

IMPACT OF ULTRA LOW YIELDS ON THE INSURANCE SECTOR, INCLUDING FIRST EFFECTS OF COVID-19 CRISIS

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EXECUTIVE SUMMARY

In the current macro-financial environment, one of the major concerns for the insurance market is the exceptionally ultra-low/negative level of interest rates. In addition, the Covid-19 outbreak has severely affected the macroeconomic and market conditions worldwide, with the launch of support packages and monetary easing of some central banks and governments taking place to mitigate the negative effects. The lockdowns implemented in an attempt to contain the virus outbreak have had a significant economic impact and led to the depreciation of economic outlooks for the following period. These forecasts have been surrounded by fundamental uncertainty regarding the length of the lockdowns, the confinement measures still necessary in the period ahead and the effectiveness of the policy response, hence leading to particularly large downside risks. In Europe, this was accompanied by a flight to quality, increasing the likelihood of a “low for long” scenario with adverse implications for the insurance sector. As a result, insurers are significantly challenged in terms of asset allocations, profitability, solvency and business model adaptation. The low interest rate environment was and still is, also after Covid-19, one of the main issues for the insurance market. Given this context, the report assesses the risks and implications of the ultra-low/negative yields on the investment behaviour of insurers, considers how challenged are the profitability and solvency positions of the European insurance market and describes the impact on the insurance business models and consumers. For a better understanding of the additional challenges and uncertainty coming from the Covid-19 pandemic, the report had benefited from a qualitative questionnaire (see Annex 1) that captures the NCAs views regarding the events in Q1 2020 and their expert judgement regarding potential future risks.

The ultra-low interest rates affect insurers through the balance sheet channel both on the assets and liabilities side, but also through the income channel. For the balance sheet transmission channel, the overall effect depends on the particular characteristics of the insurance company. However, because the valuation of the liabilities is performed using the EIOPA risk free rate curve, a downward shift in the rates used to derive the curve would result in lower discounting rates and therefore in an increase in the value of liabilities. On the assets side, within the low yield environment before Covid-19, the market value of insurers' investments increased following the higher valuations of fixed-income portfolios as well as the growth observed in equity markets. Moreover, during the Covid-19 shock, the flight to quality observed decreased the market value for lower rated assets. Measures such as volatility adjustment and symmetric adjustment could decrease the overall balance sheet effect due to market volatility during Covid-19 shock. In terms of the income channel, given that insurers hold fixed-income investments to a large extent, significant amounts of earned coupons and redemptions from matured bonds should be reinvested at lower rates. Considering that market yields are at very low levels, this might have an impact on insurers' profitability in the medium to long-term horizon. The Covid-19 shock of March 2020 has amplified the above-mentioned risks by pushing risk free rates and high credit quality yields lower while at the same time increasing the uncertainty and risk premia of riskier assets.

Regarding the investment behaviour of insurers in the low yield environment, despite the similar structure in the investment portfolios across years, some dynamics can be observed within different asset classes. However, the uncertainty on financial market developments during Covid-19 challenges the asset allocations and needs to be factored in appropriately. As of Q4 2019, before the outbreak of the crisis, notwithstanding the overall positive net purchases of bonds (government and corporate), insurers seem to follow a slightly decreasing trajectory in the share of the bonds portfolio mainly driven by life insurance undertakings and a slight movement towards more alternative assets. In Q4 2019, life and composite insurers dominantly drove the net purchases for bonds of which significant amounts were yielding negative. Regarding equity investments, life and non-life insurers have the most significant share in net purchases. Life, non-life and composite companies supported the increasing trend of investments in mortgages and loans. Additionally, life undertakings drove the increase in real estate investments. Furthermore, the share of lower rated and not rated bonds decreased in insurers' portfolios. However, there is a certain degree of heterogeneity of the portfolios' credit quality composition across countries. In addition, a trend towards increasing average maturities of bonds could be observed. The incentives for such a change could be explained by a search for higher yields due to illiquidity premium, assets and liabilities matching or a combination of the two.

The decrease in yields affects the income of insurers, particularly in the case of life portfolios with high guarantees stemming from products sold in the past. The combination of negative duration gap, reinvestment in lower yields and the long-term duration of liabilities is expected to put additional strains on the medium to long-term profitability of insurers. The analysis of the bonds' cash-flows based on coupon projections reveals that at least half of their value would be lost in 10 year-time assuming reinvestments at the current level of interest rates. The Covid-19 pandemic and the resulted central banks' response measures to alleviate the impact on the economic activity will contribute to the continuation of the low interest rate environment.

The low yield environment affects directly the solvency position of insurers typically through the balance sheet channel, but also indirectly on a longer time horizon via the income channel. The excess of assets over liabilities has slightly depreciated since interest rates decreased further in 2019, but had a comeback at the end of 2019 reaching the maximum level since the entry into force of the Solvency II regime (see Chapter 4.1). The SCR ratios have shown signs of deterioration for all types of business since the end of 2018, with the median value slowly decreasing for each quarter of 2019 with the exception of Q4 2019. This increase in Q4 2019 was driven by a slight increase in interest rates and by some legislative changes. The Covid-19 shock added additional pressure on insurers' solvency ratios through increased market volatility, adverse movements in equity prices, bond yields and credit spreads and potential bonds downgrades. The report presents a methodological approach that estimates the sensitivity of the balance sheets of insurers to market developments in one of the worst days in the financial markets (18th of March) since the pandemic outbreak. Considering the fact that most of the insurance undertakings were well capitalised at the end of 2019, the analysis has as input the market developments and the RFR curves for 18th of March 2020. The estimates show that some insurers could suffer losses in the excess of assets over liabilities, with the overall market potentially losing more than a third of their excess of assets over liabilities based on this methodological approach. Exact losses are, however, hard to estimate given that Solvency II measures such as the volatility adjustment and the symmetric adjustment of the equity capital charge compensate some of the losses and that several insurers also hedge these risks.

Finally, the direct impact both on the business model of insurance companies and on the policyholders can be observed. Regarding the insurers' business model, there is an evidence of a gradual shift from with profit participation products with guaranteed returns towards pure unit-linked products and hybrid products since at least 2016. In addition, the implications of low yield environment are also reflected in the lower levels of interest rate guaranteed products sold during the last years. From a consumer's perspective, complex unit-linked contracts have been identified as an area of concern by national supervisory authorities. Higher costs as well as the fact that consumers are bearing the risk in unit-linked products could lead to a mismatch between consumers' expected and actual returns. In addition, while all risks highlighted above are heightened due to Covid-19 crisis, particular concern and detrimental outcomes for policyholders can emerge in relation to unit-linked products.

1. INTRODUCTION/MARKET DEVELOPMENTS

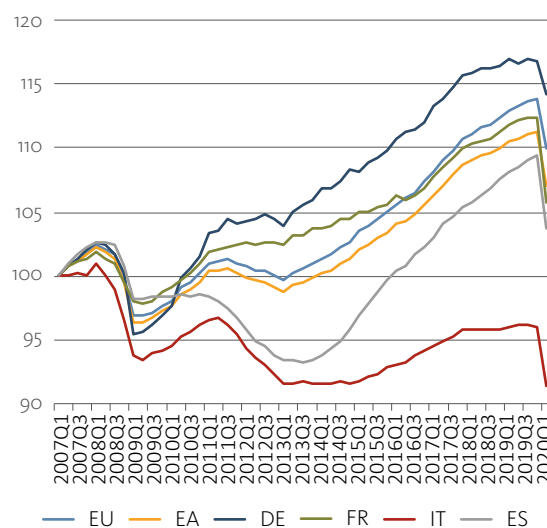
The Covid-19 outbreak has severely affected the macro-economic and markets conditions worldwide, with the launch of support packages and monetary easing of some central banks and governments taking place to mitigate the negative effects. The economic lockdowns in an attempt to contain the virus outbreak have already led to significant downside revisions of economic outlooks. These forecasts have been surrounded by fundamental uncertainty regarding the length of the lockdowns, the confinement measures still necessary in the period ahead and the effectiveness of the policy response, hence leading to particularly large downside risks. The resulting flight-to-quality behaviour increased the risk of “low for long” scenario, while the risk bearing capacity of insurers was further challenged due to high economic uncertainty, particularly in terms of asset allocation, profitability, solvency and business model adaption.

Despite the variability of GDP growth across countries, at the European level the GDP growth has slowed down since the beginning of 2018 (Figure 1.1). A fall in the external demand accompanied by increasing trade and political uncertainties negatively affected growth during 2019. However, the strong domestic demand supported economic growth even though 2019 Q4 was negatively affected by temporary factors such as strikes in France and a downturn in manufacturing sector. Covid-19 outbreak is expected to affect GDP growth significantly, as it is already indicated by 2020 Q1 decrease (Figure 1.1). The longer-term impact is still uncertain. Based on the European Commission, an annual decrease of 7.4% for the real GDP is forecasted for 2020 at the EU level, with a rebound of 6.1% for 2021.²

The inflation rate for EU and EA (HICP rate) has trended upwards during the beginning of 2019 reverting to a decreasing trend onwards (Figure 1.2). The ongoing low levels of energy prices, after their decrease during 2018,

affected the slowing down of inflation in the Euro area during 2019, which was further amplified at the beginning of 2020 (Figure 1.3). In fact, in the EU and the Euro area, the HICP rates peaked at 1.7% and 1.4%, respectively, for January, above the average 2019 levels, whereas for March they decreased to 1.2% and 0.7%, respectively, reflecting the decrease in oil prices and services sector. The overall effects of the economic lockdowns and the resulting disruptions in supply and demand on the inflation are still uncertain and could vary across countries. In fact, weaker economic outlook might affect investors in lowering their expectations about inflation and subsequently this might further push down expected returns. Based on European Commission forecasts, inflation for 2020 is expected to be 0.2% for the EA and 0.6% for the EU, whereas for 2021 inflation for the EA is expected to be 1.1% and 1.3% for the EU.

