative insurers' investments in UCITS

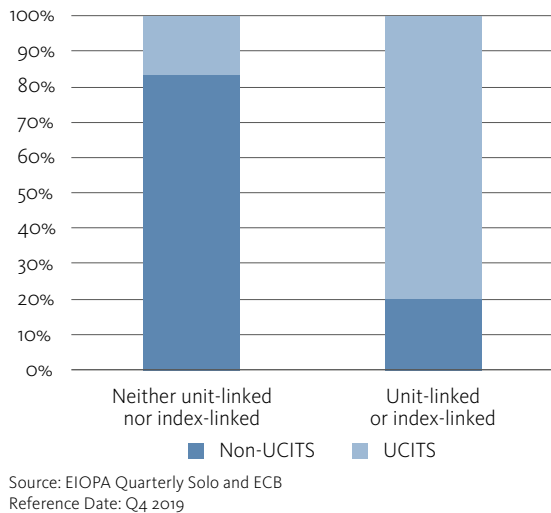
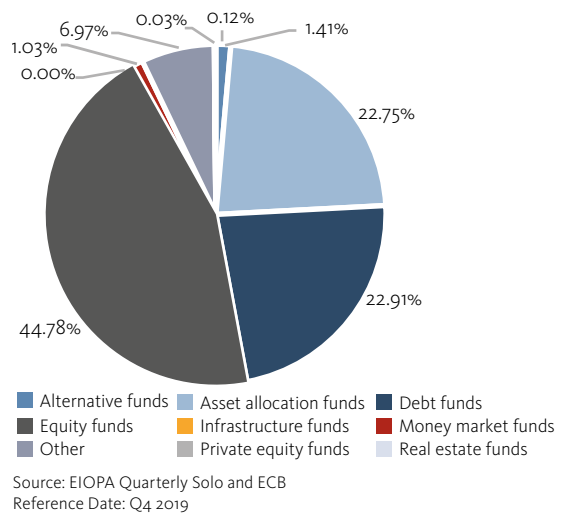


Figure 5.31 UCITS funds UL&IL portfolios, by fund category



In conclusion, EU insurers are shown to be largely exposed to funds in their UL&IL investments, including those identified as more vulnerable. In particular, UL&IL portfolio exposure to UCITS exposure seems very high, and may have liquidity risk implications for insurers. MMF are relatively smaller, although not negligible. ETFs exposure do not seem to represent a concern for insurers' liquidity.

For the future, there are further elements that can be explored to contribute into the discussion around insurers exposure to the liquidity risk of funds.

VARIATION MARGIN AND DERIVATIVE POSITIONS

Insurers use derivatives to hedge risks from investment portfolios and underwriting, but because of the increased volatility in interest rates, insurers could potentially face liquidity shortfalls due to margin calls on their interest rate swaps (IRS) derivatives portfolios⁸⁶. IRS is the largest derivative type held by EEA insurers and

⁸⁶ The floater in insurers' IRS contracts is typically a 6-month floater (sometimes 3 months or 1 year). The three most common floaters are the 6-month Euribor, GBP and USD Libor. An analysis of the 10 day cumulative daily changes in 6m interest rates in the period from January to March 2020 shows that: a) All three rates exhibited an increase in 20bps towards the end of the month, b) among the three rates the Euribor 6m is the most stable and c) the USD Libor 6m decreased sharply by 90bps across February and March.

make up 50 % of the notional of derivatives (as of 2019 Q4). An extensive analysis on the liquidity aspects due to variation margins⁸⁷ of IRS positions has already been published in the EIOPA Financial Stability Report of December 2019 with data for Q4-2018, however key elements of the analysis are replicated to reflect the evolution of IRS positions as of 2019 Q4 and the subsequent shock due to the virus outbreak.⁸⁸ In fact, based on these positions some indicative scenario about interest rate movements are considered and the subsequent liquidity positions of insurers is analysed.

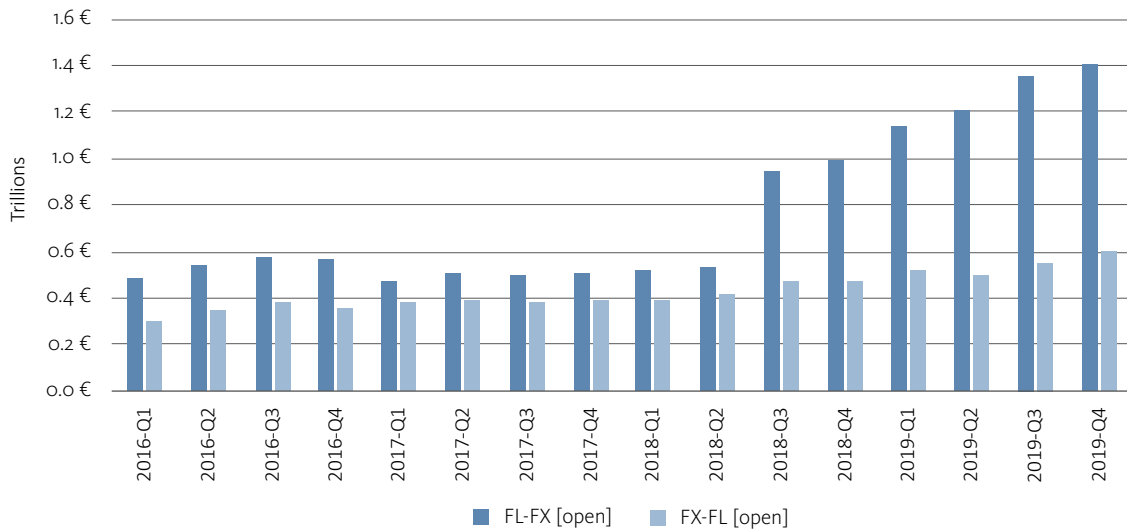
The increase in use of IRS by insurers could be related to their need to extend the duration of assets in the context of the low yield environment and negative duration gaps, resulting to EEA insurers becoming

more exposed to upward movements in interest rates.

From Q2-2018 onwards, insurers have increased the use of FL-FX IRS (Figure 5.32), in which the floating rate is paid and the fixed rate is received. In the case of FL-FX IRS, an increase (decrease) of the interest rate will decrease (increase) the market value of the derivative position in line with direction of the market movements of the bonds in the investment portfolio; this allows insurers to extend the duration of the assets to better match the typically longer duration of the liabilities.

The holdings of cash have remained rather stable over the last four quarters, whereas the value of broader liquidity sources have been increasing (Figure 5.33). This development is driven by an increase in the market value of bonds – itself a result of the low yields environment.

Figure 5.32 Notional amount (EUR) of interest rate swap of EEA insurers

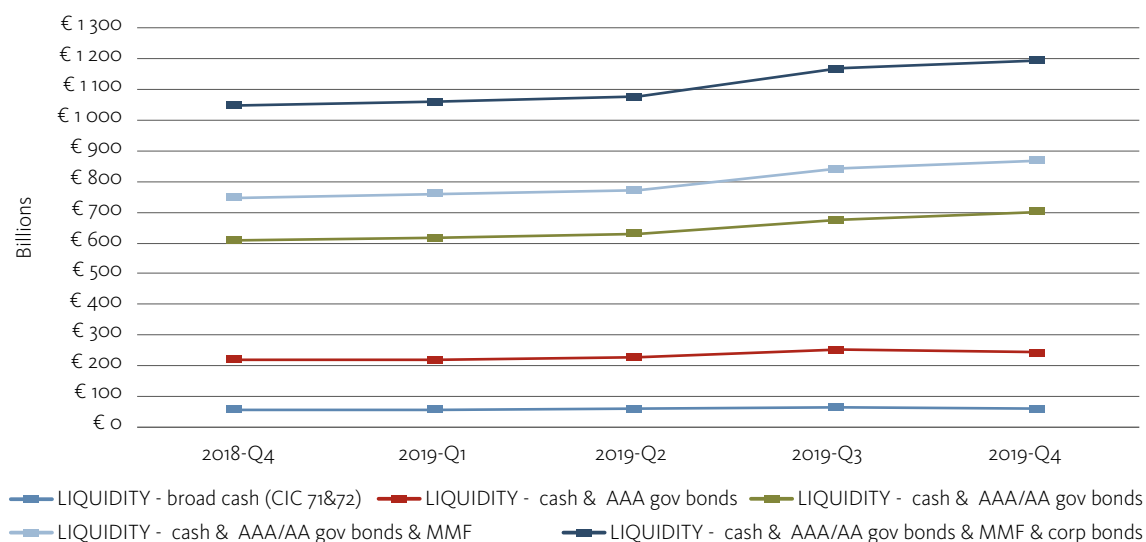


Source: Solvency II solo QRT data.
Reference date: Q4 2019.

87 'Variation margins' (VM) reflect the change in market value and portfolio composition of the contracts of a company. The change in IRS positions values are evaluated and compared before and after a shift of the level of the interest rate. In a first step, the pricing formula is inverted to extract the fixed rate (this is not reported under SII) from the market value of each IRS contract reported by insurers. In a second step, the market value of each derivative contract is calculated after the shift of the level of the interest rate. Finally, VMs are aggregated at the company level both netting or non netting positive and negative VMs.

88 https://www.eiopa.europa.eu/sites/default/files/publications/reports/eiopa_dec2019_fsr_thematic_review_impact_variation_margining.pdf

Figure 5.33 Insurers Liquidity Positions



Source: Solvency II solo QRT reporting.

Reference date: Q4 2019. Note: Cash and equivalents refers to the sum of two categories, namely coin and notes (CIC71) and cash equivalents and transferable deposits (CIC72). For government and corporate bonds with rating AAA (CQS0) and AA (CQS1) we exclude encumbered securities and in the case of 100bps and 75 bps increases we apply a haircut of 10% and 7%, respectively, assuming portfolios have weighted average duration of approximately 10 years. Money market funds shares are estimated from the list of collective investments (CIC43).

Increased market value in liquid assets could offset higher variation margins. Overall, the potential liquidity shortfalls in EUR billion are very similar compared to 2018 Q4. The variation margin is larger for positive shocks because of the direction of exposure of insurers on IRS (i.e. more FL-FX). The number of undertakings facing potential shortfalls for Q4-2019 is very similar to what obtained in the previous analysis with Q4-2018 positions.

The liquidity shortfalls have been estimated for various shifts in interest rates, indicating significant strain for insurers. In the results discussed, no netting positions with positive and negative values were considered, meaning that positive variation margins are not taken into account as inflows. Based on the analysis, variation margins range from -118 to -63.5bn depending on the shift in interest rates (Table 5.2). For example, considering the case of 25 bps up, full cash buffer and no netting could be related to a 1-2 day interest movement (first line in both tables)). In this case, 15% (26) of companies might face potential liquidity shortfalls (Table 5.3) of EUR 18.7bn if cash is the only mean that can be used to meet variation margins. This amount equals to 2.2% of the total assets of the 26 failing companies. In turn, these 26 undertakings facing liquidity shortfalls represent 20% of total assets of the analysis sample and approx. 7% of total assets of all EEA insurers.

In case of larger interest rate shifts, that could be triggered by prolonged market turmoil over several days, the cash shortfalls increase significantly. In fact, the shift of 75bps and 100bps implies cash shortfalls in the range of EUR 69bn to EUR 96bn (Table 5.2). Since such sizeable shifts are more likely to occur over a number of days rather than in one day, insurers may obtain cash through several channels, besides the repo market. One way, for instance, would be an outright sale of bonds, which has typically a settlement time of two days. Therefore, the cash shortfalls in this case could be interpreted as the potential demand for cash from insurance companies, spread across the repo, bond, MMFs and other markets.

It is noteworthy that also negative interest rate shifts generate variation margins. This is due to the fact that insurers have sizable exposures in both directions. The impact on the individual undertaking will depend ultimately by the direction of the exposure and for insurers that have positions in both directions by the possibility to net variation margins. As result, in the above-mentioned example during the course of the days that the shock occurs, inflows from cash deposited to counterparties from IRS positions which turn in favour of the company could also be a cash inflow and effectively be used to top-up the margin requirements.

Table 5.2 Liquidity shortfall in Billion euro (no netting)

Shortfall no netting [BEUR]	Variation margin	Cash (1 & 2)	Cash & AAA Gov. Bonds	Cash & AAA/AA Gov. Bonds	Cash & AAA/AA Gov. Bonds & MMF	Cash & AAA/AA Gov. Bonds & MMF & AAA/AA Corp. Bonds
+100bps	-118.0	-96.9	-57.7	-38.4	-23.0	-5.1
+75bps	-88.5	-69.0	-38.5	-19.9	-12.2	-1.0
+50bps	-59.0	-43.7	-19.1	-5.5	-3.9	-0.3
+25bps	-29.5	-18.7	-2.6	-0.1	0.0	0.0
-25bps	-15.9	-9.2	-2.3	0.0	0.0	0.0
-50bps	-31.7	-21.2	-12.3	-0.8	-0.3	-0.2
-75bps	-47.6	-34.1	-23.4	-7.0	-1.6	-0.7
-100bps	-63.5	-47.2	-34.2	-18.0	-4.7	-1.4

Source: Solvency SII QRTs and calculation.
Reference date Solo prudential Q4-2019. 171 undertakings in the sample.

Table 5.3 Share of insurers with a liquidity shortage (no netting)

Companies failing no netting [BEUR]	Cash (1 & 2)	Cash & AAA Gov. Bonds	Cash & AAA/AA Gov. Bonds	Cash & AAA/AA Gov. Bonds & MMF	Cash & AAA/AA Gov. Bonds & MMF & AAA/AA Corp. Bonds
+100bps	23%	8%	6%	5%	2%
+75bps	20%	6%	5%	4%	2%
+50bps	18%	6%	4%	2%	1%
+25bps	15%	3%	1%	1%	0%
-25bps	8%	4%	1%	1%	1%
-50bps	13%	7%	5%	4%	2%
-75bps	15%	9%	8%	5%	2%
-100bps	19%	10%	8%	7%	4%

Source: Solvency SII QRTs and calculation.
Reference date Solo prudential Q4-2019. 171 undertakings in the sample.

BOX 5.4: LATEST REGULATORY DEVELOPMENTS ON CENTRAL CLEARING AND MARGINING PRACTICES

The European Market Infrastructure Regulation (EMIR) requires the most commonly used types of derivatives contracts (incl. IRS) to be centrally cleared. (Re)insurers that have a gross exposure of more than €3 billion in OTC interest rate derivatives will be mandated to clear. Insurers may prefer not to become clearing members of a CCP themselves but rather to make use of 'client clearing' provided by another entity which would clear on their behalf. Depending on the arrangements made between these two parties, the clearing member may offer to its client (insurer) also other type of services aimed at dealing with the margin calls, e.g. collateral transformation.