Figure 1.1: Real GDP growth, by country (2007Q1=100)

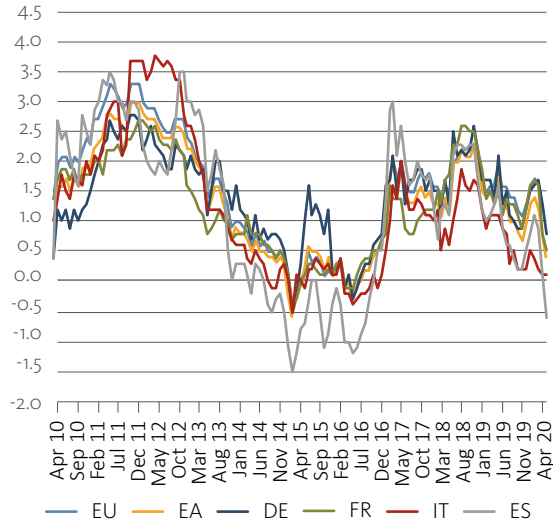


Source: ECB, Eurostat and EIOPA calculations. Last observation: March 2020. Note: EU and EA time series refer to fixed composition, with EU referring to EU 27.

1 The “low for long” scenario is defined as a situation where short and long-term nominal interest rates are expected to remain low over the next decade, combined with a period of low economic growth. The rationale behind this scenario is that structural factors, such as demographic trends, total factor productivity or an increased preference for scarce safe assets, along with cyclical factors, have pushed interest rates down to low levels. See Macroprudential policy issues arising from low interest rates and structural changes in the EU financial system, ESRB, November 2016 for more details.

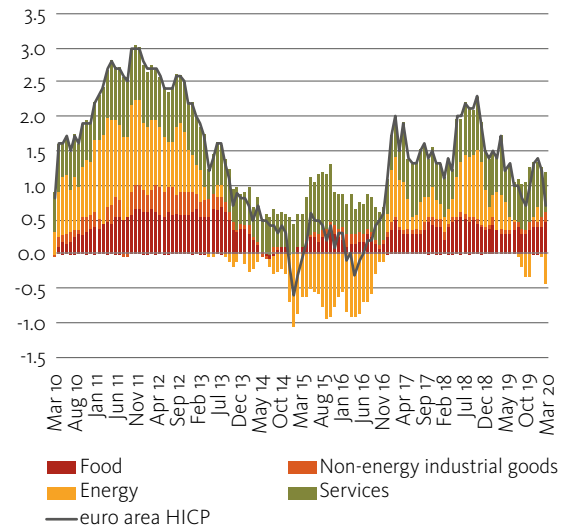
2 European Commission, European Economic Forecast, Spring 2020.

Figure 1.2: Inflation rate, by country (in %)



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

Figure 1.3: HICP main components (in %)



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

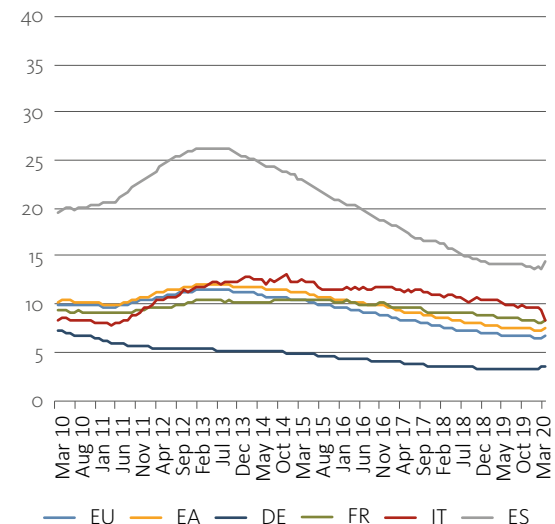
The labour market in the Euro area appeared to be solid, with a further decrease in the unemployment rate taking place in the EA and the EU during 2019, supporting the GDP growth during 2019. Despite the trend is uniform across the European area, the unemployment levels remain heterogeneous across countries (Figure 1.4).

Labour market is expected to be significantly affected by the disruptions caused during the Covid-19 related confinement period, as unemployment filings were skyrocketing worldwide. Forecasts from European Commission indicate the EU unemployment rate at the level of 9% for 2020 and 9.6% for the EA, decreasing to 7.9% and 8.6% for 2021, respectively.

Fixed income markets have shown a flight-to-quality behaviour during the virus outbreak. The 10-year Government bond yields for countries with higher credit ratings have decreased significantly during the initial period of the virus outbreak, whereas for countries with lower credit ratings have increased (Figure 1.5 and Table 1.1). The aforementioned market behaviour was also reflected in the sovereign CDS spreads (Figure 1.6). Similarly, regarding corporate bonds, the increase in the yields of triple-B rated bonds was higher compared to triple-A rated bonds (Figure 1.7). Despite the significant volatility observed across all countries, the signals of flight-to-quality were

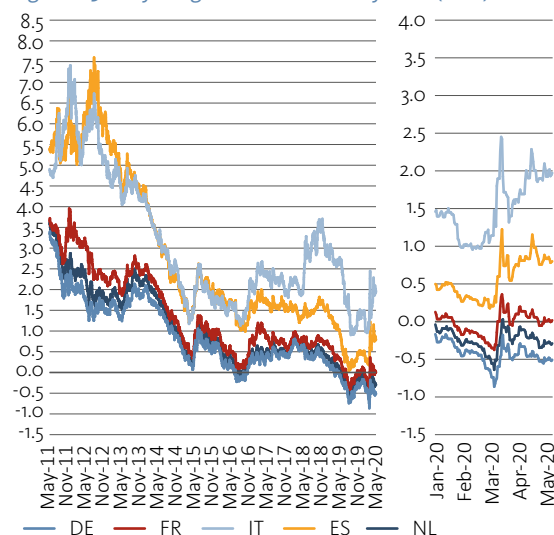
still evident after the first half of April when the first actions or plans for reopening the economies have been initiated and a relative long time has passed since the enormous support programs of ECB and governments have been announced.

Figure 1.4: Unemployment rate, by country (in %)



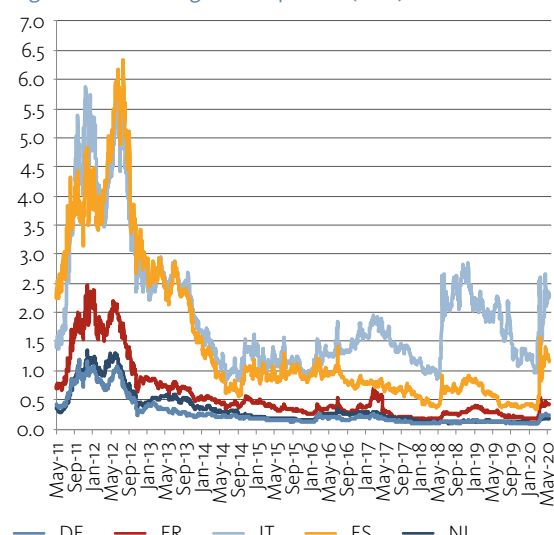
Source: Eurostat. Last observation: March 2020. Note: EU and EA time series refer to 27 countries (from 2020) and 19 countries (from 2015).

Figure 1.5: 10-year government bond yields (in %)



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

Figure 1.6: Sovereign CDS spreads (in %)



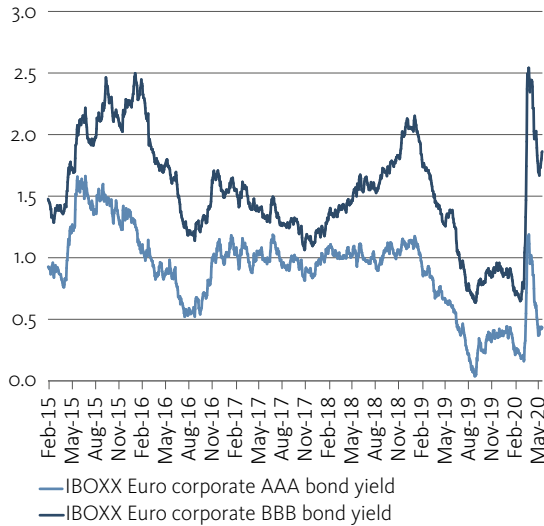
Source: Refinitiv. Last observation: 15/05/2020.

Table 1.1: Government bond yields, by maturity (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

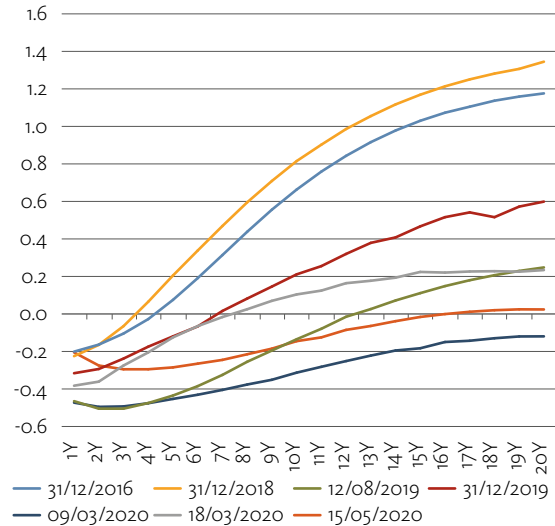
Source: Refinitiv. Last observation: 15/05/2020.