Counterparties below the threshold for obligatory central clearing are exempted from clearing obligations, but could be still required to meet variation margins bilaterally. In fact, since March 2017 all counterparties are subject to exchange of variation margins for non-centrally cleared transactions. With regard to initial margins, compared to the regulatory situation applicable in 2018, further deadlines became applicable. As of 1 September 2019 the requirements apply to all cases where both counterparties have, or belong to groups each of which has, an aggregate average notional amount of non-centrally cleared derivatives that is above €750 billion; this threshold should be lowered to €8 billion from the 1 September 2020.

In view of the Covid-19 crisis, the Basel Committee and IOSCO announced on 3 April 2020 a delay in its requirements to implement the final implementation phases of the margin requirements for non-centrally cleared derivatives. With this extension, the final implementation phase will take place on 1 September 2022, at which point covered entities with an aggregate average notional amount (AANA) of non-centrally cleared derivatives greater than €8 billion will be subject to the initial margin requirements. As an intermediate step, from 1 September 2021 covered entities with an AANA of non-centrally cleared derivatives greater than €50 billion will be subject to the requirements.⁸⁹ Against this background, it remains to be observed whether these phasing in deadlines in the EU will be maintained.

However, the above margining requirements only apply to new trades concluded after the applicable phasing in deadlines. It will therefore take time before new trades replace all the legacy trades which are not covered by the requirements.

THE IMPACT OF LARGE-SCALE RATING DOWNGRADES DUE TO COVID-19 CRISIS

The economic impacts of Covid-19 and the uncertain subsequent reopening of the economies increase the risk of rating downgrades, as a result of reduced profits and pessimistic macroeconomic outlook. In principle, en masse rating downgrades of corporate bonds could affect insurers both with lower valuations in the asset side and with a potential contemporaneous increase in the spread risk SCR. EIOPA has therefore carried out several “what-if” analysis to assess the potential impact such developments could have on the balance sheet of EU insurers.

In order to assess the impact on the valuation of downgraded corporate bonds portfolios, data as of 2019 Q4 for solo undertakings were used for the asset positions.⁸⁹ For changes in the SCR, the sample was restricted to stand-

⁸⁹ In particular, we use the asset-by-asset level reported in template S.06 in combination with general balance sheet and undertaking information. The rating classification of the current portfolio uses three sources (all reported in S.06) and it does not apply look-through (i.e. it excludes the bonds indirectly held by insurers investing in Collective Investments Undertakings (CIU) (i.e.). Wherever possible, the reported credit quality step (CQS) is used. However, in cases where CQS is not available, the reported external rating and finally is taken and, as a last resort, reported internal rating. This approach increases our rating coverage for holdings of corporate and sovereign debt compared to only relying on reported CQS.

ard formula users and the spread risk factors prescribed for the non-investment grade bonds were applied to the BBB corporate bond holdings to estimate the impact in the SCR. Regarding the calculation of the value post downgrade, the reported value of the bond, the reported modified duration and an estimated change in spread were used.⁹⁰

In this work, potential downgrades from investment grade to non-investment grade have been given particular focus due to the large effects this may have on pricing and also due to secondary effects in the non-investment grade-market.

In one very severe and hypothetical scenario which was considered, all corporate bonds which are currently triple-B rated would be downgraded to non-investment grade (non-investment grade). The change in spread following this downgrade was assumed to be 491 basis points (based on the difference between the IBOXX Euro corporate BBB bond yield and average between IBOXX High Yield Fixed Rate and High Yield Liquid series). Under these severe conditions, insurers could be faced with

⁹⁰ The market value for each bond post downgrade is estimated as:

$$New\ Value = Reported\ value \times \left(1 - \frac{Duration \times Spread\ change\ in\ bp}{100}\right)$$

in the analysis, losses in market value do not consider any hedging, effects on the liabilities or hold to maturity strategies.

a 28% loss in the market value of their BBB-rated corporate bonds portfolio.

Any potential impact such losses would have on SCR ratios, however, will depend on many factors. These factors are notoriously difficult to estimate using a top-down assessment. First of all, the losses would not be directly brought into own funds of insurers. In fact, the extent of this negative development in the own funds would depend on a series of factors not included in this assessment. In particular, there are many loss absorbing mechanisms which would mitigate the actual impact of a downgrade on the insurers' balance sheets. Profit-sharing mechanisms would certainly alleviate pressure on own funds, and the volatility adjustment would also likely offer a substantial counter-cyclical effect. Second, the effect of the rating downgrade on the actual capital requirement, the SCR is also not clear cut. The lower rating will inter alia result in a higher spread risks charges in the standard formula. However, this could be offset by the loss in valuation of the bonds.

It is possible, using a set of strong assumptions about in particular diversification benefits in the market module, to estimate an impact on the overall spread risks charge and on the net basic SCR. In detail, based on the standard formula, the downgrade would increase the shock factor used to calculate the spread risk from 12.4% to 18.8%, which incorporating the assumptions about diversifica-

tion effects within market risk module would become 6.7% and 10.3%, respectively. As this increase is somewhat offset by the fall in market value of the bonds, it is found that the SCR spread risk charge could increase by around 6% in this hypothetical scenario. This would lead to an increase of 0.7% in terms of net basic SCR, i.e. a relatively limited increase (but it would coincide with a loss in asset values).

In the above severe scenario, only BBB rated bonds were considered. A potentially more likely scenario would involve downgrades across all rating categories. EIOPA therefore also assessed a "what-if" situation where rating downgrades were considered about 2 times as likely as under a more normal economic climate. In particular, the transition matrix given in Table 5.4 and increases in spread risk for downgraded AAA, AA, A and below at 16, 59, 59 and 491 respectively were assumed.

In this scenario, a much smaller share of BBB-rated bonds are downgraded compared to the very severe situation described above. While the scenario brings in losses on other rating categories, the resulting effects are still much smaller. The results are given in Table 5.5. In particular, Column 2 shows that following the shocked transition matrix, about 12.9% of the corporate bonds would be downgraded. Overall, the losses on the corporate bond portfolio are estimated to be 2.5% which amounts to about 3.3% of total (pre-downgrade) excess of assets over liabilities.

Table 5.4 Shocked rating transition matrix: Corporate bonds.

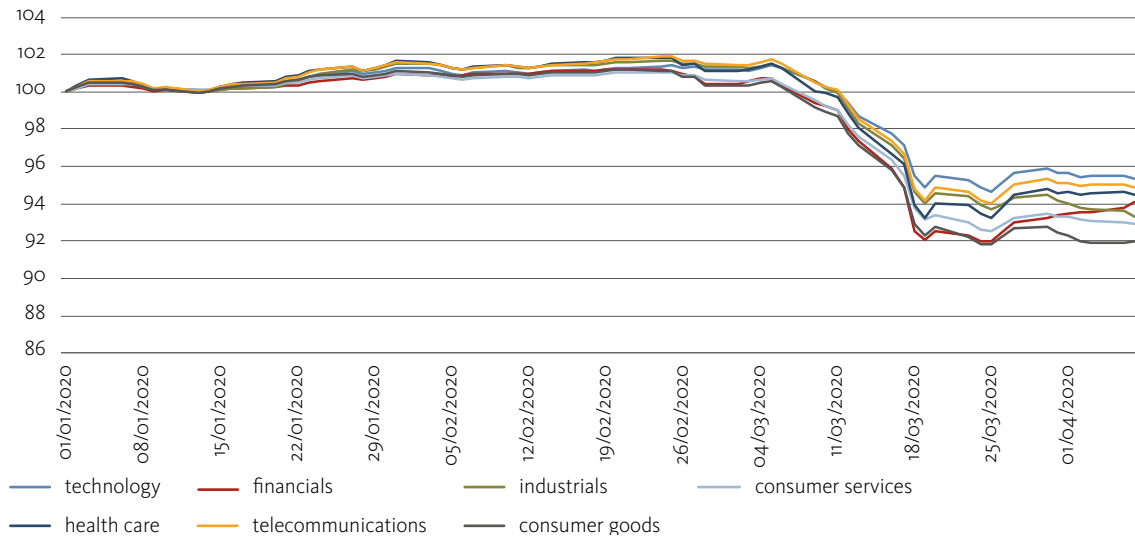
Rating	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
AAA	79.7	18.90	1.16	0.00	0.06	0.06	0.12	0.00	0.00	0.00
AA	0.00	82.0	16.92	0.92	0.06	0.04	0.02	0.02	0.00	0.04
A	0.00	0.00	89.3	10.04	0.34	0.14	0.02	0.04	0.00	0.12
BBB	0.00	0.00	0.00	92.0	6.68	0.70	0.18	0.06	0.02	0.32
BB	0.00	0.00	0.00	0.00	83.4	13.72	1.16	0.18	0.00	1.56
B	0.00	0.00	0.00	0.00	0.00	84.9	7.56	0.80	0.00	6.72
CCC	0.00	0.00	0.00	0.00	0.00	0.00	51.3	2.96	0.06	45.64

Source. We base our transition matrix on Standard & Poor Transition Matrices, which are calibrated on issuer data from 1990 to 2019. Our baseline transition matrix is an average transition matrix where we combine the matrices for financials and non-financials (the difference between these two are small compared to the "shocks" explored here).

Table 5.5 Losses based on the shocked transition matrix. Corporate bonds. Excl. unit-linked.

	Share of corp bonds down-graded	Total loss on corporate bond portfolio	Total loss % of excess of assets over liabilities
AT	13.1%	2.6%	2.1%
BE	11.9%	2.3%	3.8%
BG	10.4%	2.0%	0.6%
CY	12.2%	1.4%	0.7%
CZ	10.0%	1.8%	0.8%
DE	15.2%	2.5%	2.6%
DK	18.2%	1.1%	2.3%
EE	12.2%	1.7%	1.6%
ES	10.7%	2.4%	2.4%
FI	11.4%	2.2%	2.2%
FR	11.7%	2.3%	4.5%
GR	11.9%	2.8%	2.0%
HR	10.2%	4.2%	0.6%
HU	10.3%	2.2%	0.2%
IE	12.3%	2.4%	1.9%
IS	8.0%	2.7%	1.1%
IT	10.4%	2.8%	3.1%
LI	13.2%	1.7%	1.5%
LT	13.5%	1.8%	0.6%
LU	11.3%	2.4%	3.3%
LV	12.0%	2.0%	0.8%
MT	10.9%	1.7%	0.5%
NL	11.0%	2.2%	2.3%
NO	13.2%	1.9%	5.2%
PL	9.8%	2.1%	0.3%
PT	10.5%	2.3%	5.3%
RO	9.4%	1.7%	0.4%
SE	17.5%	0.7%	0.5%
SI	11.1%	2.2%	1.6%
SK	12.7%	3.5%	4.2%
UK	11.2%	3.9%	6.8%
EEA + UK	12.9%	2.5%	3.3%

Figure 5.34: Overall sector performance (Europe)



Source: iBoxx sector market performance indices (indexed to 100 on 1/1/2020), cut-off date: 7/4/2020

SECTORAL EXPOSURES

Further attention is paid to insurers investment exposures towards sectors particularly affected by Covid-19 hit and potential vulnerabilities stemming thereof. **Exposures to the most severely hit sectors by the Covid-19 shock are mixed. The two highest exposures are towards the financial and manufacturing sectors. While the index for financial services seems to have started to recover slowly, the performance of the industrial sector continued to deteriorate.** A detailed analysis with a specific focus on insurers’ exposure towards the banking sector, has been already discussed.

Figure 5.34 visualises how different sectors had been affected by the Covid-19 hit and how quickly they have been recovering until the cut-off date for this analysis (7 April 2020). There remains however strong uncertainty about the future. As the actual investment allocation by insurers will likely differ from the composition of the indices, it serves for illustrative purposes.

All sectors experienced two dips, the first one around 19 March and the second around 25 March. Compared to the highest levels reached in 2020, the highest losses were experienced by the **consumer goods** (-9.25%) and **financial services** (-9.14%) sectors. Based on figure 5.22, which visualises the investment breakdown by insurers by

the economic sector⁹¹, financial services account also for the largest sectoral exposure of insurers reaching 34% of the total investment portfolio. The financial sector was also the one that has been recovering the fastest growing by 2.32% since the strongest dip until the cut-off date. On the other hand, the recovery in consumer goods and services has been and will likely continue in the current

91 NACE is the harmonized statistical classification of economic activities in the European Community. It is the subject of legislation at the European Union level, which imposes the use of the classification uniformly within all the Member States. For further details about the individual sectors and subsector, please consult https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=NACE_REV2&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC&CFID=110191&CFTOKEN=3caof6dad71d377-1F2DE4Fo-F7BF-BCAE-31C18C386EA88F92&jsessionId=f900daad75c14b465532m.

The sectors according to the NACE codes and the iBoxx indices may not fully match. We are using the below as approximates:

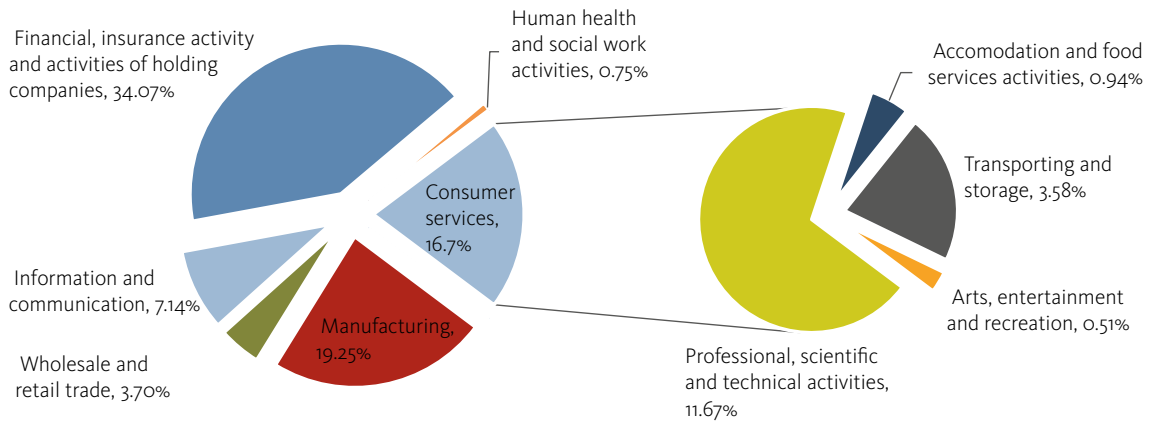
Sector according to iBoxx	Sector according to NACE (used in Solvency II reporting)
technology	information and communication
financials	financial and insurance activities
Industrials	manufacturing
consumer services	‘Consumer services’ (constructed for the purpose of this analysis); includes - arts, entertainment and recreation - accommodation and food service activities - transporting and storage - professional scientific and technical activities
health care	human health and social work activities
Telecommunications	information and communication
consumer goods	wholesale and retail trade

environment to be considerably slower with a growth of 0.16% and 0.43%, at least until the lockdown measures have been relaxed significantly. The exposures of the EEA insurers to these sectors is relatively limited with 3.7% (wholesale and retail trade) and 16.7% ('consumer services' constructed as a composite of different sectors). The latter includes exposure to sub-sectors of entertainment and accommodation that may be the hardest hit. However, exposures of insurers towards those sub-sectors are almost negligible (0.51% and 0.94% respectively).

The best future business prospects may be for the **technology, telecommunications and health care** (the last driven by pharmaceuticals). The exposures of EEA insurers to these sectors are also relatively limited with 7.14% (information and communication) and 0.75% (human health and social work activities).

With the exception of the **industrial** sector, all sectors have started to recover and remain at stable even though at lower levels than before the hit. The manufacturing sector (used as proxy for the industrial sector) has been however the second largest exposure of insurers reaching almost 20% of their total investment.

Figure 5.35 Investment breakdown by NACE code⁹²



Source: EIOPA Quarterly Solo. List of assets S.o6.o2. NACE code is used for the breakdown. Includes different types of instruments such as equity but also covered bonds and other instruments. Reference Date: Q4 2019

92 Does not add up to 100%. Sectors depicted in this chart are either the three with the largest invest allocation exposures (manufacturing, financial and insurance activities and professional scientific and technical activities) or those which were assumed to be hit the hardest by the Covid-19 shock.

BOX 5.5: FINANCIAL MARKET VOLATILITY AND SII⁹³

Financial markets have been shown significant levels of volatility amid the COVID-19 shock, with the uncertainty regarding the economic recovery and the potential second wave of the virus. During the virus outbreak, the uncertainty has been reflected in the market through sky rocketing volatility. Equity markets have been abruptly dropped, significantly decreasing the asset side of insurers' balance sheets. Regarding bond markets, in addition to the general behaviour of flight to quality, significant increase volatility has also taken place.

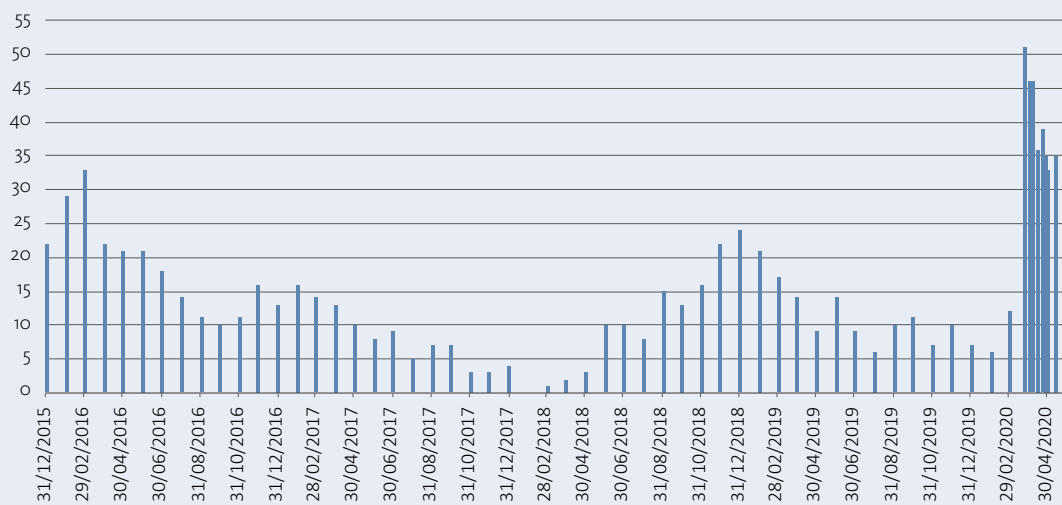
93 For a more comprehensive assessment, please refer to EIOPA publications "Report on long-term guarantees measures and measures on equity risk" and "Solvency II tools with macro-prudential impact".

Insurance solvency balance sheet is sensitive to market volatility, since it is a market consistent balance sheet. However, the long-term guarantees measures form a part of Solvency II framework that provides important tools from a financial stability perspective. In particular, among others, the symmetric adjustment (SA) for equity risk module and the volatility adjustment (VA) are examples of tools that mitigate, to a certain extent, the market volatility in own funds and/or solvency capital requirement.

The VA is an adjustment to risk free rate (RFR) term structure use to calculate technical provisions. It was introduced to prevent procyclical behaviour, by counteracting short-term artificial volatility due to spreads exaggeration in bond markets. The volatility adjustment is calculated based on prescribed formula and is added as a parallel shift to the liquid part of the RFR term structure.

The Euro VA has been considerably peaked during the COVID-19-crisis (Figure 5.36), showing a decreasing trend since then. It is worth mentioning that the country VA component was not activated from the beginning of the crisis to June. This indicates a more global nature of the COVID-19 crisis compared to other more recent sovereign crises where the country VA component was actually activated (e.g. Greece in Q1-Q3 2016 and Italy in Q3-2018).

Figure 5.36 Volatility adjustment EUR.

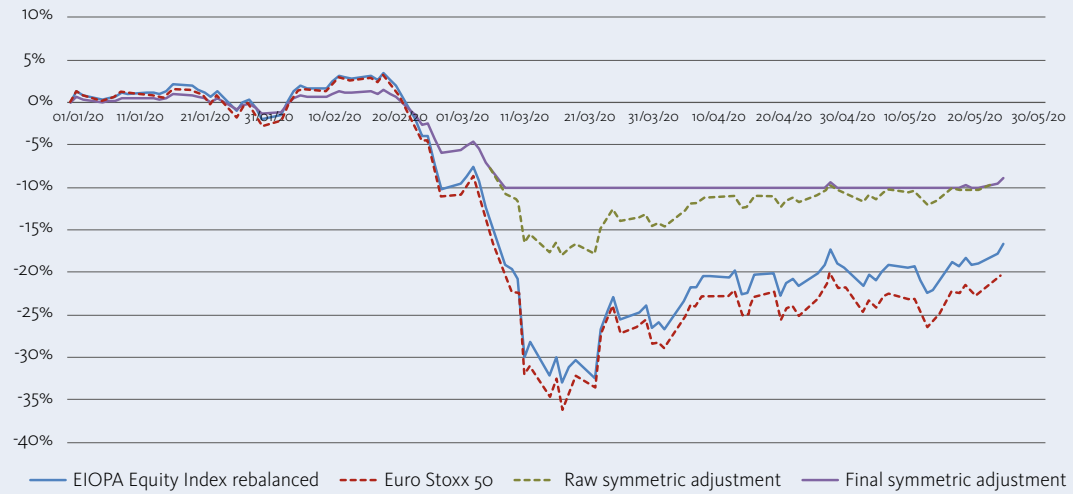


Source: EIOPA calculations. The VA is reported in Bps. Monthly frequency until 24/03/2020, weekly frequency from 24/03/2020 until 30/04/2020 and bi-weekly frequency since 30/04/2020.

The SA is a countercyclical adjustment to the equity risk charge. It is based on how a particular equity index, calculated as the weighted average of 11 indices of national equity indices of various OECD countries, has performed over the last 36 months. Depending on a prescribed formula the SA is calculated and then it is capped/floored at +10%/-10%. According to the standard equity risk module, the SA is used to increase/decrease the appropriate risk charge depending on the type of equity investment. For example, equity investment in a regulated market of EEA country could qualify as type 1 equity and could imply a risk charge of 22% (if it is of strategic nature or treated as long-term equity investment) with symmetric adjustment not being relevant, or otherwise a risk charge of 39% plus the symmetric adjustment.

The record low for the year-to-date performance of the equity index used for SA calculation was approximately -32% at 18th of March, whereas the symmetric adjustment has already reached -10% since 9th of March (Figure 5.37). However, with the rebound of equity markets, the SA started decreasing.

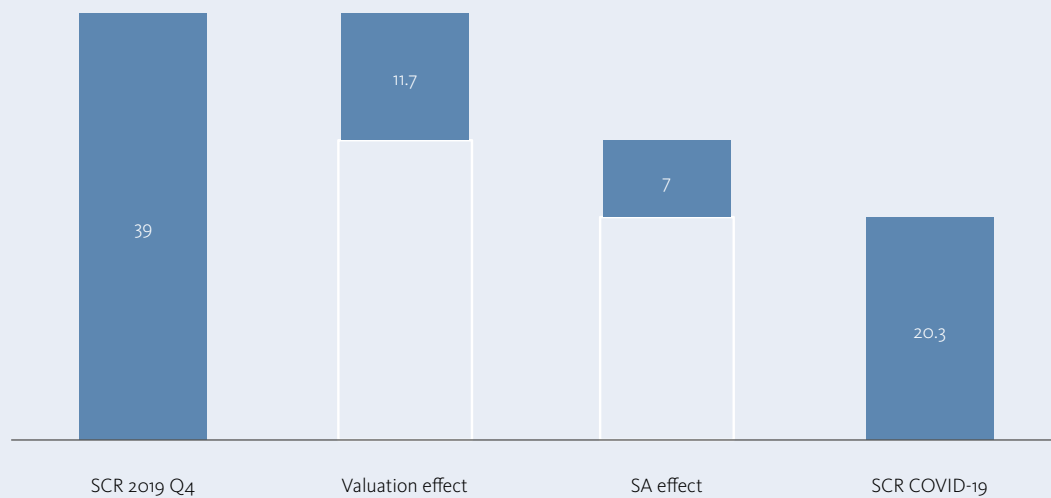
Figure 5.37 Symmetric adjustment for equity risk sub-module.



Sources: Refinitiv and EIOPA calculations.
 Note: The indices are normalised as of 1/1/2020.

An indication of how SA could affect the equity solvency capital requirement can be provided by the following example (Figure 5.38). We assume 100 Euros of type 1 equity investment, as of 2019 Q4, without being treated neither as of strategic nature nor as long-term equity investments. The SA for Q4 2019 can be considered 0% (in fact it was 0.08% for 31/12/2019) and it is assumed that the total notional holdings of equity remain the same. Recalculating the SCR based on a 30% drop in the value of the equity holdings (e.g. a similar drop was observed during mid-March for Euro Stoxx), a twofold effect on the SCR position can be identified: on the one hand, a valuation decrease of 30%, and on the other hand, 18% additional decrease due to the symmetric adjustment.

Figure 5.38 SCR: The impact of the symmetric adjustment for equity risk sub-module vs. valuation effect.



Source: EIOPA calculations.

5.3 CONCLUSION

The Covid-19 shock affected the economy in several dimensions and it is expected to have a longer-term impact also on the insurance sector. A second wave of the pandemic would further amplify the effects analysed and discussed in the report. The main risks for the insurance sector, identified during the crisis, are related to the low for long scenario (low economic growth accompanied with low yields), risk of potential rating downgrades, home biased investment behaviour and interconnectedness with the banks and sovereigns, lower profitability (underwriting and investment) and potential increase in liquidity needs and rise of cyber risk.

The prolonged low yield environment has been a fundamental risk for the insurance and pension sector already before the virus outbreak. In this respect, the situation has further deteriorated because of the Covid-19 shock. The impact of the low yield has not been explicitly analysed in this report, because EIOPA has recently published a dedicated report on this crucial matter, reflecting on the repercussions in terms of asset allocations, profitability, solvency and change in business model.

Moreover, the economic impacts of Covid-19 and the uncertain subsequent reopening of the economies increase the risk of rating downgrades, because of reduced profits and pessimistic macroeconomic outlook. In principle, rating downgrades could affect insurers both with lower valuations in the asset side and with a potential contemporaneous increase in the spread risk SCR.

Another key risk for the insurance sector could be the home bias of insurers as well as its interconnectedness with other sectors hit by the virus (e.g. banking and local sovereign). The potential of asymmetric recovery from Covid-19 shock across countries might trigger higher risks for the insurance sector that is concentrated in specific jurisdictions.

Expectations regarding decreased inflow of premiums and increased claims push to the downside the underwriting performance of insurers. Future premiums are expected to follow the trajectory of economic growth and claims could increase in particular for the non-life or reinsurance lines of business. In addition, higher lapses can be a potential scenario given the expected reduction in economic outputs. On the other hand, litigation risk can rise given the debate on the ambiguity regarding the coverage of several risks with respect to the terms and condition of the contracts.

The impact on the underwriting performance could lead to liquidity risk, especially given the decreased (realised) investment income. Existing hedging positions of the insurers via derivatives could increase the strain in the liquidity dimension due to the variation margins. Given the lower for longer scenario, to the extent that hedging arrangements increase in the future, the risk for higher variation margins amplifies the risk.

Finally, the working from home arrangements, during the virus outbreak, increases the cyber risk. The frequency of cyber-attacks reported increased, highlighting the importance for a reliable insurance market related to cyber risk.

6. BACKGROUND INFORMATION AND DATA DESCRIPTION

OVERVIEW AND DATA (RE) INSURANCE SECTOR

EIOPA publishes statistics based on quantitative Solvency II reporting from insurance undertakings and groups in the European Union and the European Economic Area (EEA). These statistics are published on a quarterly basis. Every publication is accompanied by a note describing the key aspects of the statistics published. The tables and charts are available in PDF and Excel format and are based on information from the statistics at the publication date.⁹⁴

The new supervisory regime Solvency II came into full force on 1 January 2016 as a result of timely preparation and appropriate transitional periods.

The Solvency II Directive (Directive 2009/138/EC) introduces advanced solvency requirements for insurers based on a holistic risk assessment, and imposes new assessment rules for assets and liabilities, which must be assessed at market values.

Currently the following type of information is available:

Indicators based on Individual insurance undertakings (solo data)

- › Quarterly and annual publication of statistics based on solo prudential reporting data and available on a country-by-country basis. The number of insurance undertakings for the full reporting sample is considered as 2,837.