Figure 1.7: Corporate bond yields (in %)



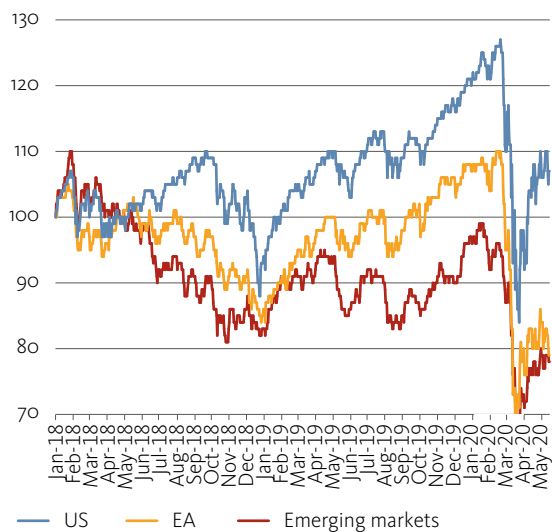
Source: Refinitiv. Last observation: 15/05/2020.

Figure 1.8: EUR swaps (in %)



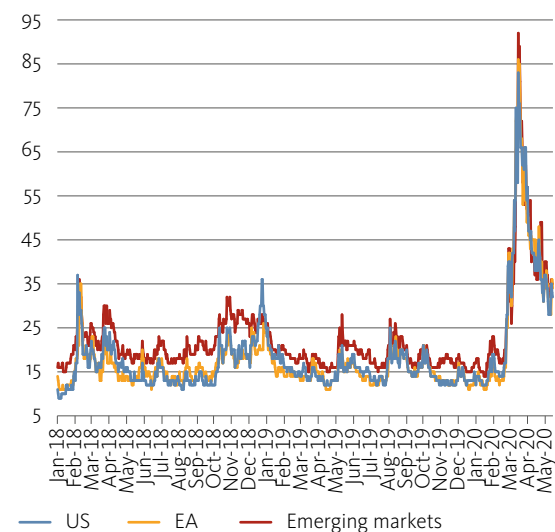
Source: Refinitiv. Last observation: 15/05/2020.

Figure 1.9: Market developments (01/01/2018=100)



Source: Refinitiv and EIOPA calculations. Last observation: 15/05/2020.
Note: S&P 500, Euro Stoxx 50 and MSCI emerging market indices for US, EA and emerging markets respectively.

Figure 1.10: Market volatilities



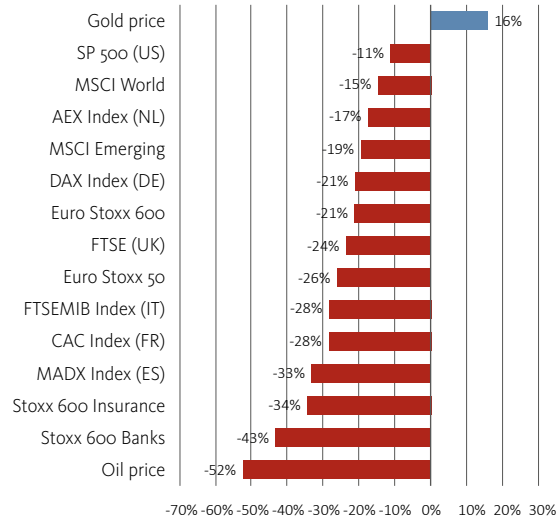
Source: Refinitiv. Last observation: 15/05/2020.
Note: CBOE Volatility, VSTOXX and CBOE EM ETF Volatility indices are used for US, EA and emerging markets respectively.

Significant movement of the interest rate swap curve (Figure 1.8) accompanied the volatility observed in the fixed income market. At the beginning of March 2020, the swap curve was negative across all tenors and flattened. However, since then, the swap curve was shifted up almost in a parallel manner, resulting in levels near the negative territory for the longer end of the curve, considerably lower compared to the levels of August 2019.

Following the sharp market correction in December 2018, equity markets in the US and the EA have recovered dur-

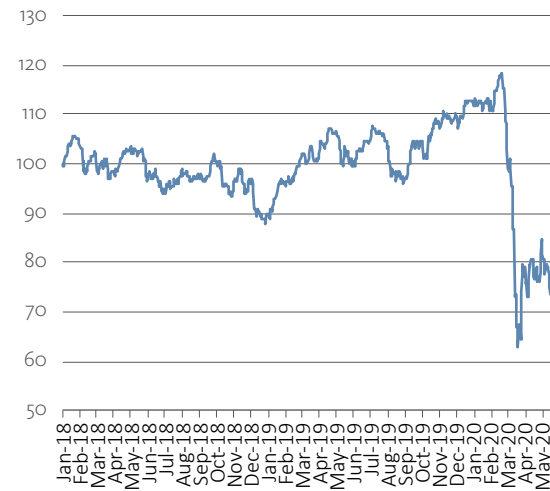
ing 2019, but suffered huge losses during the pandemic outbreak. European equity market abruptly decreased amid skyrocketing volatility (Figure 1.9). The downfall was to some extent compensated by the launch of the support packages and measures announced by governments and central banks. However, equity markets have rebounded since then, with US reaching levels comparable to the first semester of 2019. Volatility significantly decreased since March 2020, but remained higher compared to 2019 (Figure 1.10).

Figure 1.11: Selected markets performance (year-to-date)



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

Figure 1.12: Stoxx 600 Insurance (01/01/2018=100)



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

Amid the ultra-low interest rates and the challenging macroeconomic environment formed during the pandemic outbreak, insurers' share prices fell sharply, in line with the general performance of the markets (Figure 1.11). Despite the overall challenges that insurers undergo within such an environment, their equity prices have subsequently recovered, although some oscillation can also be observed (Figure 1.12).

The weak global economic outlook accompanied by the uncertainty regarding the fade out of the pandemic and

the risk of a second wave at the end of 2020, increased the tail risk for insurers. The challenging prospects of the economy and the environment of prolonged ultra-low interest rates urge insurers to review their asset allocation, profitability and business plans as well as their solvency positions. Business model considerations might also take place in the light of the prolonged period of low interest rates accompanied by consumers whose financial positions are further challenged amid the uncertainties in labour market.

2. INVESTMENT BEHAVIOUR IN THE LOW YIELD ENVIRONMENT

Amid an already sustained period of low yield environment, the unexpected Covid-19 virus outbreak and the economic disruptions that followed have further increased the risk of ultra-low yields for longer. The low yield environment challenges insurers both in their balance sheet positions and in terms of their profitability. Adapting their investment behaviour might be a response to mitigate the overall negative effects of the low yield environment. However, financial markets' volatility in relation to the poor macroeconomic prospects due to the economic shutdowns during the virus outbreak, might substantially complicate insurers' response and how it will feed back to their risk profile.

In this chapter, the investment position of insurers is discussed from the perspective of inferring signals of a changing investment behaviour and how these changes could amplify risks for insurers amid the Covid-19 impact on markets. In the first section, the investment split of insurers from 2016 until the fourth quarter of 2019 is presented. In the second, the investment split dynamics from the perspective of potential search for higher returns are investigated, covering bonds, equities as well as other assets classes. This section is concluded by a discussion on how the search for higher returns could be riskier than expected during and following the Covid-19 outbreak. The third section elaborates on the assets-liabilities matching perspective and how that strategy relates to additional risks during and after the virus outbreak.³

In general, low interest rates affect both sides of the balance sheet of insurers. The overall effect depends on the particular characteristics of the insurance companies. However, because the valuation of the liabilities is performed using the EIOPA risk free rate curve, a downward

shift in the rates used to derive the risk free rate curve would result in lower discounting rates and therefore in an increase in the value of liabilities. On the other hand, within the low yield environment before Covid-19 shock, the market value of assets increased, due to increasing values of fixed-income portfolios as well as an upward move of equity markets driven by low yields. Life insurers typically hold portfolios with negative duration gap, with fixed income investments dominating, and therefore a downward shift in the risk free rate curve would result in a higher increase in the liability side relative to the asset side. Crucially, Covid-19 shock has further complicated the effect on insurers balance sheet, amid the flight to quality behaviour observed in the markets and the increased volatility. It is worth mentioning that however, Solvency II tools could partially mitigate the impact on insurers' positions, for example via volatility adjustment and symmetric adjustment for equity risk.

Persistent low yields could further amplify the pressure on the balance sheets of insurers. Liabilities with long durations are valued based on the ultimate forward rate curve, which is higher than the market yield curve that is used for the valuation of risk free assets. This means that if time passes, the value of these liabilities increase more than the risk free assets, hence insurers might not be able to make up for this difference by enough capital generation.⁴ A protracted low yield environment might also decrease the probability for a policyholder to surrender or lapse the contract and could exacerbate the increase in the value of liabilities, weakening the overall effect for insurers. Moreover, after the virus outbreak, households can change their behaviour which could bring further uncertainty on insurers' business: increased unemployment could lead some households to surrender their contracts, whereas other could prefer to keep their savings on more liquid savings products or on their bank accounts. Finally, maturing fixed-income securities can only be replaced with lower yielding securities, which further weaken the

³ In the majority of the graphs in the second and third section, a stable sample of undertakings is used in the analysis, where only companies with full reporting history are considered (16 quarters from Q1 2016 to Q4 2019). Further asset-by-asset data cleansing is applied. Outliers (asset for a specific undertaking) are excluded from the entire sample. Regarding bonds, around 1200 companies are kept on quarterly basis (~80% of the entire quarterly SII sample of 1500 companies reporting and in terms of SII monetary value the coverage is ~80%). In relation to equity, around 1050 companies are kept on quarterly basis (~80% of the entire quarterly SII sample of 1350 companies reporting and in terms of SII monetary value the coverage is ~50%).

⁴ "This risk ('the UFR-drag') increases substantially in an enduring low yield environment. This issue could be alleviated by a change of the LLP in the 2020 review according to the Supervisory statement on the impact of the ultra-low/negative interest rate environment issued by EIOPA in 19th of February (see here).

solvency and profitability positions of insurers who have liabilities with interest rate guarantees.

In order to mitigate the negative overall effects, insurers could look for more matched durations between their assets and liabilities, increasing the durations of the assets (and hence potentially increasing liquidity risk). The search for assets with longer durations for a critical mass of investors in the market could potentially put further downward pressure on the yields for these durations. Alternatively, insurers might look for assets with higher yields (so called “search for yield behaviour”), which implies risk taking. On the contrary, considering both alternatives, the impact of Covid-19 on the financial markets and on the macroeconomic environment might increase insurers’ need for liquidity and less risky tactical allocations and strategic benchmarks. The resulting trade off requires solid risk management approaches for mitigating the risk of building-up vulnerabilities both in the insurance industry and in the financial system.

2.1. INVESTMENT SPLIT AND CREDIT QUALITY DYNAMICS

Throughout the period from the first quarter of 2016 until the fourth quarter of 2019, the portfolio composition of EEA insurers remained stable in terms of its structure. In particular, fixed income assets were shown to dominate the investment portfolios, followed by equities (both listed and unlisted). Mortgages and loans, cash and deposits and property investments are shown to have a lower share in the investment portfolio (Figure 2.1). Depending on the type of the business (life and non-life), variations in the assets allocations can be observed. Life insurance undertakings hold a higher proportion of fixed income assets, driven by higher share of government bonds holdings compared to the non-life undertakings, and a higher share of mortgages and loans and listed equities (Figure 2.2). On the other hand, non-life insurers hold higher proportions of corporate bonds, unlisted equities as well as

cash and deposits (Figure 2.3). The case of composite insurers tilts either on the side of life or non-life business, depending on the particular asset class, although their holdings of bonds was shown to have a higher share in their portfolio than in life companies (Figure 2.4). Reinsurers hold predominantly unlisted equities and cash and deposits, followed by government and corporate bonds (Figure 2.5).⁵

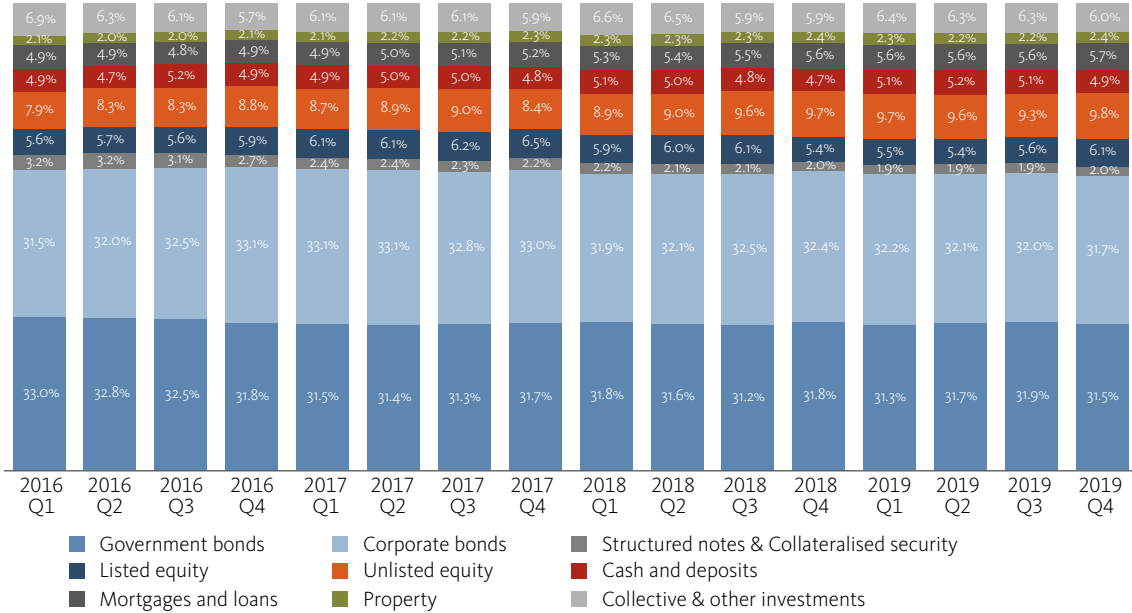
Despite a similar structure of investment portfolios across years, some dynamics can be observed within the asset classes. Reviewing the portfolio composition at the level of the EEA insurance market, the share of the corporate and government bonds show a slight overall decrease. In fact, despite the share of corporate bonds is shown to be higher than for government bonds since 2016 Q3, its share converged to the levels of government bonds since then. An overall decrease can also be observed for the rest of the fixed income portfolio, namely the structured notes and collateralised securities. On the contrary, an overall increasing trend can be observed for both unlisted equities and mortgages and loans. The significance of cash and deposits within the market asset portfolio was increased during 2019, with the highest change since 2016 Q3 (in terms of share) occurring from 2018 Q4 to 2019 Q1.

The slight decreasing trajectory of bonds portfolio (government and corporate) is mainly driven by the life insurance undertakings (Figure 2.1 – 2.5). Regarding unlisted equities, reinsurers mainly drive the overall increasing pattern shown at the EEA insurance market aggregation level.⁶ Life, non-life and composite companies supported the increasing trend of investments in mortgages and loans, only reinsurers were decreasing their relative holdings in this particular asset class. The portfolio allocation towards cash and deposits increased from 2018 Q4 to 2019 Q1 across almost all types of business, with reinsurers decreasing their exposure marginally. Finally, structured notes and collateralised debt followed a decreasing trajectory across all type of insurers, with only reinsurers retaining them at relatively constant (but low) levels.

⁵ The time series for reinsurers begin at 2017 Q4 due to a change in the taxonomy. The structural break shown in the figures related to the investment split from 2017 Q3 to 2017 Q4 is interpreted as related to that change.

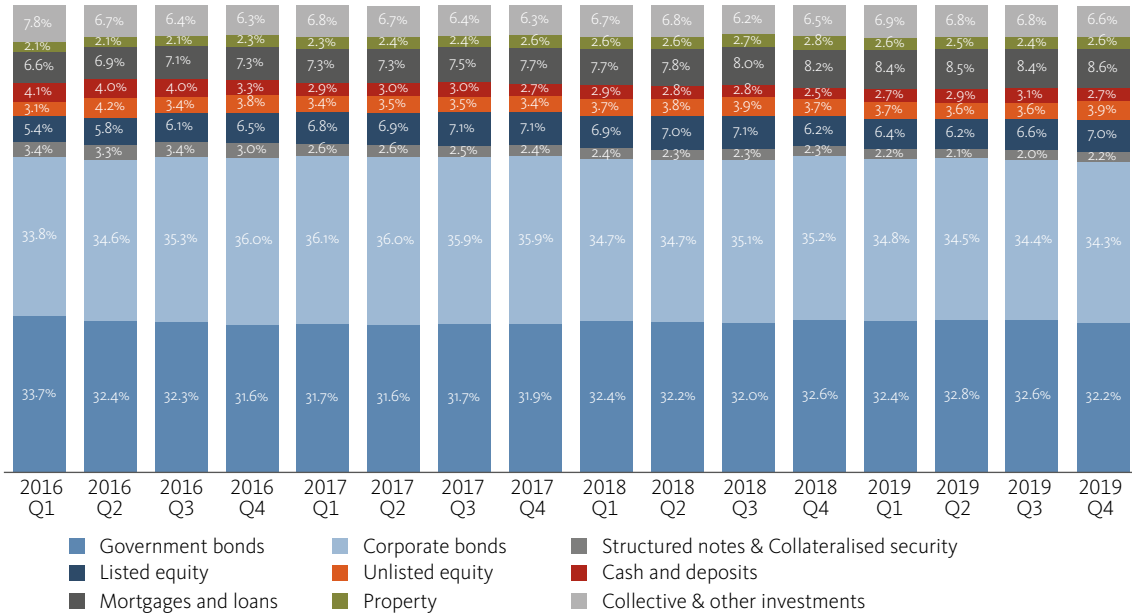
⁶ Equities include holdings in related undertakings, which account for most equities held by reinsurers.