Indicators based on Insurance groups (group data)

- › Annual publication of key indicators based on group reporting and available at EEA level from Autumn 2018.

Indicators based on reporting for financial stability purposes

Pursuant to Art. 51 Solvency II Directive 2009/138/EC insurance companies have to publish annual Solvency and Financial Condition Reports (SFCR) for groups as well as solo reports for its Solvency II regulated legal entities since May 2017. The structure of this Financial Stability Report covers Q4 2019 and focuses on European (re) insurance undertakings and groups that report regularly under Solvency II. EIOPA bases its analysis mainly on Quarterly Prudential Reporting Solo (QRS) for Q4 2019. But as not all templates and/or companies report under QRS, EIOPA also uses Annual Reporting Solo (ARS) and Quarterly Financial Stability Reporting Group (QFG) for some indicators.

Information is provided on different sample sizes as some (re)insurance companies are exempted from quarterly reporting in accordance with Art. 35 (6). Therefore, the sample of undertakings is not identical in the annual and quarterly publications. Each Figure EIOPA uses in this report is hence accompanied by a source mentioning the sample size and a note on data (if needed).

INSURANCE SECTOR

Solvency II has put in place long term guarantees (LTG) and transitional measures to ensure an appropriate treatment of insurance products that include long-term guarantees and facilitate a smooth transition of the new regulatory framework regime. The LTG measures are a permanent feature of Solvency II, where as the transitional measures will be gradually phased out until 2032, by which time the balance sheet position of insurance companies will be fully estimated at market value. For a period of 16 years after the start of Solvency II (re)insurance undertakings may apply the transitional measure on the technical provisions and the risk-free interest rate.

⁹⁴ <https://eiopa.europa.eu/Pages/Financial-stability-and-crisis-prevention/Insurance-Statistics.aspx>

The use of LTG and transitional measures is transparent and insurance companies publish their solvency ratios with and without the application of these measures. LTG and transitional measures form an integral part of Solvency II and are intended to limit the procyclicality of the regulatory changes and to facilitate the entry into the new regime by giving companies the time needed to adapt to the new solvency requirements.

The EIOPA Insurance Stress Test Report 2016 and the Report on Long-Term Guarantees (LTG)⁹⁵ have shown that, in the absence of the easing effect of the LTG and transitional measures, insurers might be induced to force sales and de-risk in order to lower their SCR and MCR, possibly pushing asset prices further down, adding to the market volatility and potentially affecting financial stability.

Pursuant to Art. 51 Solvency II Directive 2009/138/EC solo insurance companies were required to publish annual Solvency and Financial Condition Reporting (SFCR) for the first time in May 2017, followed by groups at the end of June. Hence, this report uses a huge amount of comprehensive information on Solvency II results for the first time.

The publication of SFCR reports gives access to Solvency II results. Capital requirements under Solvency II are twofold. The Solvency Capital Requirement (SCR) is the level above which there is no supervisory intervention for financial reasons. Supervisors will take measures once the SCR is breached and ultimate measures (loss of licence) once the MCR is breached.

While the quarterly templates do contain SCR and MCR information, the SCR is not necessarily recalculated for the quarterly templates which only require annual recalculation. Hence, the quarterly SCR ratios will represent a snapshot, but not necessarily the fully recalculated SCR ratios. Also, the MCR might be affected by this because the SCR is used to define a cap and a floor for the MCR value.

The SCR ratio is calculated either by using a prescribed formula, called the standard formula, or by employing an undertaking-specific partial or full internal model that has been approved by the supervisory authority. Being risk-sensitive the SCR ratio is subject to fluctuations and undertakings are required to monitor it continuously. A variety of degrees of freedom and options in the calcu-

lation of Solvency II results allows insurance companies to adjust the calculation of the SCR ratio to their risk profile.

According to Solvency II, insurers' own funds are divided into three "Tier" classes. Tier 1 capital, such as equity, is divided into restricted and unrestricted capital and has the highest ranking. Items that are included in Tier 1 under the transitional arrangement shall make up less than 20% of the total amount of Tier 1 items. Tier 2 capital is mostly composed of hybrid debt while Tier 3 is composed mostly of deferred tax assets. The eligible amount of own funds to cover the SCR has several restrictions: the eligible amount of Tier 3 capital shall be less than 15% of the SCR, while the sum of the eligible amount of Tier 2 and 3 capital shall not exceed 50% of the SCR. In order to ensure that the application of the limits does not create potential pro-cyclical effects, the limits on the eligible amounts of Tier 2 and Tier 3 items should apply in such a way that a loss in Tier 1 own funds does not result in a loss of total eligible own funds that is higher than that loss.

REINSURANCE SECTOR

The section is based on information from the Quarterly Reporting Templates (QRTs) where the reinsurance sample is calibrated with Q4 2019 data. A solo undertaking is listed as a reinsurer if it is listed as a reinsurance undertaking on the EIOPA register. The global and European market overview is also based on publicly available reports, forecasts and quarterly updates of rating agencies and other research and consulting studies.

PENSION FUND SECTOR

The section on pension funds outlines the main developments in the European occupational pension fund sector, based on information received from EIOPA's members. It covers all EEA Member States with active IORPs (i.e. occupational pension funds falling under the scope of the EU IORP Directive). There are a few Member States without such pension funds and/or where the main part of occupational retirement provisions is a line of insurance business, respectively underwritten by life insurers, and is therefore not covered. The country coverage is 81% (25 out of 31 countries).

⁹⁵ Note EIOPA's third LTG (long term guarantee) report was published in late 2018

Data collected for 2018 was provided to EIOPA on a best effort basis to report the financial position of IORPs during the covered period. For Romania, the data refers to 1st Pillar bis and 3rd Pillar private pension schemes only.

Data availability and valuation approaches vary substantially among the Member States, which hampers a thor-

ough analysis and comparison of the pension market developments between Member States. Due to differences in objective, scope, coverage and reporting period or timing of the data received by EIOPA, information reported in the different EIOPA reports may differ

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

PART II
THEMATIC ARTICLE

THE EU SUSTAINABLE FINANCE TAXONOMY FROM THE PERSPECTIVE OF THE INSURANCE AND REINSURANCE SECTOR

Marie Scholer and Lazaro Cuesta Barbera⁹⁶

ABSTRACT

This article investigates how much investment held by insurers may be eligible to the EU sustainable finance taxonomy. To this aim, Solvency II item-by-item investment data is employed. As part of the Green Deal, the Commission presented the European Green Deal Investment Plan, which will mobilize at least €1 trillion of sustainable investments over the next decade. Our results suggest that currently only a small portion of the insurer's investments are made in economic activities which might be eligible to the EU sustainable finance taxonomy as the insurer's exposures are mainly concentrating toward financial activities. On one hand, this can be interpreted as an indicator of limited exposure to transition risk for the insurance sector but on the other hand also indicates that insurers have the possibility to contribute more significantly to transitioning to a lower carbon society in the future. As major long-term investors, insurers could play a key role in the transition towards more sustainable society. In this respect, the taxonomy can help insurers by providing clarity in identifying sustainable economic activities and avoiding reputational risks.

1. INTRODUCTION

Following the adoption by the EU of the Paris Agreement⁹⁷ on climate change and the UN 2030 Agenda for Sustainable Development⁹⁸, the “European Green Deal” (COM, 2019) seeks to make Europe the first climate neutral continent by 2050. Sustainability and the transition to a low-carbon, more resource-efficient and circular economy are key in ensuring long-term competitiveness of the EU economy. In this regard, the EU sustainable finance taxonomy (hereinafter, the taxonomy) is a tool designed to facilitate the identification of sustainable economic activities with the ultimate goal to reorient capital flows towards sustainable investment. To assess how much investment held by insurers may be eligible to the taxonomy, granular Solvency II investment data reported by the European

⁹⁶ European Insurance and Occupational Pensions Authority (EIOPA), members of the Technical Expert Group on Sustainable Finance.

⁹⁷ http://unfccc.int/paris_agreement/items/9485.php

⁹⁸ <https://sustainabledevelopment.un.org/post2015/transformingourworld>

solo insurers and reinsurers for Q3 2019 have been mapped against the economic activities covered the taxonomy through the relevant NACE⁹⁹ codes. This overview will allow us to obtain a better idea to which extend insurers investments could contribute to the transition towards a low carbon economy.

2. THE EU SUSTAINABLE FINANCE TAXONOMY AND ITS USE BY INSURANCE AND REINSURANCE UNDERTAKINGS

BACKGROUND AND OBJECTIVES

In 2016, the Commission appointed a High-Level Expert Group on sustainable finance with a mandate to recommend financial reforms on which to base the EU strategy on sustainable finance. Beginning of 2018, this expert group published a report (HLEG, 2018) advocating, among other recommendations, for the introduction of a unified EU classification system - or taxonomy – to provide clarity on which activities can be considered ‘sustainable’.

In order to gradually create such a unified classification system, the European Commission prepared a proposal for a regulation on the establishment of a framework to facilitate sustainable investment (Taxonomy Regulation) in May 2018¹⁰⁰ and set up a Technical Expert Group (TEG) to develop recommendations on the technical criteria for the identification of sustainable activities. In March 2020, the TEG published its final report on taxonomy (TEG, 2020), which sets out the basis for a future taxonomy in legislation.

The main goal of the taxonomy is to help investors and companies make informed investment decisions on environmentally friendly economic activities. The taxonomy is a classification tool with a list of economic activities with performance criteria for their contribution to six environmental objectives: climate change mitigation; climate change adaptation; sustainable use and protection of water and marine resources; transition to a circular economy, waste prevention and recycling; pollution prevention and control; and protection of healthy ecosystems.

To be included in the proposed taxonomy, an economic activity must contribute substantially to at least one environmental objective and do no significant harm (DNSH) to the other five, as well as meet minimum social safeguards (e.g. OECD Guidelines on Multinational Enterprises and UN Guiding Principles on Business and Human Rights).

METHODOLOGY

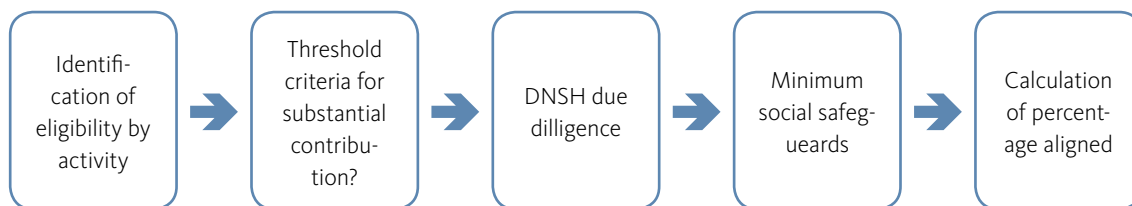
In practice, the taxonomy is a five steps process as shown in Figure 1. In order to use the taxonomy, companies will first need to identify which economy activities could be eligible using the NACE industrial classification system of economic activities. Second, for each identified activity, they need to assess whether the activity meets the relevant

⁹⁹ NACE is the statistical classification of economic activities in the European Community and corresponds to a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity.

¹⁰⁰ https://ec.europa.eu/info/publications/180524-proposal-sustainable-finance_en#risks

criteria for a substantial contribution. Third, they will also need to assess if the activity is meeting the DNSH criteria. Fourth, it is also required to verify that the activity do not violate minimum safeguards. Finally, they will for example have to calculate the proportion of turnover aligned with the Taxonomy.

Figure 1: Taxonomy - a 5 steps process.



SECTORS AND ACTIVITIES

The taxonomy will be developed gradually. The TEG report covers activities that make a substantial contribution to climate change mitigation and adaptation. More sectors and activities will be added in the future, including activities that contribute significantly to other environmental objectives. The list of activities will also be reviewed on a continuous basis to cope with the technological developments.

For climate change mitigation, the TEG identified six relevant macro-sectors based on GHG emissions (i.e. Agriculture, forestry and fishing; Manufacturing; Electricity, gas, steam and air conditioning supply; Water, sewerage, waste and remediation; Transportation and storage; Information and Communication Technologies). In addition, Buildings were identified as a critical cross-cutting issue, given their high contribution to CO₂ emissions in the EU; under the NACE-code classification Buildings would mainly correspond to two macro-sectors (Construction and Real estate activities, with application to other sectors where appropriate). For climate change adaptation, the TEG identified also the provision of non-life insurance (corresponding to the macro-sector Financial and insurance activities under the NACE classification) and Engineering activities and related technical consultancy (under NACE macro-sector Professional, scientific and technical activities) dedicated to adaptation to climate change.

For economic activities within those sectors, technical screening criteria were developed in order to identify:

- activities that are low carbon, already compatible with a net zero carbon economy;
- activities that could contribute to a transition to a zero net emissions economy but are not currently operating at that level;
- activities that enable low carbon performance or enable substantial emissions reductions;
- activities that could contribute to build climate resilience substantially reducing the negative effects of climate change.

The TEG has identified priority activities within each sector (i.e. not all activities within a macro sector are eligible to the taxonomy). Table 1 provides the overview of all NACE macro-sectors indicating whether they include economic activities currently covered by the taxonomy, either contributing to climate change mitigation and/or climate change adaptation.

Table 1: NACE macro-sectors codes covered by the taxonomy.

NACE Macro-sectors	Climate change mitigation	Climate change adaptation
A - Agriculture, forestry and fishing	✓	✓
B - Mining and quarrying		
C - Manufacturing	✓	✓
D - Electricity, gas, steam and air conditioning supply	✓	✓
E - Water supply; sewerage; waste management and remediation activities	✓	✓
F - Construction	✓	✓
G - Wholesale and retail trade; repair of motor vehicles and motorcycles		
H - Transporting and storage	✓	✓
I - Accommodation and food service activities		
J - Information and communication	✓	
K - Financial and insurance activities		✓
L - Real estate activities	✓	
M - Professional, scientific and technical activities		✓
N - Administrative and support service activities		
O - Public administration and defence; compulsory social security		
P - Education		
Q - Human health and social work activities		
R - Arts, entertainment and recreation		
S - Other services activities		
T - Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use		
U - Activities of extraterritorial organisations and bodies		

REACTIONS TO THE TAXONOMY

The need of an EU taxonomy for the effective implementation of the entire EU reforms on sustainable finance has been often highlighted (Siri & Zhu, 2019). However, the establishment of the taxonomy has encountered some critics related to the rigidity of administrative procedures to decide which activities are included in the official classification as well as the lobbying and political pressure that could influence such decisions. Some papers argue that a market-led approach could be more suitable in view of the dynamism in the field of sustainable finance, e.g. (Schoenmaker, 2018). Other critics highlight that the taxonomy follows a binary approach that neither takes into account the 'shades of green' nor the context and consequently, it would not provide the necessary incentives for investors (Caldecott, 2019).