Figure 2.1: Investment split of EEA insurance market



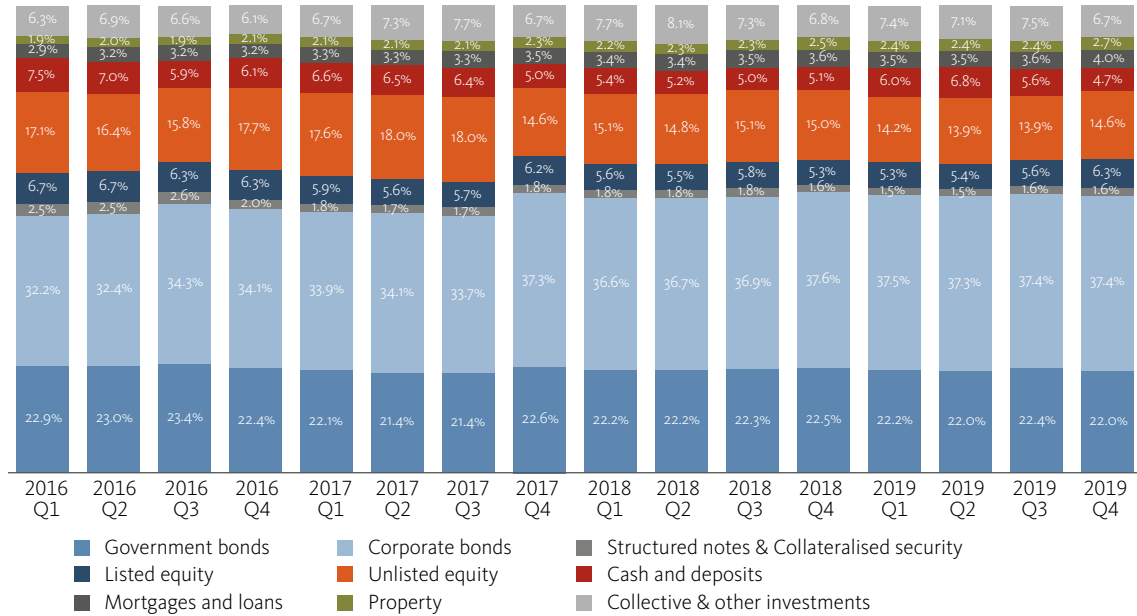
Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.
 Reference period: Q1 2016 to Q4 2019.
 Note: Look-through approach applied. Assets held for unit-linked business are excluded. Equities include holdings in related undertakings.

Figure 2.2: Investment split of EEA life insurance undertakings



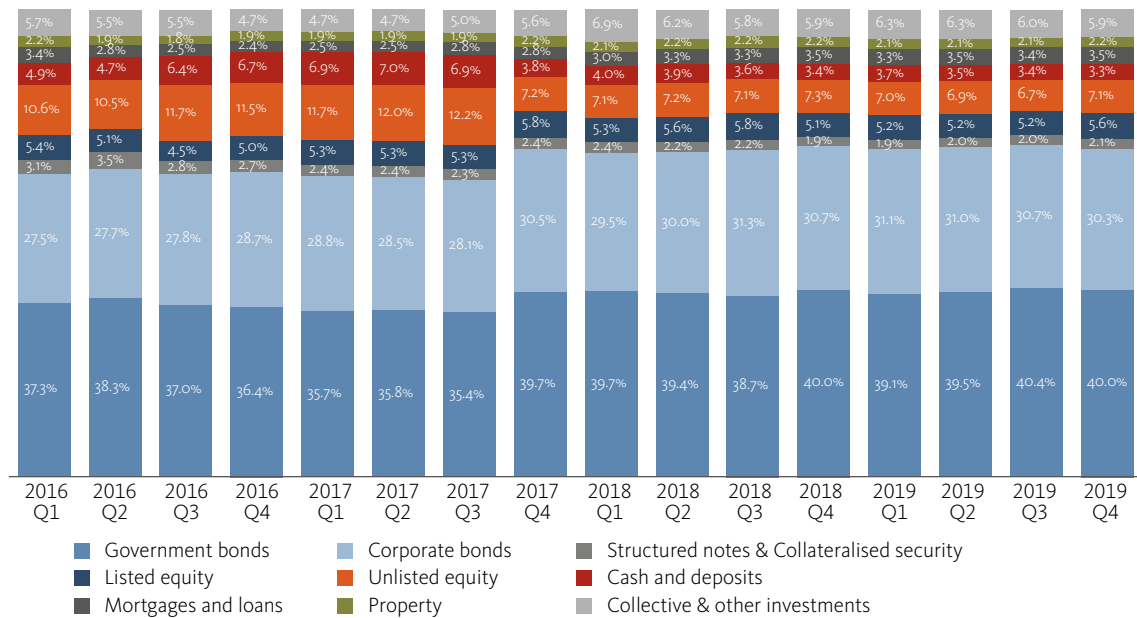
Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.
 Reference period: Q1 2016 to Q4 2019.
 Note: Look-through approach applied. Assets held for unit-linked business are excluded. Equities include holdings in related undertakings.

Figure 2.3: Investment split of EEA non-life insurance undertakings



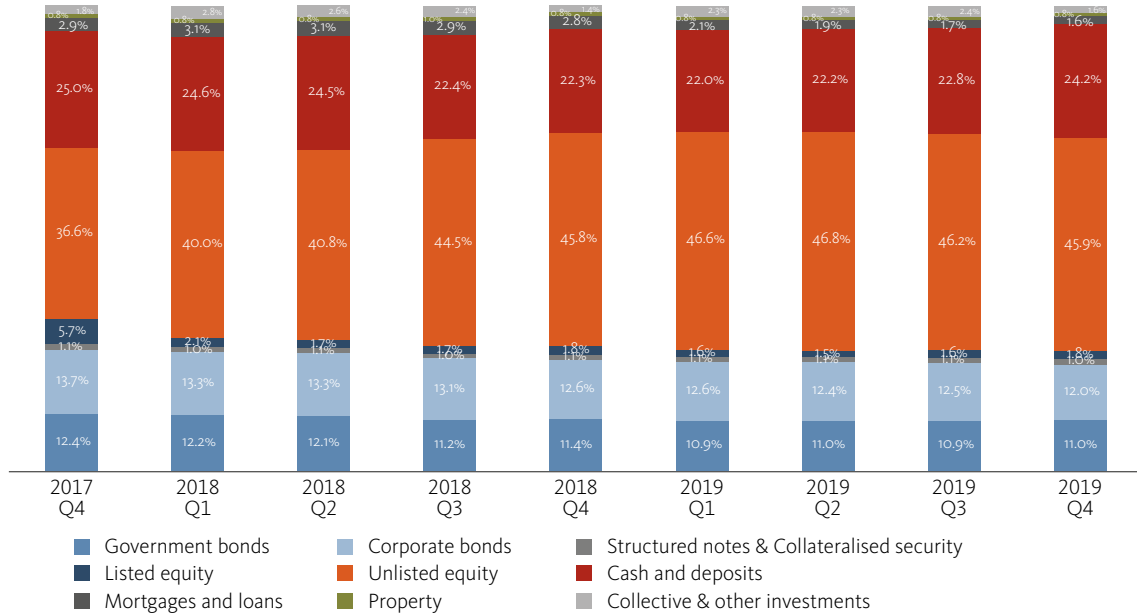
Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.
 Reference period: Q1 2016 to Q4 2019.
 Note: Look-through approach applied. Assets held for unit-linked business are excluded. Equities include holdings in related undertakings.

Figure 2.4: Investment split of EEA composite insurance undertakings



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.
 Reference period: Q1 2016 to Q4 2019.
 Note: Look-through approach applied. Assets held for unit-linked business are excluded. Equities include holdings in related undertakings.

Figure 2.5: Investment split of EEA reinsurers

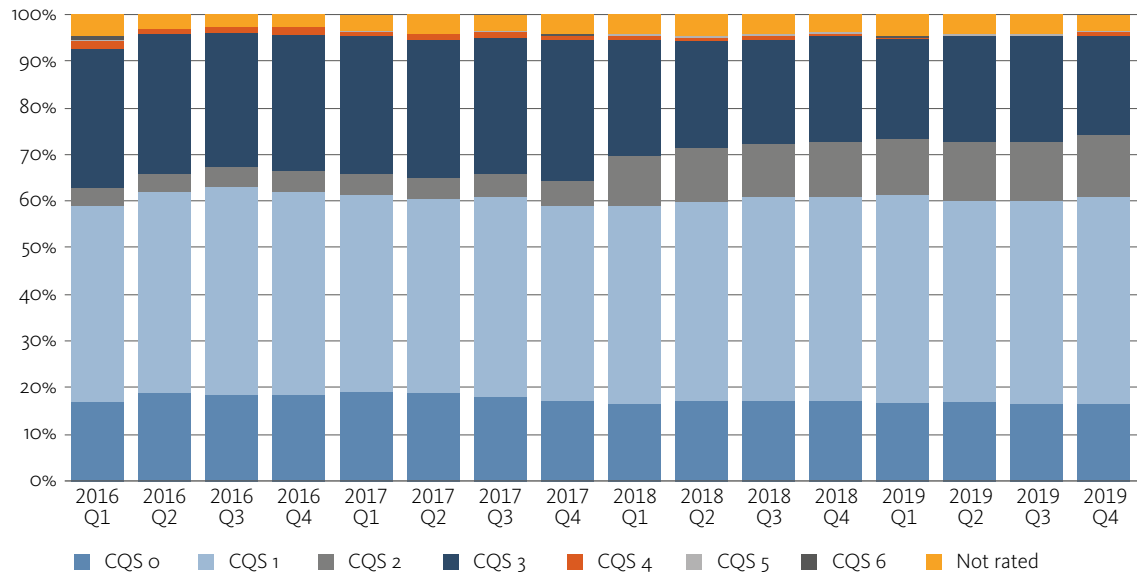


Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Reference period: Q4 2017 to Q4 2019. Note: Look-through approach applied. Assets held for unit-linked business are excluded. Equities include holdings in related undertakings. Property investment is included in Other investments.