The financial industry has overall welcomed the taxonomy but at the same time raised the practical challenges for its operationalisation, including availability of data and its

quality and reliability, the need for additional expertise and increased costs due to the complexity of the framework. The insurance industry has also warned that a too narrow taxonomy, covering a very small portion of the companies in the investors' portfolio, would have a limited value (Insurance Europe, 2019a&b). It has also been highlighted that the taxonomy is a useful tool for the integration of environmental, social and governance (ESG) factors in investment decisions, however regulatory pressure should be avoided to invest into assets just because they are in scope of the taxonomy (Pensions Europe, 2018).

USE OF THE TAXONOMY BY INSURANCE AND REINSURANCE UNDERTAKINGS

As risk managers, risk carriers and investors, the insurance industry has a vital interest and plays an important role in fostering sustainable economic and social development (UNEP, 2012). The insurance industry is increasingly integrating climate change considerations into their investment strategies and processes as part of the broader sustainability topic (Geneva Association, 2018). The use of the taxonomy will be mandatory for financial market participants offering to the market “sustainable investments products”, including insurance undertakings that provide insurance-based investment products (IBIPs)¹⁰¹; but the taxonomy can help the insurance sector more generally in the integration of sustainability considerations in their investments by providing common definitions and metrics.

In 2019, European insurers had an estimated €11.4trn of assets under management. Considering that insurers are one of Europe's largest institutional investor (in particular taking into account the role of life insurers as long-term investors), the success of the taxonomy in scaling up sustainable investments would necessarily rely on a significant level of take up of sustainable investments by insurance and reinsurance undertakings. Table 2 provides an overview of the main uses of the taxonomy by insurers and reinsurers.

Table 2: Uses of the taxonomy by insurance and reinsurance undertakings.

Use	Scope
Product disclosure	Mandatory: Life insurance undertakings selling IBIPs marketed as “sustainable investment” or pursuing environmental objectives; for other IBIPs, comply or explain.
Company disclosure	Mandatory: - Life insurance undertakings selling IBIPs marketed as “sustainable investment” or pursuing environmental objectives; for other life insurers selling IBIPs comply or explain. - Insurance and reinsurance undertakings with more than 500 employees. Voluntary: all other insurance and reinsurance undertakings.
Investment strategy - Consideration of long-term impact of investments - Supporting stewardship	Voluntary
Risk management - Identification of sustainability risks	Voluntary

101 The Sustainability Disclosures Regulation (Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability related disclosures in the financial services sector) provides specific requirements of transparency regarding financial products that pursue the objective of sustainable investment or that have similar characteristics; these requirements will be supplemented by the Taxonomy Regulation. A compromised text was agreed in December 2019 on the text of the Regulation of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment, known as “Taxonomy Regulation”.

In case of IBIPs which are made available as “environmentally sustainable” or IBIPs that promote environmental characteristics, insurance undertakings will have to disclose which environmental objectives are pursued as well as a description of how and to what extent the investments underlying the insurance product are invested in environmentally sustainable economic activities, as defined by the taxonomy. For other IBIPs, insurance undertakings have the option to complete taxonomy disclosures or include a disclaimer that the investments underlying the financial product “do not take into account the EU criteria for environmentally sustainable investments”.

In addition, insurance undertakings with more than 500 employees shall publish a non-financial statement which is expected to include information on how and to what extent the undertaking’s activities are associated with environmentally sustainable activities¹⁰²; those undertakings should consider disclosing, among other indicators, the volume of financial assets funding sustainable economic activities contributing substantially to climate mitigation and/or adaptation (absolute figures and compared to total exposures) according to the taxonomy.¹⁰³

First mandatory disclosures against the taxonomy will be published in the course of 2022. Beyond the mandatory and recommended disclosures foreseen in the EU legal framework, the taxonomy may also be used on a voluntary basis by (re)insurers in general (e.g. non-life insurers) in order to provide public information on their approach towards sustainable investment using a commonly accepted and scientific-based tool.

Furthermore, insurers, irrespective of their size and whether they offer to the market investment products as “environmentally sustainable” or not, are expected to consider the sustainability of their assets (EIOPA, 2014) and to take into account the potential long-term impact of their investment decisions on ESG factors (EIOPA, 2019a)¹⁰⁴. Insurers and reinsurers, based on the economic activities carried out by the companies they are invested in, can use the taxonomy to better understand the potential impact of individual investments on climate change and other EU environmental objectives; they can also use the taxonomy screening criteria to measure the (positive) environmental impact over time. This support can be very helpful since this area goes beyond the traditional expertise available in most of financial companies.

The taxonomy can facilitate the engagement of insurers and reinsurers with invested companies on environmental topics, providing principles and metrics to consider as a reference in the dialogue and the exercise of voting rights to foster a move towards sustainability¹⁰⁵. It can also facilitate the dialogue with asset managers as regards the implementation of the insurer or reinsurer investment strategy.

Finally, the development of the taxonomy is expected to improve the industry’s efforts to consider transition as well as physical risks in setting their investment and risk management strategies (EIOPA, 2019b). When assessing the transition risk of their investments (and underwriting) portfolios, insurers and reinsurers could pay special attention

102 See Non-financial Reporting Directive (Directive 2014/95/EU, amending Directive 2013/34/EU); the Commission committed to review the in 2020 as part of the strategy to strengthen the foundations for sustainable investment: adoption of a delegated act by the European Commission is expected by June 2021, in which this obligation should be further specified, including the relevant differences for non-financial and financial companies.

103 See Guidelines on reporting climate related information: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620\(01\)&from=](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620(01)&from=)

104 With respect to the relevance of sustainability and climate change for insurers’ investments, see Grund (2019) and Kaminker & Stewart (2012).

105 With respect to the effective engagement with invested companies, including the consideration of social and environmental factors, see De Jong, A. (2017)

to their exposures in sectors covered by the taxonomy where the underlying companies do not comply with the relevant screening criteria or the DNSH criteria. Consequently, the taxonomy might also provide valuable information for the identification and assessment of sustainability risks, including reputational risk.

3. REVIEW OF PREVIOUS WORK

In this section, we review three studies which have already considered the (re)insurer's investment portfolio in the context of climate relevant sectors and/or the taxonomy.

In its Financial Stability Report in December 2018 (EIOPA, 2018), EIOPA analysed the climate-related asset exposures of the European insurance sector¹⁰⁶. Using Solvency II asset-by-asset data, the insurer's investment were mapped to the Climate Policy Relevant Sectors (CPRS), developed in Battiston et al. (2017). The main CPRS macro-sectors are fossil fuels, utility, energy-intensive activities, buildings and transport. EIOPA estimated that between 10% and 13% of the assets held by insurers can be identified as climate-relevant. This amounts to more than 1 trillion euro in assets and corresponds to almost two-thirds of total own funds in the EEA; however a country-by-country comparison of climate-related exposures showed considerable heterogeneity across the EEA.

The TEG report (TEG, 2019) also provides an overview of the exposures of institutional investors (including insurance corporations) in CPRS in 2018. The TEG report is focused on debt and equity securities issued by non-financial corporations resident in the EU; therefore, compared to the previous EIOPA study, the analysis in the TEG report covers a significant smaller portion of the EEA insurers' portfolio (i.e. it does not cover either the securities issues by financial corporations nor the investments of European insurers outside the EU). The report shows for insurance corporations an aggregate exposure in CPRS sectors through equity holdings of 176 € bn., which is a moderate figure compared to other institutional investors, like investment funds or banks. The aggregate exposure in CPRS sectors through corporate bond holdings in 2018 amounted to 321 € bn. for insurance corporations, being insurance corporations the top holder of bonds in CPRS sectors. Exposures in CPRS sectors would represent 40.9% of the equities and 47.7% of the corporate bonds held by insurance corporations in the EU security market (excluding the securities issued by financial corporations).

Finally, the Joint Research Center (JRC) of the European Commission published a technical report on the financial impact of the taxonomy (Alessi et al. 2019), providing an overview of the equity and bond holdings of institutional sectors into holdings associated with taxonomy covered activities from 2013 to 2018. The JRC paper follows the same approach of the TEG report but it develops the analysis with focus on the specific activities covered by the taxonomy. It should be noted that the total number of activities covered by the taxonomy is much narrower than the list of activities covered by the CPRS classification. Although the CPRS classification is useful to assess the relevance of economic activities with respect to climate change mitigation activities, the taxonomy includes only those activities that can make a substantial contribution to climate change mitigation and adaptation (e.g. activities in CPRS sectors like mining and quarrying are excluded from the taxonomy). Table 3 provides a mapping of the NACE macro-sectors in the taxonomy and the CPRS, which gives an overview of the differences between them.

¹⁰⁶ The analysis considered equity, corporate bonds, property and mortgages and CIU. With respect to government bonds, see (Battiston et al. 2019).

Table 3: Mapping between the NACE macro-sectors in the taxonomy and the CPRS.

NACE macro-sectors (in bold taxonomy covered)	Climate Policy Relevant Sectors
A - Agriculture, forestry and fishing	6. Agriculture
B- Mining and quarrying	1. Fossil fuel
C – Manufacturing	3. Energy-intensive activities
	1. Fossil fuel
	5. Transportation
	9. Other
D - Electricity, gas, steam and air conditioning supply	2. Utility
	1. Fossil fuel
E - Water supply; sewerage; waste management and remediation activities	2. Utility
F – Construction	4. Buildings
	5. Transportation
G- Wholesale and retail trade; repair of motor vehicles and motorcycles	9. Other
H - Transporting and storage	5. Transportation
	1. Fossil fuel
I - Accommodation and food service activities	9. Other
	4. Buildings
J - Information and communication	9. Other
K - Financial and insurance activities	7. Finance
L - Real estate activities	4. Buildings
M - Professional, scientific and technical activities	8. Scientific Research and Development
	9. Other

The JRC analysis shows that for insurance corporations the share of holdings in taxonomy eligible activities related to activities in CPRS sectors in 2018 was around 15% for equities and around 20% for corporate bonds. Within institutional investors, the insurance sector would have the highest amount of bond holdings in taxonomy considered activities.

4. EMPIRICAL ANALYSIS – MAPPING THE TAXONOMY TO (RE)INSURANCE INVESTMENT PORTFOLIO

The main goal of our study is to map current insurer's investment to the taxonomy NACE codes in order to assess how much investment held by insurers may be eligible to the taxonomy. As described in section 2 of this paper (Figure 1), the identification of the activities that could be eligible is the first step in the practical implementation of the

taxonomy. Measuring the level of sustainability would request the four additional steps described in Figure 1; that would require an individual detailed analysis asset-by-asset. Our analysis will give a first indication of the immediate relevance of the taxonomy for the EU insurance sector as well as the potential challenges and limitation in the practical implementation of the taxonomy by (re)insurers.

4.1 DATA

In our analysis, similarly to what was done in the analysis conducted by EIOPA in the financial stability report (EIOPA, 2018) where the insurer's investment were mapped to the CPRS, we will use the Solvency II asset-by-asset data reported by the European solo insurers for Q3 2019. This differs from the perspective used in the impact assessment (TEG, 2019) and JRC (Alessi et al. 2019) analyses where the EU Security market was considered.

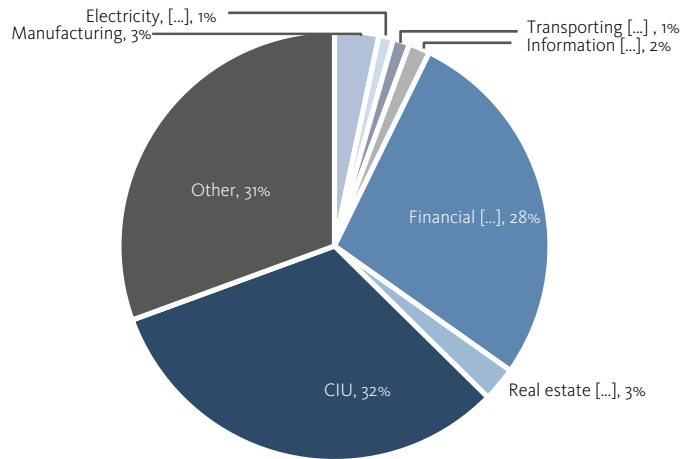
The analysis is based on 213,495 individual assets reported, which have a total value of 11,4 € tn. The investments analysed are allocated as following: ~32% Collective Investment Undertakings, ~24% government bonds, ~20% corporate bonds and ~12% equity. The ISINs of the individual assets are linked to NACE codes using a proprietary database of the European Central Bank (the CSDB database). This ensures a uniform identification of sectors per ISIN, including the full NACE code. In cases where ISIN is not reported or a match cannot be made, we rely on the NACE codes reported by the undertakings. The analysis will focus on the NACE codes (level 4) from the insurer's investment as this is the level required to perform the mapping with the taxonomy. ~71% of the ISIN CSDB NACE codes were available at level 4. The ISIN NACE codes which were not available at level 4 were therefore not considered in this study.

The percentage of the asset value held by insurers per NACE macro sector for (a) all assets, (b) equities and (c) corporate bonds can be seen in Figure 2. Most of the (re)insurers' investments are made into the macro sector "K - Financial and insurance activities"¹⁰⁷ corresponding to 28% of all investments, 54% of equities and 67% of corporate bonds.

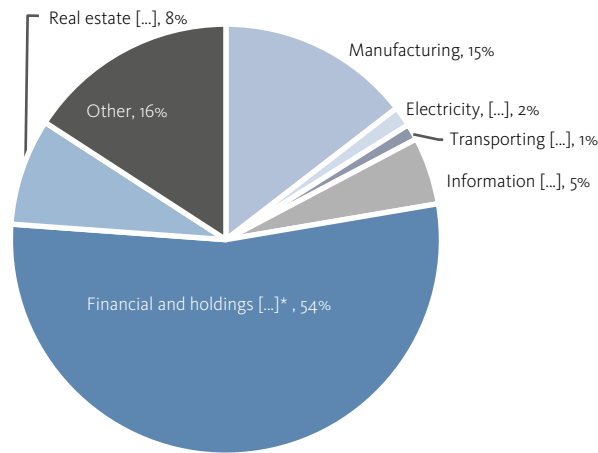
¹⁰⁷ Includes financials, covered bonds and holdings activities.