Regarding the credit quality steps (CQS) of the insurers' investments, the share of lower rated (CQS 3 or higher) and not rated bonds decreased, with a significant change in the composition taking place between 2017 Q4 and 2018 Q1 (Figure 2.6). The share of higher rated government bonds (CQS 1 or lower) are hovering around similar levels across quarters. Between 2017 Q4 and 2018 Q1 an increase in the

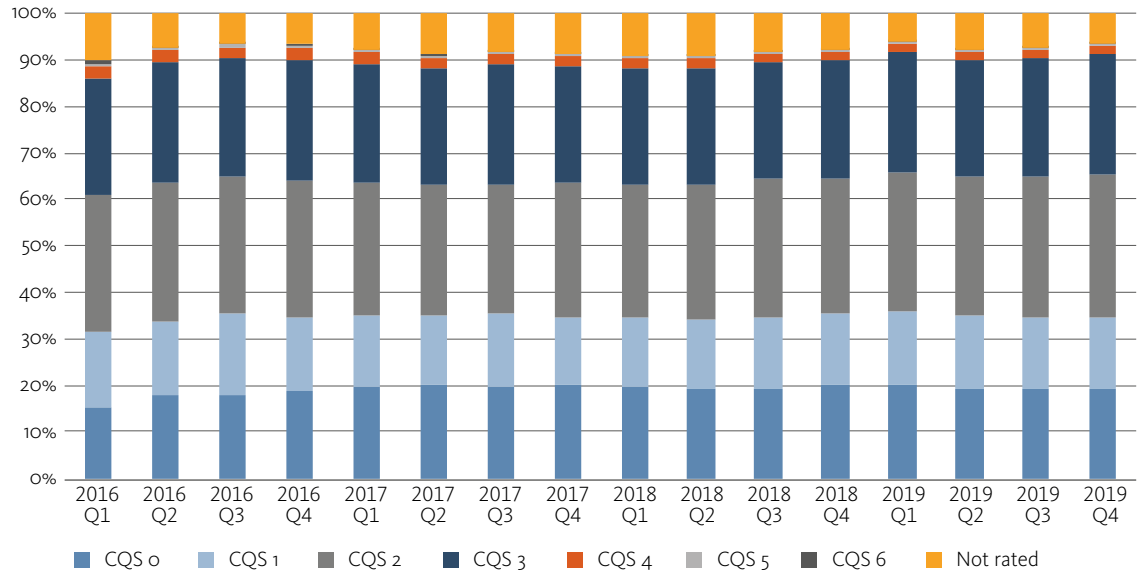
CQS 2 share is observed which is maintained throughout the subsequent quarters. The CQS composition of corporate bonds remained almost unchanged since 2016 Q2 (Figure 2.7). Finally, the average CQS across countries and across time is illustrated in Figure 2.8. However, a high level of heterogeneity in the average credit quality steps can be observed across countries.

Figure 2.6: Credit quality steps of the government bonds held by insurers



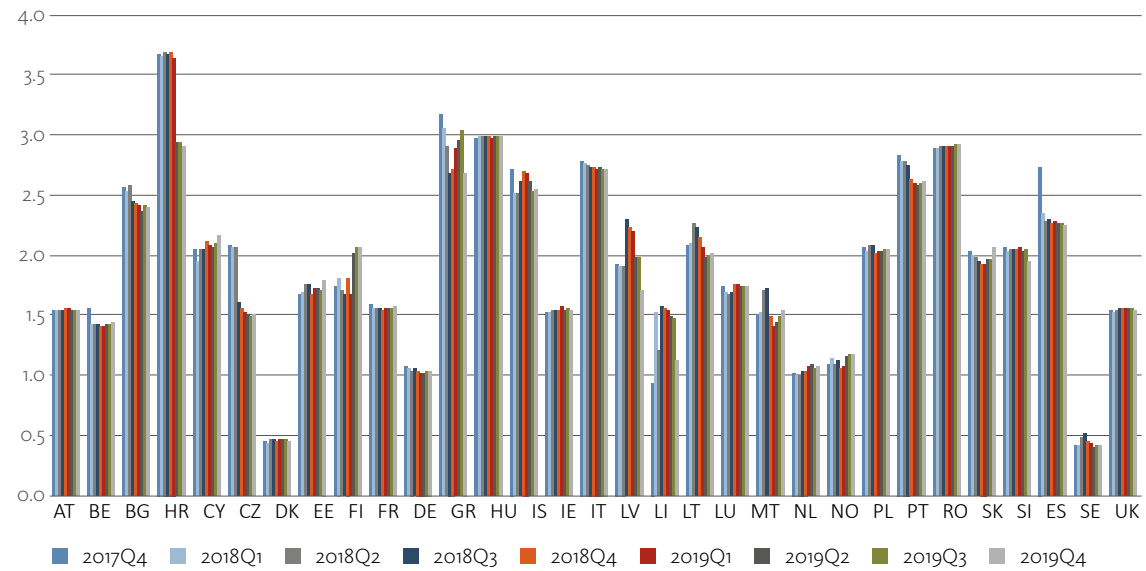
Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Reference period: Q1 2016 to Q4 2019. Note: UL assets are excluded.

Figure 2.7: Credit quality steps of the corporate bonds held by insurers



Source: SII QRTS data from EIOPA Central Repository. Quarterly prudential, Solo.
Reference period: Q1 2016 to Q4 2019.
Note: UL assets are excluded.

Figure 2.8: Average credit quality step by country



Source: SII QRTS data from EIOPA Central Repository. Quarterly prudential, Solo.
Reference period: Q4 2017 to Q4 2019.
Note: UL assets are excluded.

2.2. INVESTMENT SPLIT DYNAMICS: THE PERSPECTIVE OF RETURNS

2.2.1. BONDS AND EQUITIES

The fact that, at market level, the share of government and corporate bonds (and more general the share of fixed-income assets) has slightly decreased might be related to a gradual shift of insurers from low/negative yielding assets towards alternative investments and asset classes with potentially higher yields. This can be observed as the insurers' total investments have increased at a higher rate than the fixed income assets. In fact, total investments have increased (per quarter) on average by 1.15% while fixed income assets have increased on average by 0.91% in the last 15 quarters (last observation Q4 2019). This supports the view that the share of fixed income assets in total investments is following a decreasing trend.

In the above-mentioned context, focusing the analysis on a stable sample from 2016 Q2 to 2019 Q4, insurers contin-

ued to net purchase bonds since 2016 (Figures 2.9–2.12). These purchases might be driven by an attempt of insurers to lock in yields in the fear of even lower interest rates, or by an attempt to compensate, in terms of amounts, the relatively lower yield rates as compared to the coupon payments of the older and matured bonds, or both. Alternatively, it might be the outcome of insurers' asset liability management aiming at matching durations of their assets and liabilities.

The overall investments in equities in the EEA insurance market is slightly increasing, driven mainly by unlisted equities, which might be an indication of a tilt towards higher risk and therefore potentially higher yields. In fact, focusing on the stable sample from 2016 Q2 to 2019 Q4, the increase is supported by the positive net purchases as shown in Figure 2.13 and Figure 2.14. Compared to bonds, the percentages of net purchases of equity were higher on average. However, because the equity's share of the portfolio is lower than the bond's portfolio, this slight shift towards equity did not have a structural impact on the observed investment allocations of the EU insurers so far. Nevertheless, it creates a dynamic for increased share of equities within insurers' portfolios.

Figure 2.9: Quarterly government bonds net purchases by EEA insurers in % (to the par-amounts/quantity held)

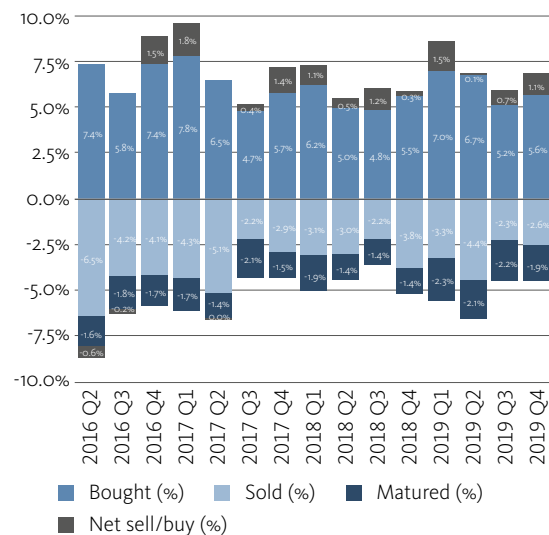
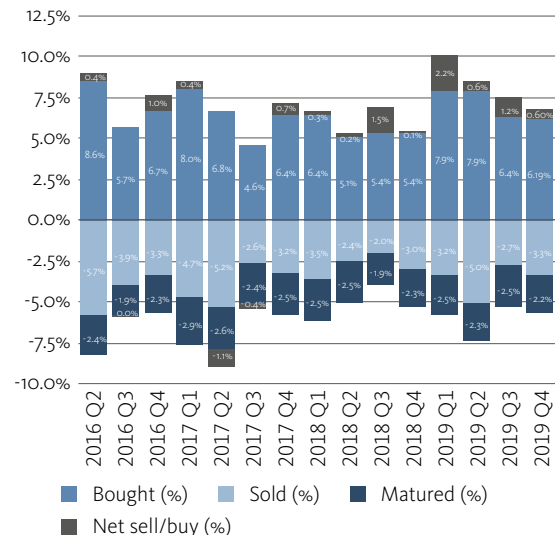


Figure 2.10: Quarterly corporate bonds net purchases by EEA insurers in % (to the par-amounts/quantity held)



Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Stable sample for the purposes of the analysis. Reference period: Q2 2016 to Q4 2019.
 Note: For bonds, net buying/selling is computed as the difference between maturing/sold and bought bonds (by looking at the "par-amount" or quantity depending on what is reported).