Figure 2: Percentage of the asset value held by insurers per NACE macro sector for (a) all assets, (b) equities and (c) corporate bonds (data source: Solvency II QRT data).

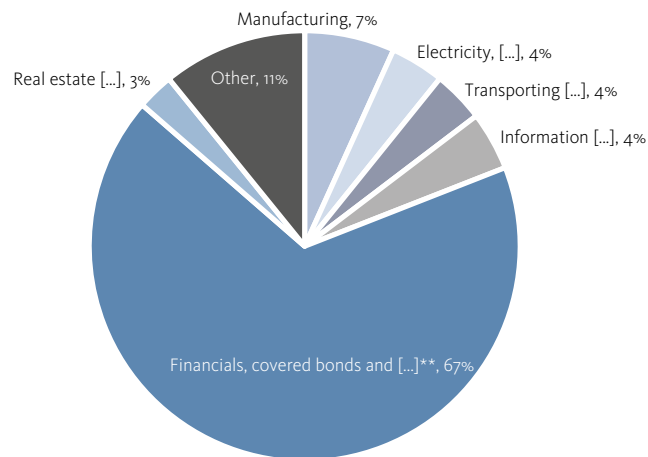
(a) All assets



(b) Equities



(c) Corporate Bonds



Note: Macro-sectors such as A - Agriculture, forestry and fishing, E - Water, sewerage, waste and remediation and F - Construction have been included in the category "Other" (i.e. category of non-relevant macro sectors for the taxonomy) as in comparison with the entire portfolio the investment values were minimal.

*Financials, holding in "activities of holding companies K.64.2" and holding in related insurance undertaking (life K.65.1.1 and non-life K.65.1.2).

**Financials, covered bonds and holdings in "activities of holding companies K.64.2".

The (re)insurers investment NACE codes were then mapped to the taxonomy NACE codes. As described in Part 2, two (climate change mitigation and adaptation) out of the six environmental objectives have been addressed in the current taxonomy. It is important to note that despite a significant overlap, the NACE codes considered for the environmental objective “climate change mitigation” of the taxonomy are slightly different from the NACE codes considered for the environmental objective “climate change adaptation” (see Table 1).

4.2 RESULTS

(i) Overall, ~5% of the total asset value (including Property assets) held by insurers may be eligible to the taxonomy (see Figure 3). The largest majority of the assets eligible to the taxonomy are invested within the EEA¹⁰⁸ (~4%). First, it is important to note that this number might underestimate the total assets held by insurers, which may be eligible to the taxonomy, as further taxonomy-eligible assets could be held in funds in Collective Investment Undertakings (about 32%) for which look-through was not possible. This is the reason why in the following analysis we will focus on direct holdings on corporate bonds and equities as more information about the NACE codes are available for these financial instruments. This relatively low amount of investment eligible to the taxonomy can also be explained by the fact that most of the (re)insurers investments are made into the macro sector “K - Financial and insurance activities”¹⁰⁹ (see Figure 2), which is not eligible for the taxonomy with the only exception of “non-life insurance” with respect to climate change adaptation.

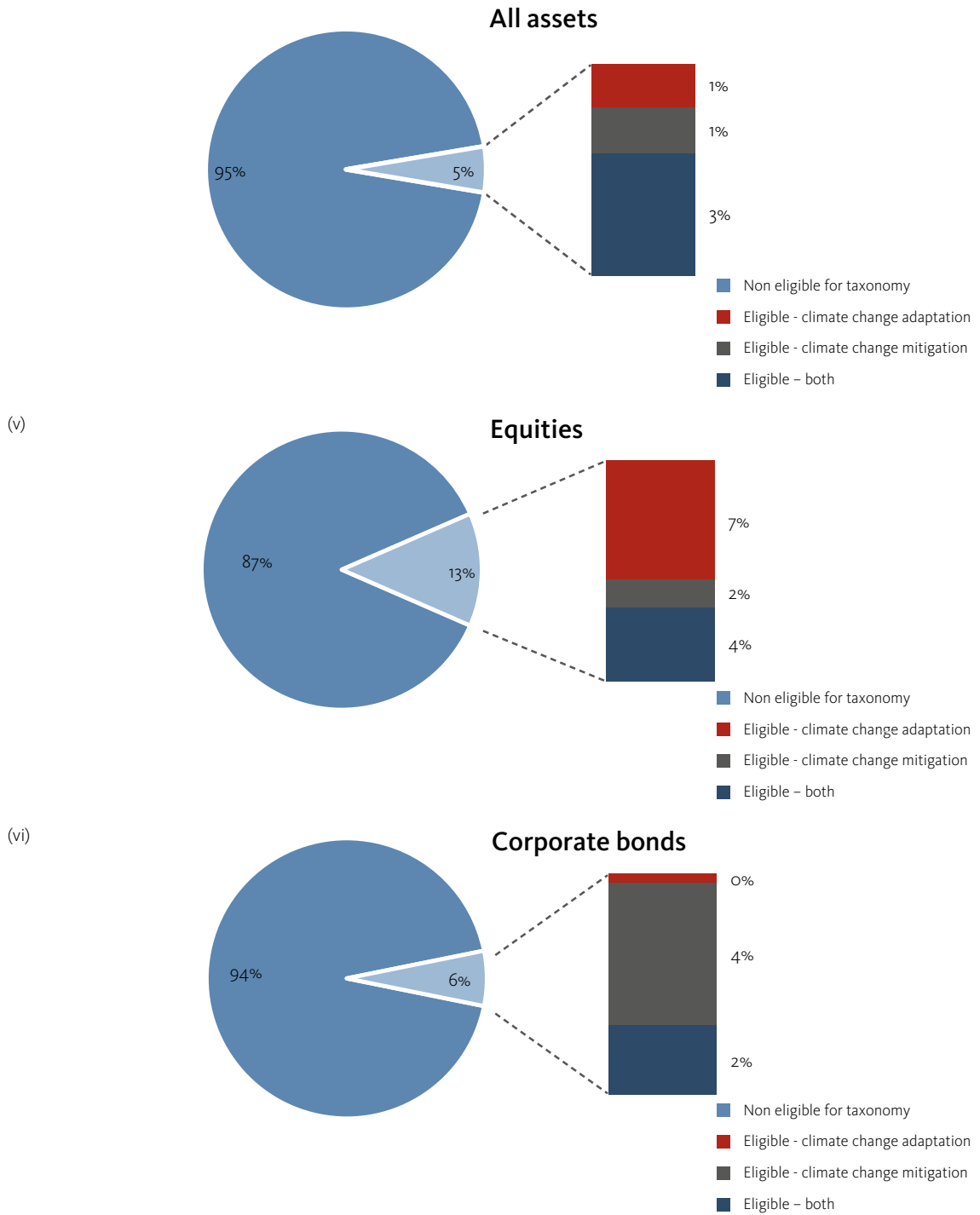
(ii) For equities and corporate bonds, ~13% and ~6% respectively of the asset value held by insurers for each financial instrument may be eligible to the taxonomy (see Figure 3). The higher share for equity investments is mainly explained by the equity holdings in non-life insurance companies (around 7% of total equity investments), which could be eligible with respect to climate change adaptation.¹¹⁰

¹⁰⁸ UK is included as Q3 2019 data are considered.

¹⁰⁹ Includes financials, covered bonds and holdings activities.

¹¹⁰ Non-life insurance eligible for the Taxonomy includes selected LOBs and insurance products and services that provide cover for climate-related hazards to activities and/or assets that are Taxonomy aligned. These criteria are conservative; however, the TEG has recommended a future review to increase coverage and enhance usability.

(iii) Figure 3: Percentage of taxonomy eligible for all assets, equities and corporate bonds (Source: Solvency II QRT data).



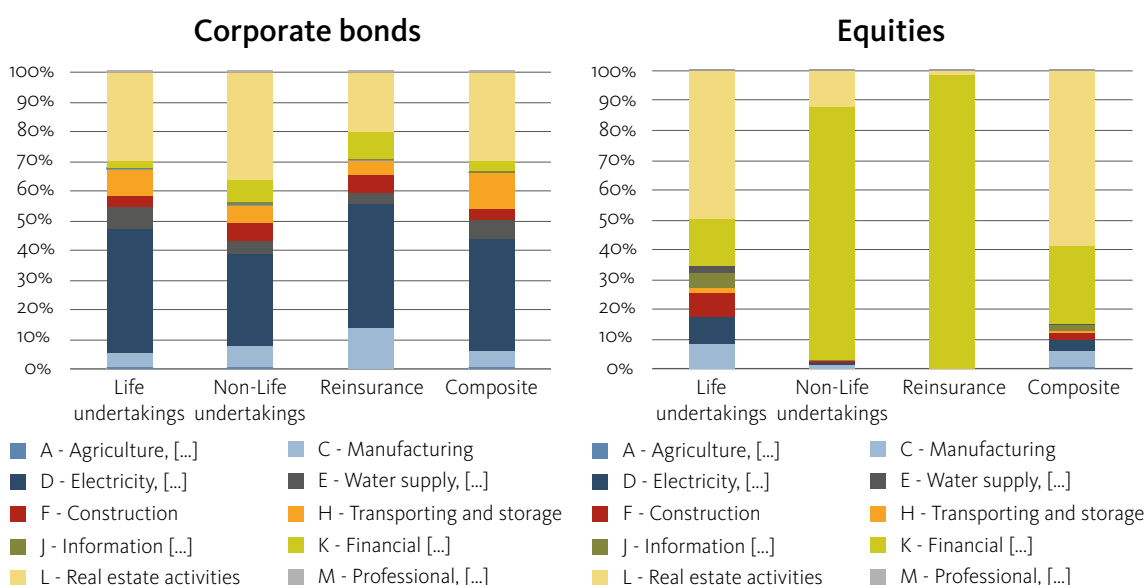
Most of the insurer’s investment are made by life undertakings (see Table 4). For equities, we observe that the percentage of taxonomy eligible investments compared to total investments is higher for non-life undertakings than for life undertakings. For corporate bonds the percentage of taxonomy eligible investments compared to total investments is similar for all types of undertakings.

For corporate bonds, most of the EU eligible assets for each type of undertaking are in electricity and the real estate activities (see Figure 4). We observe that these trends are valid for all type of undertaking (Life, Non-Life, Composite or Reinsurance companies). For equities, most of the EU eligible assets are in financial sector and real estate activities. It is interesting to observe that life undertakings’ investments eligible to the taxonomy seem to be more diversified (present in sectors such as real estate activities, financial sector, manufacturing, electricity, construction) than non-life undertakings and reinsurance where most of the taxonomy eligible investment is made in the financial sector.

Table 4: Insurer’s investments eligible to the taxonomy for corporate bonds and equities per type of undertaking (Source: Solvency II QRT data).

		Life undertakings (€ bn)	Non-Life undertakings (€ bn)	Reinsurance undertakings (€ bn)	Composite (€ bn)	Total (€ bn)
Equities	Total insurer’s investment	674	195	308	290	1,466
	Taxonomy eligible	52 (8%)	49 (25%)	42 (14%)	48 (17%)	192 (13%)
Corporate bonds	Total insurer’s investment	1,210	352	75	721	2,358
	Taxonomy eligible	79 (7%)	18 (5%)	3 (4%)	49 (7%)	149 (6%)

Figure 4: Split between NACE Macro sectors of the taxonomy eligible assets of the insurer’s portfolio per type of undertaking for corporate bonds and equities (Source: Solvency II QRT data).



The investment eligible to the taxonomy for equities are concentrated into two economic sectors, namely “Non-life insurance” and “Renting and operating of own leased real estate” which represent 54% and 28% of all economic activities eligible for equities (Table 5). Corporate bonds show more diversification in the top economic activities eligible to the taxonomy with “Renting and operating of own or leased real estate” representing 28%.

Table 5: Top five economic activities in the insurer’s investments eligible to the taxonomy for corporate bonds and equities (Source: Solvency II QRT data).

	Top five economic activities	Asset values (€ bn)
Corporate bonds	1. Renting and operating of own or leased real estate	41 (28%)
	2. Production of electricity	37 (26%)
	3. Transmission of electricity	15 (10%)
	4. Urban and suburban passenger land transport	9 (6%)
	5. Distribution of electricity	6 (4%)
Equities	1. Non-life insurance	104 (54%)
	2. Renting and operating of own or leased real estate	53 (28%)
	3. Production of electricity	5 (3%)
	4. Manufacture of industrial gases	4 (2%)
	5. Data processing, hosting and related activities	3 (2%)

5. CONCLUSION

Insurers are one of the largest institutional investor. In 2019, European insurers had an estimated €11.4trn of assets under management. As part of the Green Deal, the Commission presented on 14 January 2020 the European Green Deal Investment Plan, which will mobilize at least €1 trillion of sustainable investments over the next decade. It will enable a framework to facilitate public and private investments needed for the transition to a climate-neutral, green, competitive and inclusive economy. A key deliverable to reorient capital flows towards sustainable investment in order to achieve sustainable growth is the EU sustainable finance taxonomy. The taxonomy, as a classification tool, helps investors to make informed investment decisions on environmentally friendly economic activities. The current insurers’ investment portfolio captures around ~5% of potentially taxonomy eligible economic activities, of which ~4 % are invested in the EEA. This represents a total investment of around ~€450 billion, which could potentially contribute to sustainable investment in Europe.

The provided EIOPA’s analysis is based on Quantitative Reporting Templates (QRT) submitted by insurance and reinsurance undertakings, which only allow to perform the first step of the 5-step process for the implementation of the taxonomy (i.e. identification of eligibility by activity). Already for this step, important data limitations were faced since not all undertakings were able to report the underlying activities for their investments with sufficient granularity. Insurance and reinsurance undertakings will encounter similar data limitations, in particular to perform steps 2 to 5 for each asset: verifying compliance

with the threshold criteria for substantial contribution, due diligence of DNSH criteria, verify the minimum social safeguards, and calculation of percentage aligned. Applying the taxonomy in practice will require a significant amount of data, which are not necessarily available to the regulators and the industry, especially during the first years of implementation. Gathering all the required information will need a significant effort for the industry. A harmonized reporting of the necessary information will therefore define the success of the application of the taxonomy.