Figure 2.11: Quarterly government bonds net purchases by EEA insurers in euro amounts

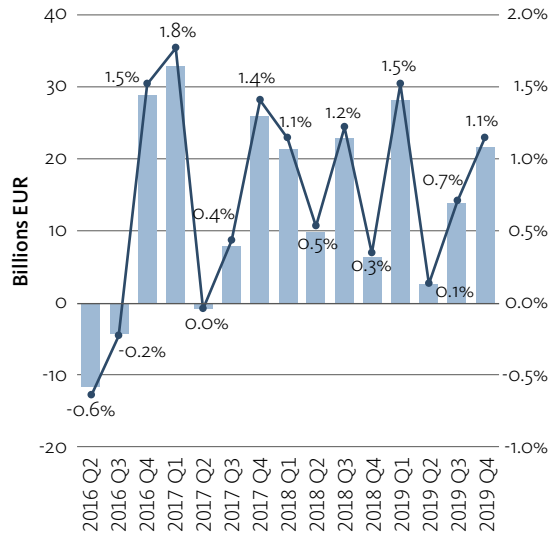
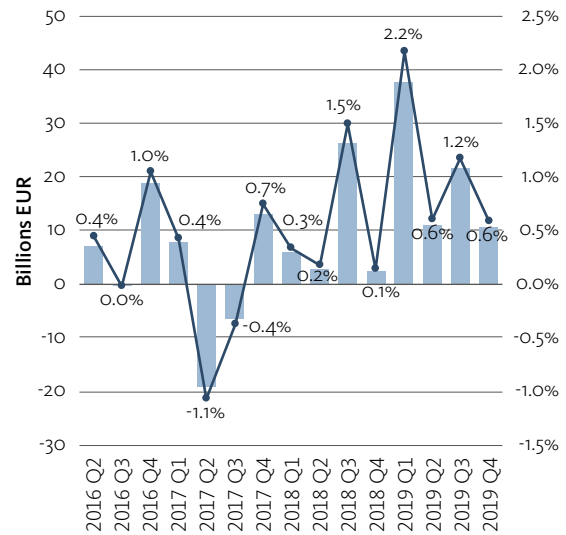


Figure 2.12: Quarterly corporate bonds net purchases by EEA insurers euro amounts



Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Stable sample for the purposes of the analysis. Reference period: Q2 2016 to Q4 2019.
 Note: For bonds, net buying/selling is computed as the difference between maturing/sold and bought bonds (by looking at the "par-amount" or quantity depending on what is reported).

Figure 2.13: Quarterly equities net purchases by EEA insurers in % (to the quantity)

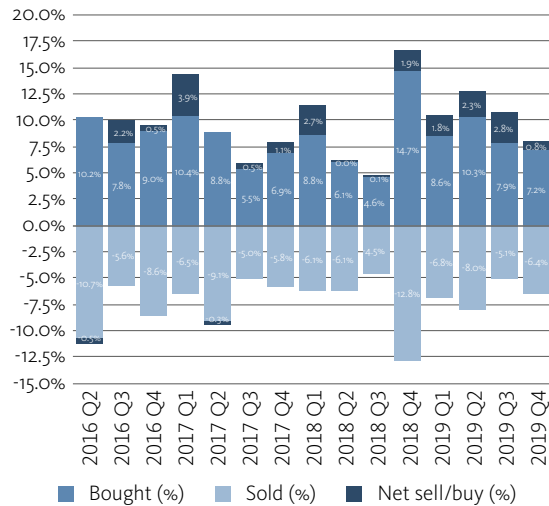
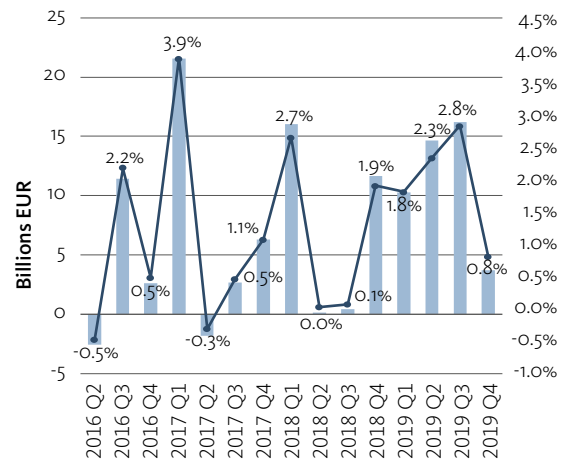


Figure 2.14: Quarterly equities net purchases by EEA insurers in euro amounts

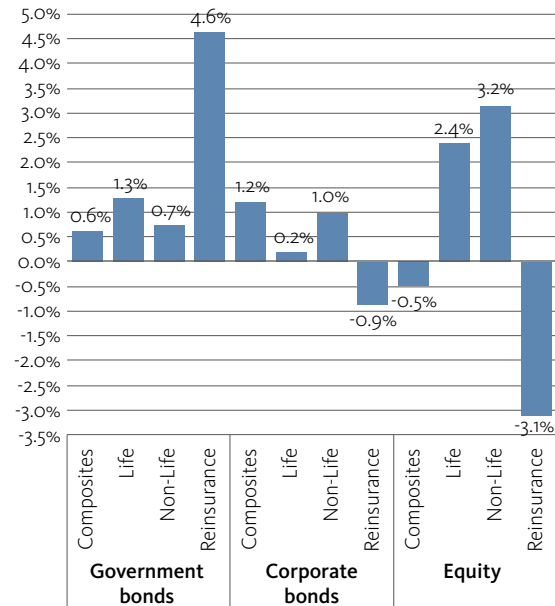


Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Stable sample for the purposes of the analysis. Reference period: Q2 2016 to Q4 2019.
 Note: For equities, the net buying/selling is computed as the difference between selling and buying (by looking at the quantity change from one period to another multiplied by the initial price of the stock).

Focusing on Q4 2019, all types of insurers are observed to net purchase government bonds, whereas all type of insurers except reinsurers drive the net purchases for corporate bonds (Figure 2.15). Finally, life and non-life insurers drive the net purchases of equities.

In fact, based on Figure 2.16, which illustrates the split between negative yielding bonds bought and positive yielding bonds bought as a percentage of total government bond portfolio, it is indicated that, for the insurers within the stable sample, despite the heterogeneity among countries, significant amounts of negative yielding bonds were purchased for many of them. Positive yielding bonds during Q4 of 2019 might be related to higher illiquidity premia (higher maturities) or higher risk premia.

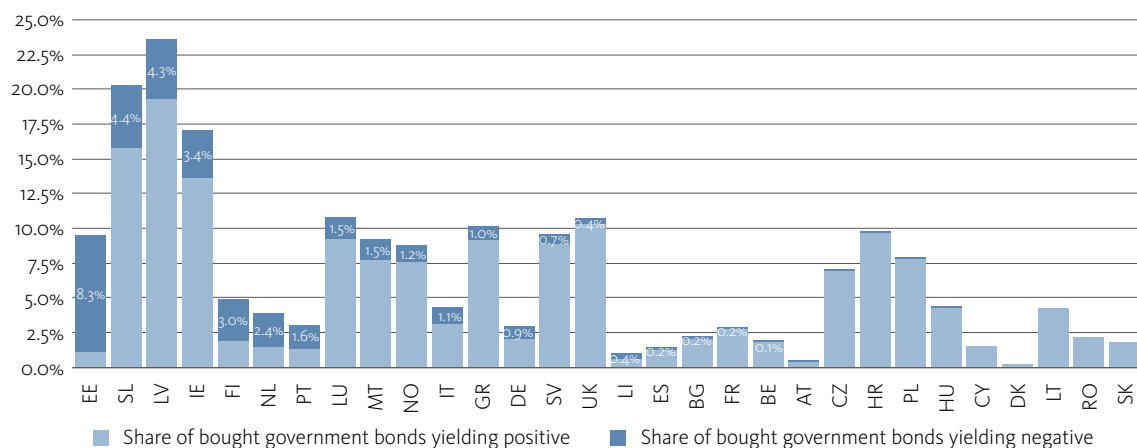
Figure 2.15: Quarterly bonds net purchases by EEA insurers by asset classes and by business types in Q4 2019 in %



Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Stable sample for the purposes of the analysis. Reference date: Q4 2019.

Note: For bonds, net buying/selling is computed as the difference between maturing/sold and bought bonds (by looking at the "par-amount" or quantity depending on what is reported). For equities, the net buying/selling is computed as the difference between selling and buying (by looking at the quantity change from one period to another multiplied by the initial price of the stock).