Finally, the analysis shown in this article has identified that the insurer's investments are mainly concentrating toward financial and insurance activities. Only a small portion of the investments is allocated in other macro-sectors such as manufacturing or electricity. On one hand, this minimizes the transition risk but on the other hand also indicates that insurers have the possibility to contribute more significantly to transitioning to a lower carbon society in the future. In the opinion on sustainability within Solvency II (EIOPA, 2019b), a number of insurers have announced that they will focus more of their investment to make a positive impact to the society. About 70% of insurance and reinsurance groups and solo undertakings, that responded to the consultation, are including sustainability risks in their investment management or indicated they are planning to do so in the next three years. They would for example, limit investment in non-sustainable activities/companies, introduce ESG criteria in the investment decision and promote stewardship and impact investing. The taxonomy is one tool that can help insurers by providing clarity in identifying sustainable economic activities and avoid reputational risks for undertakings. As major investors, insurers have the possibility to be a key player to transition to a more sustainable society.

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THE IMPACT OF EIOPA STATEMENT ON INSURERS' DIVIDENDS: EVIDENCE FROM EQUITY MARKET

Petr Jakubik¹¹¹

ABSTRACT

In an environment of a quick unfolding crisis with high uncertainty, the European Insurance and Occupational Pensions Authority issued on 2nd April 2020 a statement requesting (re)insurers to suspend all discretionary dividend distributions and share buy backs aimed at remunerating shareholders. Although, this should have a positive impact on the overall financial stability of the sector, it could have a negative impact on insurers' equity prices as a response to the published statement. Hence, this article empirically investigates this potential effect using an event study methodology. Although, negative drops were observed in some cases, the obtained empirical results suggest that they were not statistically significant for the overall European insurers' equity market when considering the event windows covering a few days after the publication.

4. INTRODUCTION

The insurance sector's financial stability is essential in order to ensure the access to, and continuity of, insurance services, safeguarding the ability of the industry to continue to perform its role as risk transfer mechanism from citizens and businesses and its capacity to mobilize savings and invest them in the real economy. This objective requires that (re)insurers take all necessary steps to continue to ensure a robust level of own funds to be able to meet promises to policyholders and absorb potential losses. In the wake of the coronavirus outbreak, safeguarding the stability of the sector is relevant not only from a business continuity perspective but also from a forward-looking perspective, as the sector might play a key role in supporting the economic recovery via long-term investments after the crisis. Towards this aim, the European Insurance and Occupational Pensions Authority (EIOPA) has urged insurance companies to halt dividends, buybacks and bonuses. In its statement on Thursday 2nd April evening, EIOPA said that insurance companies had to take all necessary steps to continue to ensure a robust level of own funds to be able to protect policyholders and absorb potential losses. Against this background of uncertainty, EIOPA urged that at the current situation (re)insurers temporarily suspend all discretionary dividend distributions and share buybacks aimed at remunerating shareholders.

¹¹¹ European Insurance and Occupational Pensions Authority (EIOPA).

Shares in insurance companies have fallen sharply as a response to the outbreak of Covid-19. Apart from the potential for large claims, investors have been worried about the impact of the economic slowdown on the investment portfolios that the insurers hold against their liabilities. The EIOPA statement that aimed to cut dividends could potentially negatively affect insurers' share prices further as some investors might hold insurance companies largely for their pay-outs rather than capital gains that are currently quite low. However, it is assumed that despite this negative effect for the investors in short-term, it should be rather positive news for medium and long-term investors that are maximizing their profit over longer horizon. The reason is that preserving firms' capital in the time of financial and economic crises will allow company to move through this period without any serious consequences that might lead, in extreme case, to default. In addition, such a statement could help to reduce uncertainty on potential inadequate solvency positions that would not allow absorbing the shocks implied by potential future negative consequences of the Covid-19 outbreak.

The aim of this article is to provide an empirical assessment of potential share prices drops as a response to the published EIOPA statement. This could be done via an event study framework to statistically test whether any potential drops in equity prices are statistically significant. The article is organised as follows. First, the literature related to this study is presented. Second, the theoretical framework applied to test the mentioned hypothesis is described. Third, the data sample for the empirical part is outlined. Fourth, the results of the empirical analysis are introduced. Finally, the last section concludes based on the obtained results.

5. LITERATURE REVIEW

This study could be linked to the empirical research dealing with the investors' reactions on disclosure and announcements of supervisory actions. An impressive number of empirical studies have been written on the relationship between disclosure practices and stock return volatility in the last several years. Some studies show that disclosure can mitigate uncertainty and volatility on equity markets (Beltratti, 2011; Ellahie, 2012; Petrella and Resti, 2013; Morgan et al., 2014), other studies find that under certain pre-conditions, disclosure can cause higher volatility, as market participants might misunderstand incoming information (Baumann and Nier, 2004). Under the favourable scenario, disclosure should lead to a decline in the stock return volatility and cost of capital, while unfavourable disclosure increases risk measures (Kothari et al., 2009). Studies dedicated to macro prudential analysis observe rather limited or no effect of stress test disclosure results or announcements of supervisory actions, e.g. Ellahie (2012) find that the announcement of forthcoming public disclosure does not have any significant impact on equities of Eurozone banks. Schaefer et al (2013) report the reaction of the stock returns of European and US banks to several regulatory reforms and they find only a mild effect on equity prices. The observed volatility shows the instant reaction of financial markets during an announcement day while return provides only the outcome at the end of the trading day. A quantification of volatility reaction could become a powerful tool for both policy makers and practitioners as it provides a follow-up information to any statement about volatility of an asset price in response to announcements (Neugebauer 2019).

The importance of communication by supervisory authority is well-established in the literature (Blinder et al. 2008, Ehrmann 2019). Gertler and Horvath (2018) indicate stock market responses in relation to various communication tools around scheduled meet-

ings such as media interviews, speeches, and conference discussions. Scholars suggest certain challenges might arise while assessing the impact of supervisory communication on asset prices (Alan et al. 2008). First, there are numerous unobservable factors that might affect asset prices. This means that observed volatility might be the result of shocks other than the communication. Second, the communication may be endogenous. Supervisory authorities might communicate at a certain time period due to a sudden change in the economic outlook. In this case, the prices of financial variables might be more volatile, but not mainly due to statements (Reeves and Sawicki 2007). Ehrmann et al. (2007c) suggest that such endogeneity is less of a problem when the dates of statements known in advance.

Several research papers report that economic and market conditions affect investor reactions to identical events (Gallo et al. 2016, Gupta et al. 2018). These studies suggest that the recent state of the economy or the recent direction of the market may have a bearing on the extent to which investors react to new information. Scott Docking and Koch (2005) conduct an event study to assess investor reaction to dividend increases or decreases. They find greater volatility in response to changes in dividend payment patterns when the changes were not in line with recent market trends during volatile times.

Insurance industry is typically devoted to relevant risk management activities, and there is rising need for financial markets and other stakeholders to analyse how risk information is disclosed and risk management activities are communicated (Malafrente et al. 2018). Although assessing the impact of regulatory statements on financial market have received wide attention of scholars (Bruno, et al. 2013, Neanidis 2019), there is still relatively limited research done on the regulatory statements that have different extend of binding. This article contributes into the emerging field of literature dealing with recommendations or advisory statements of supervisory authorities, in particular for insurance companies. Moreover, the growing importance of non-banking sector have an increasing impact on the economy. Hence, the announcement of supervisory authority for insurance sector may have effects not only on the insurance sector itself but also on the overall economy. While vast majority of the literature in this area focus on banking sectors, very limited was done for insurers. In this respect, this study contribute to the research that makes regulators and policy makers aware of potential consequences of supervisory announcements and communications on financial stability.

6. METHODOLOGY

The assessment of potential impact of the EIOPA statement is conducted via an event study that measures the impact of an economic event, such as the publication of EIOPA statement, on equity prices by using financial market data. In this respect, we follow an event study methodology described e.g. in Brown and Warner (1985), Thompson (1995), and MacKinlay (1997). Furthermore, Boehmer, Mucumeci and Poulsen (BMP) test, which is also known as the standardised cross-sectional test, is employed (Boehmer et al, 1991). However, when a specific event has slightly cross-correlation, the test statistics will reject the null hypothesis of zero average abnormal return too regularly when it is true (Kolari and Pynnönen (2010). Hence, the issue of cross-sectional correlation in event studies with partially overlapping event windows is addressed following Kolar and Pynnönen (2010). Given the considered event window is identical for all companies, the Adjusted Boehmer, Mucumeci and Poulsen (Adj-BMP) test, that is more robust test statistic, is used (Kolari and Pynnönen, 2010). This test takes cross-correlation and inflation of

event-date variance into account in improving the power of test statistics. Apart from the mentioned parametric methods, a non-parametric rank test proposed by Corrado (1989) is used as a robustness check.

The investigated event happened on 2nd April in the evening after market close. Hence, the event day could be denoted as 3rd April. Given the rationality in equity markets, the effects of an event should be reflected in the observed security prices, and a measure of the event's economic impact can be constructed using equity prices collected over a relatively short period. Therefore, the event window is set up from Thursday 2nd April denoted as T_1 to Tuesday 14th April denoted as T_2 corresponding to 7 working days – 1 day before the event and 5 days after. In this way, we also include the first working day after the Easter holiday.

Event studies assess the impact of the investigated event on equity prices by calculating their abnormal returns as the difference between the observed and expected returns. The observed daily logarithmic return of insurer i at time t is calculated as follow

$$R_{i,t} = \ln(P_{i,t}/P_{i,t-1}) - 1 \quad (1)$$

where

$P_{i,t}$ is equity closing price of insurer i at time t .

The expected returns of insurers' equities are estimated via simple ordinary least squares (OLS) regression employing the STOXX Europe 600 Index as a proxy for market return using daily data for the period prior the event window that we can denote as $[T_0, T_1 - 1]$. In concrete, the period since the beginning of 2017 until 1st April 2020 was employed.

The abnormal return of insurers i at time t can be expressed as

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t}) \quad (2)$$

where

$R_{m,t}$ is daily logarithmic market return at time t and α_i and β_i (representing beta of insurer i) are the estimated parameters from OLS regression.

Furthermore, the abnormal return observed through the time and across the securities are aggregated. Given n insurers, the cumulative average abnormal return for the event window is calculated as

$$\overline{CAR} = \sum_{t=T_1}^{T_2} AAR_t \quad (3)$$

where

$$AAR_t = \frac{1}{n} \sum_{i=1}^n AR_{i,t} \quad (4)$$

where T_1, T_2 represents the first and the last day of the considered event window.

The null hypothesis that the cumulative average abnormal returns are zero could be tested via the following test statistic (MacKinlay, 1997).

$$t_S = \frac{\overline{\text{CAR}}}{\sqrt{\text{var}(\overline{\text{CAR}})}} \quad (5)$$

where the variance of abnormal cumulative returns could be calculated as

$$\text{var}(\overline{\text{CAR}}) = \text{var}(AAR_t)L = \sigma^2 L \quad (6)$$

where L is the length of event window and σ^2 corresponds to a standard error of the average abnormal return cross all insurers estimated on the sample prior the event window corresponding to the interval $[T_o, T_p]$. The test statistic t_s is asymptotically standard normal distributed under the null hypothesis.

However, Brown and Warner (1985) showed that the cross-sectional test is prone to event-induced volatility. Thus, the test has low power. Hence, a standardized cross-sectional test (BMP test) proposed by Boehmer, Musumeci and Poulsen (1991), that is robust to the variance induced by the event, is employed. The test statistics can be defined as

$$t_{BMP} = \frac{\overline{\text{SCAR}}}{\sqrt{\text{var}(\overline{\text{SCAR}})}} \quad (7)$$

where

$$\text{var}(\overline{\text{SCAR}}) = \text{var}(SAAR_t)L = \sigma_s^2 L \quad (8)$$

where σ_s^2 corresponds to a standard error of the average standardised abnormal return cross all insurers estimated on the sample prior the event window corresponding to the interval $[T_o, T_p]$. The test statistic t_{BMP} is asymptotically standard normal distributed under the null hypothesis. Furthermore,

$$\overline{\text{SCAR}} = \sum_{t=T_1}^{T_2} SAAR_t \quad (9)$$

$$SAAR_t = \frac{1}{n} \sum_{i=1}^n SAR_{i,t} \quad (10)$$

$$SAR_{i,t} = \frac{AR_{i,t}}{\sqrt{\text{var}(AR_i)}} \quad (11)$$

where $\sqrt{\text{var}(AR_i)}$ is a standard error of the abnormal return corresponding to a standard error of the model for expected market returns for insurer i estimated by OLS regression.

Furthermore, the Adj-BMP test is performed using the following statistics.

$$t_{AD_BMP} = t_{BMP} \sqrt{\frac{1-\bar{r}}{1+(n-1)\bar{r}}} \quad (12)$$

where \bar{r} is the average of the sample cross-correlations of the estimation period residual – corresponding to the period $[T_o, T_p]$.

The test statistic t_{AD_BMP} is asymptotically distributed as $N(0, 1 + (n-1)\bar{r})$ under the null hypothesis.

Moreover, as a robustness check, non-parametric rank test proposed Corrado (1989) for a single day and further elaborated by Campell and Wasley (1993) for a multiday event period is used. In a first step, we transform abnormal returns into ranks. Ranking is done for all abnormal returns of both the event and the estimation period. If ranks are tied, the midrank is used.

$$K_{i,t} = \frac{\text{rank}(AR_{i,t})}{1+M+L} \quad (13)$$

where M is the number of observations in the estimation period $[T_o, T_e]$.

The null hypothesis that the cumulative average abnormal return is zero could be tested via the following test statistic.

$$t_{RANK} = \sqrt{L} \frac{\bar{K}_{T_1, T_2} - 0.5}{\sqrt{var(\bar{K})}} \quad (14)$$

where $var(\bar{K})$ represents variance of average rank of abnormal returns estimated for both estimated period and event window corresponding to the period $[T_o, T_e]$.

$$\bar{K}_{T_1, T_2} = \frac{1}{L} \sum_{t=T_1}^{T_2} \bar{K}_t \quad (15)$$

$$\bar{K}_t = \frac{1}{n} \sum_{i=1}^n K_{i,t} \quad (16)$$

This test statistic t_{RANK} is asymptotically standard normal distributed under the null hypothesis.

7. DATA SAMPLE

The impact of the EIOPA statement was tested for equity prices of 33 European (re) insurers listed via the described methodology. Simple descriptive statistics show that negative abnormal returns were observed in most cases (for almost 85% of the sample) on Friday 3rd April after the publication of the statement with average value -3.23%. However, many of those daily negative abnormal returns were recovered by positive abnormal returns in two subsequent working days with average values 0.67% and 2.55% respectively (see table below). The positive trend in market performance was changed again on 8th April with average negative return 1.08%. This losses were again received on 9th April to move again in negative territory on 14 April with average market drop by 2.11%

Table 1: Abnormal returns for 33 European (re)insurers listed

Business line	Country	Insurance company	Beta	Abnormal return							Cumulative
				02-Apr	03-Apr	06-Apr	07-Apr	08-Apr	09-Apr	14-Apr	
Life	NL	Aegon NV	1.599	3.33%	-7.24%	0.98%	3.84%	-0.62%	2.31%	-5.12%	-2.53%
	IT	Poste Italiane SpA	1.162	4.48%	1.83%	-1.65%	-0.77%	1.42%	-1.51%	-0.37%	3.44%
	NL	NN Group NV	1.178	2.39%	-5.54%	-0.68%	1.60%	-0.25%	1.55%	-4.31%	-5.23%
	CH	Swiss Life Holding AG	1.104	-0.69%	-0.74%	1.25%	2.17%	-0.73%	0.76%	-1.64%	0.39%
	NO	Storebrand ASA	1.197	-2.97%	-1.74%	4.46%	2.13%	-4.67%	-1.87%	3.35%	-1.32%
	FR	CNP Assurances SA	1.480	5.45%	-8.51%	-0.52%	6.71%	-3.97%	2.77%	-6.06%	-4.13%
	GB	Phoenix Group Holdings PLC	1.079	-4.11%	-7.20%	-1.46%	2.69%	-0.66%	4.01%	-2.41%	-9.14%
	GB	Legal & General Group PLC	1.373	2.88%	-9.24%	10.40%	6.39%	-3.84%	6.17%	-3.90%	8.85%
	GB	Prudential PLC	1.512	-1.23%	-0.92%	4.88%	3.05%	-3.68%	-2.00%	-4.14%	-4.05%
	GB	Old Mutual Ltd	1.091	-10.82%	-1.55%	-3.83%	10.79%	-1.97%	-0.65%	3.01%	-5.02%
GB	St. James's Place PLC	1.161	-0.06%	-2.80%	-0.71%	2.74%	1.72%	3.15%	-0.33%	3.70%	
Composite	NO	Gjensidige Forsikring ASA	0.718	-1.54%	0.08%	-0.51%	-1.38%	1.67%	-1.16%	4.88%	2.04%
	FR	AXA SA	1.187	-1.14%	-3.49%	1.28%	1.85%	-0.40%	-0.37%	-0.95%	-3.23%
	IT	Assicurazioni Generali SpA	0.932	1.54%	-0.27%	-0.50%	0.16%	-0.01%	-0.79%	1.45%	1.58%
	BE	Ageas SA	1.076	11.58%	-4.37%	-6.66%	-4.09%	0.48%	-1.06%	-5.09%	-9.21%
	CH	Baloise Holding AG	0.974	-0.67%	1.18%	1.07%	5.30%	-1.18%	1.96%	-0.49%	7.15%
	FI	Sampo plc	1.062	5.86%	-3.49%	-2.74%	3.23%	-0.85%	0.11%	1.45%	3.58%
	ES	Mapfre SA	1.007	0.40%	-1.40%	2.78%	3.22%	-1.95%	1.80%	-0.81%	4.04%
	CH	Zurich Insurance Group AG	1.105	0.43%	-8.40%	-2.68%	0.53%	-0.66%	0.01%	-0.83%	-11.60%
	NL	ASR Nederland NV	1.158	2.57%	-5.15%	-1.35%	1.44%	-1.63%	3.47%	-1.60%	-2.27%
	DE	Allianz SE	1.232	-1.97%	-0.24%	1.35%	0.35%	-1.07%	0.45%	0.90%	-0.23%
CH	Helvetia Holding AG	1.005	-0.15%	-2.22%	3.75%	2.23%	-0.51%	0.44%	2.70%	6.24%	
GB	Aviva PLC	1.114	2.93%	-5.52%	1.16%	6.07%	-4.99%	2.57%	-3.91%	-1.68%	

Business line	Country	Insurance company	Beta	Abnormal return							Cumulative
				02-Apr	03-Apr	06-Apr	07-Apr	08-Apr	09-Apr	14-Apr	
Non-Life	GB	Beazley PLC	0.747	2.27%	-10.67%	0.20%	6.94%	7.43%	1.37%	-8.80%	-1.25%
	GB	Admiral Group PLC	0.625	0.05%	-1.91%	-3.47%	0.12%	-0.05%	-0.47%	-0.62%	-6.36%
	BM	Hiscox Ltd	0.686	-3.70%	-1.96%	2.10%	4.57%	1.61%	7.06%	-20.39%	-10.72%
	DK	Tryg A/S	0.601	2.53%	0.13%	0.29%	3.45%	0.54%	-0.98%	1.82%	7.78%
	GB	RSA Insurance Group PLC	0.971	-0.38%	-5.35%	0.98%	2.03%	-5.63%	-1.51%	-3.28%	-13.13%
	GB	Direct Line Insurance Group PLC	0.715	-4.11%	-5.20%	5.44%	3.39%	-8.26%	3.24%	-5.23%	-10.73%
Re-insurance	FR	Scor SE	1.198	2.57%	-2.95%	4.01%	-0.58%	2.25%	3.01%	-5.00%	3.29%
	CH	Swiss Re AG	1.085	2.28%	0.63%	-0.01%	1.68%	-1.60%	1.61%	-0.64%	3.94%
	DE	Muenchener Rueckversicherungs Gesellschaft AG in Muenchen	1.153	0.43%	-2.23%	1.89%	1.19%	-0.68%	1.11%	-0.41%	1.29%
	DE	Hannover Rueck SE	1.107	0.84%	-0.08%	0.58%	1.11%	-2.75%	2.60%	-3.02%	-0.72%
Average			1.073	0.64%	-3.23%	0.67%	2.55%	-1.08%	1.19%	-2.11%	-1.37%
Average cumulative				0.64%	-2.58%	-1.92%	0.63%	-0.44%	0.74%	-1.37%	
Share of negative returns				42.42%	84.85%	42.42%	12.12%	75.76%	33.33%	75.76%	57.58%

Source: Thomson Reuters

Note: Abnormal returns are estimated via ordinary least squares (OLS) regressions employing the STOXX Europe 600 Index as a proxy for market return using daily data for the period prior the event window.

The STOXX Europe 600 Index was used as a proxy for market return. In order to calculate expected return, daily data for insurance companies using the period prior the event window were employed. In concrete, the period since the beginning of 2017 until 1st April 2020 that can be denoted as was used.

8. EMPIRICAL RESULTS

The described methodological framework was employed to empirically test the impact of the EIOPA statement on the insurers' equity prices. In this respect, we started with simple test statistic (5) proposed by MacKinlay (1997). First, we can check the significance of the abnormal return changes for single day window using the test statistics defined by formula (5).

Table 2: Test statistic for single days

	02/04/2020	03/04/2020	06/04/2020	07/04/2020	08/04/2020	09/04/2020	14/04/2020
Average abnormal return	0.64%	-3.23%	0.67%	2.55%	-1.08%	1.19%	-2.11%
Test testistic t_3	1.2439	-6.2304	1.2896	4.9193	-2.0771	2.2898	-4.0808
Cumulative distribution function	89.32%	0.00%	90.14%	100.00%	1.89%	98.90%	0.00%
Significance of negative abnormal return		***			**		***

Source: Own calculations

Note: Test statistics are calculated according to formula (5). The numbers for cumulative distribution function provide the quantiles for standard normal distribution rounded to two decimal numbers. It means for the numbers close to 100% abnormal returns are significantly positive, for the numbers close to 0% abnormal returns are significantly negative. *** represents confidence level lower than 1%, ** lower than 5% and * lower than 10% for the significance of negative abnormal return.

The obtained numbers for the test statistics suggest a significant drop in equity prices on 3rd April on the first day after the publication of the statement and further on the fourth and sixth days after the publication. On the contrary, the test statistic indicates a significant positive development in insurers' equity prices on the second, third and fifth days after the publication (see Table 2). In order to statistically test whether the negative drops are not compensated by subsequent increases, the concept of average cumulative abnormal return as defined by formula (3) to test for any significant drops for different event windows from one day to seven days (2nd period – 14th April).

Table 3: Test statistic for different lengths of event window

	02/04/2020	03/04/2020	06/04/2020	07/04/2020	08/04/2020	09/04/2020	14/04/2020
Average cumulative abnormal return	0.64%	-2.58%	-1.92%	0.63%	-0.44%	0.74%	-1.37%
Test testistic t_3	1.2439	-3.5259	-2.1344	0.6112	-0.3822	0.5859	-1.0000
Cumulative distribution function	89.32%	0.02%	1.64%	72.95%	35.11%	72.10%	15.87%
Significance of negative abnormal return		***	**				

Source: Own calculations

Note: Test statistics are calculated according to formula (5). Each column represents the event window starting from 2nd April and ending on the day reported in the header of the column. *** represents confidence level lower than 1%, ** lower than 5% and * lower than 10% for the significance of negative abnormal return.

The empirical results reveal that the negative drop in equity prices after the publication of statement was significant only when considering the event window up to two days after the event (see Table 3). For event windows starting from 2nd April and ending from three to seven days after the publication, a null hypothesis that the cumulative average abnormal returns are zero could not be rejected.

However, as the cross-sectional test used could have a lower power, a standardized cross-sectional test (BMP test) is further employed.

Table 4: BMP test statistic for different lengths of event window

	02/04/2020	03/04/2020	06/04/2020	07/04/2020	08/04/2020	09/04/2020	14/04/2020
Average cumulative st. abnormal return	0.6636	-2.0294	-1.4901	0.5268	-0.4456	0.5085	-1.0488
Test testitsic t_{BMP}	1.4823	-3.1984	-1.9120	0.5834	-0.4397	0.4561	-0.8670
Cumulative distribution function	93.09%	0.07%	2.79%	72.02%	33.01%	67.59%	19.30%
Significance of negative st. ab. return		***	**				

Source: Own calculations

Note: Test statistics are calculated according to formula (7). Each column represents the event window starting from 2nd April and ending on the day reported in the header of the column. *** represents confidence level lower than 1%, ** lower than 5% and * lower than 10% for the significance of negative abnormal return.

Although, the significance for BMP test slightly lower, it did not have impact on the main conclusion made before (Table 4). Furthermore, as this event study contains only one identical event window for all insurance companies included in the sample, BMP-adjusted test is used to address cross-sectional correlation (Kolari and Pynnonen, 2010).

Table 5: BMP-adjusted test statistic for different lengths of event window

	02/04/2020	03/04/2020	06/04/2020	07/04/2020	08/04/2020	09/04/2020	14/04/2020
Average cumulative st. abnormal return	0.6636	-2.0294	-1.4901	0.5268	-0.4456	0.5085	-1.0488
Test testitsic t_{AD_BMP}	1.4635	-3.1579	-1.8877	0.5760	-0.4341	0.4503	-0.8560
Cumulative distribution function	92.33%	0.10%	3.28%	71.29%	33.60%	66.98%	20.18%
Significance of negative st. ab. return		***	**				

Source: Own calculations

Note: Test statistics are calculated according to formula (12). Each column represents the event window starting from 2nd April and ending on the day reported in the header of the column. *** represents confidence level lower than 1%, ** lower than 5% and * lower than 10% for the significance of negative abnormal return.

Using BMP adjusted test further reduced the significance of the obtained numbers, but the main conclusions were not affected (Table 5). Moreover, the non-parametric rank test using test statistic defined by formula (14) was employed as a robustness check (Campbell and Wasley, 1993).

Table 6: Rank test statistic for different lengths of event window

	02/04/2020	03/04/2020	06/04/2020	07/04/2020	08/04/2020	09/04/2020	14/04/2020
Average rank of abnormal returns	0.5784	0.3760	0.4451	0.5436	0.4981	0.5240	0.4921
Test testitsic t_{RANK}	0.5423	-1.2136	-0.6586	0.6029	-0.0292	0.4071	-0.1443
Cumulative distribution function	70.62%	11.25%	25.51%	72.67%	48.83%	65.80%	44.26%
Significance of negative st. ab. return							

Source: Own calculations

Note: Test statistics are calculated according to formula (12). Each column represents the event window starting from 2nd April and ending on the day reported in the header of the column. *** represents confidence level lower than 1%, ** lower than 5% and * lower than 10% for the significance of negative abnormal return.

In this case, an additional decline in significance could be observed and negative returns turn statistically insignificant at 10% confidence level even for a short event window covering only two days after the publication of statement (Table 6).

CONCLUSION

A negative impact of the ongoing Covid-19 crisis on insurers is expected to gradually reduce their relatively high level of pre-crisis solvency positions increasing vulnerabilities towards potential further economic deteriorations. From broader financial stability perspectives, it is important that this crisis, which is predominantly an economic crisis, does not evolve into a financial crisis. Considering extremely high level of uncertainty on future economic developments, the EIOPA statement on postponing dividend distributions until this uncertainty resides, aims at preserving firms' capital. This should ensure insurers' smooth transition through the distress period limiting any serious consequences that, in case of further adverse developments, might ultimately lead to a financial crisis and, potentially, the need for public sector intervention.

The statement could help to reduce uncertainty on potential adverse evolutions solvency positions that would not allow absorbing the shocks implied by the expected negative implications of the Covid-19 outbreak. However, it could also have a potential negative impact on insurers' equity prices driven by investment behaviour of short-term investors maximizing their immediate profit. In this respect, this article empirically investigates whether the statement had such effect that would be statistically significant. Based on the event study methodology, the obtained empirical results suggest that despite some negative impact was observed following the announcement, it was not statistically significant over the event windows covering a few days after the publication. These results seem to be robust to different specifications using parametric tests as BMP or adjusted BMP as well as non-parametric rank test.

Hence, it could be concluded that market investors make a rational assessment focusing on long-term rather than short-term profit. This is based on the assumption that insurers with robust solvency positions can withstand market shocks, such a drop in equities or credit downgrades, without forced selling and therefore having a countercyclical role instead of amplifying the crisis. As insurers have a crucial role in the economy providing long-term funding and act as shock absorbers transferring risks from households and corporate sectors, the issued statement could contribute to ensure financial stability of the European insurance sector to support the real economy allowing quick economic recovery and avoiding deep and long recession.

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