Figure 2.16: Negative and positive yielding government bonds bought by EEA insurers in Q4 2019 as a share of the government bonds portfolio



Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Stable sample for the purposes of the analysis. Yields on government bonds are from Bloomberg. Reference date: Q4 2019.

Note: For bonds, net buying/selling is computed as the difference between maturing/sold and bought bonds (by looking at the "par-amount" or quantity depending on what is reported).

2.2.2. OTHER ASSET CLASSES

Cash and deposits increased as a share of the total portfolio after Q4 2018. This might be related to the start of a decreasing trajectory for yields and, in particular, it might be related to an investment behaviour of holding more readily available funds either for liquidity purposes or for reshaping their portfolios (e.g. more profitable investment in the future). In addition, another explanation could be that insurers have adapted, to some extent, their asset allocation and liquidity management practices to the (new) requirements on margining practices, which have been introduced as part of the OTC derivatives reform.

The share of mortgages and loans in the portfolio across years followed an increasing trend for almost all type of insurers, with only reinsurers decreasing their relative holdings in this asset class. The shift towards this particular asset class might be driven by the expected additional returns as mortgages and loans are typically more illiquid compared to others.

Regarding real estate investments, Figure 2.17 illustrates the development as a percentage of total investments.⁷

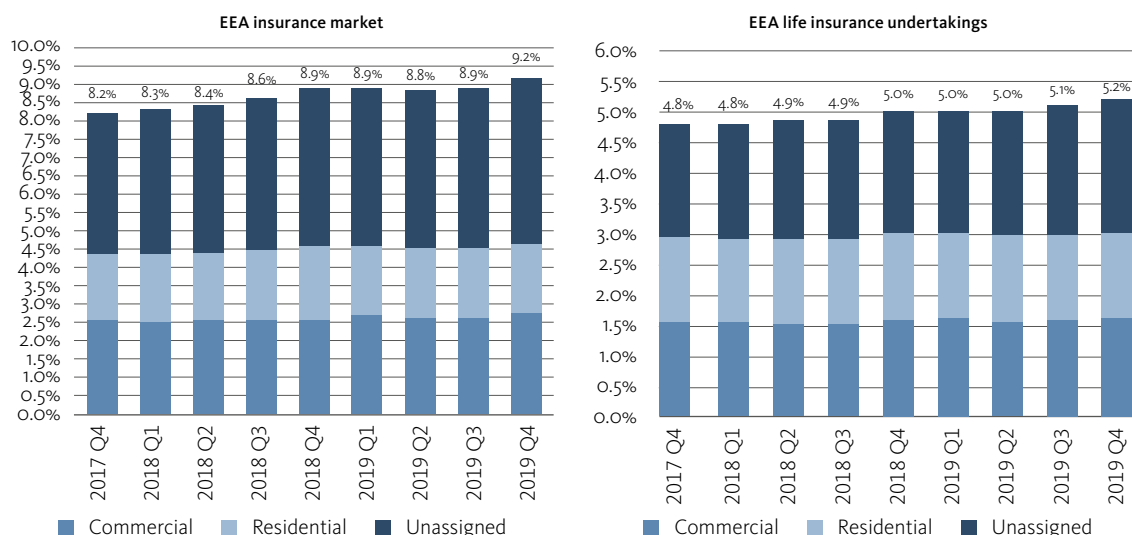
Overall, there is an indication of a slight increasing trend for the EEA insurance market. In fact, life insurers are the biggest investors in real estate and seem to drive the pattern. This behaviour could potentially indicate a slight move of investment towards alternative investments with higher yields.

Finally, the fact that both structured notes and collateralised securities decreased across years, which is the case for all businesses (except for reinsurers), might signal a reduction of exposure towards complex financial products.

2.2.3. ADDITIONAL RISKS EMERGING FROM COVID-19 SHOCK

From a portfolio's risk budgeting perspective, insurers' strategies to cope with ultra-low yield environment are expected to be related to the way that financial markets will price in the effects of the confinement measures and the risks of reopening the economies. In principle, the risk characteristics of the assets have been further amplified amid the increased uncertainty of market movements and needs to be reflected and considered appropriately in the investment strategies of insurers.

Figure 2.17: Investments in real estate as a share of total investment assets



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Reference period: Q4 2017 to Q4 2019. Note: The real estate assets held by (re)insurers are flagged according to a mapping based on CIC and NACE codes. Detailed information on the methodology can be found on the EIOPA webpage under this link.

⁷ Detailed information on the methodology can be found on the EIOPA webpage under this link.

In fact, although depending on the future financial and economic developments, the risk amplifications could potentially be related, among others, to high equity market volatility for longer, to an event of massive ratings downgrades for companies, to an increase in non-performing loans and to a fall in demand in (direct and indirect) property market. The driver for each of the aforementioned developments could be a stress on the company's and individuals' profit and income streams. In particular, in the

case of commercial property market, the shift to "work from home" status for parts of the services sector could potentially be linked to a higher probability of these working conditions being preserved after the virus outbreak, lowering the demand for that particular market. To the extent that insurers could be materially exposed to the above-mentioned risks, they would potentially need to take mitigating actions and rebalance their asset allocations accordingly.

BOX 1 – QUALITATIVE ASSESSMENT – EIOPA 'RISK ASSESSMENT - COVID-19 QUESTIONNAIRE' FOR THE INSURANCE SECTOR

The qualitative questionnaire conducted by EIOPA (see Annex 1 for the questions and full results) asked the participant NCAs to assess the materiality of concentration to domestic sovereigns of insurers during the Covid-19 shock and in the upcoming 6 months. 27% of the respondents rated the concentration to domestic sovereigns with high materiality, 30% with medium materiality and 37% considered that the impact was low. In addition, two-thirds (67%) of the responses indicate that the existing risk mitigation measures taken by the insurers were adequate. The forward-looking perspective reveals that 67% of the supervisors consider that this risk will remain unchanged and 33% believe that it will increase in the next 6 months. As many insurers are significantly exposed to fixed income assets, they are therefore sensitive to changes in 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. Some of the respondents noted that the main concern remains the low interest rate environment and that there is a risk related to the low for long scenario, given the prospects on interest rates.

When asked about the impact of Covid-19 on the external ratings and outlook (e.g. downgrades), 50% of the respondents rated this risk with medium materiality, 10% with high materiality and only 3% with very high materiality. Furthermore, 14% of the respondents consider that insurers should reinforce the existing mitigating measures while the others either find the existing measures not necessary (28%) or adequate (59%). The majority of the responses (48%) indicate that this risk will remain unchanged in the next 6 months while 41% deem that it will increase/strongly increase in following months. Some NCAs noted that they foresee an elevated risk of downgrades, especially of BBB-bonds, that would further challenge the insurers in addition to lower profitability and increasing public debt. Finally, some supervisors are closely monitoring the potential risk of downgrades and its impact on own funds and solvency ratios.

2.3. INVESTMENT SPLIT DYNAMICS: ASSET-LIABILITY MATCHING

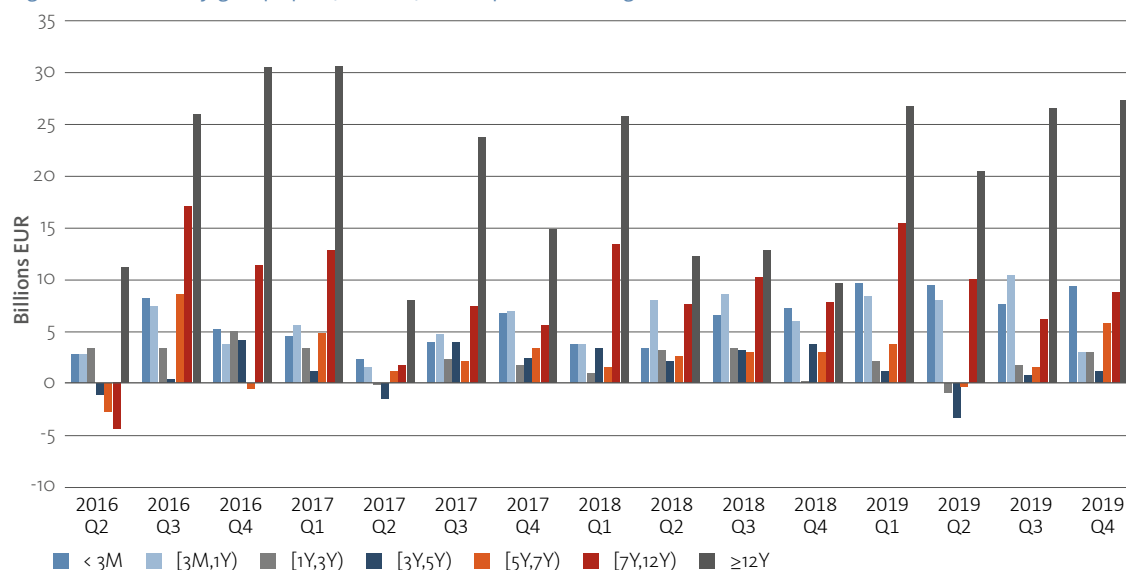
2.3.1. DURATION MATCHING

Within the context of a prolonged low yield environment, insurers might also change the composition of their bond portfolio in terms of maturities. The incentives for such a change can be mixed. For example, insurers might be motivated by higher yields because of the illiquidity premium or for more matched assets to the liability side or a combination of the two. This section focuses on potential signals for the latter (i.e. asset-liability matching),

within a stable sample.⁸ Regarding the net purchases of government bonds across the EEA insurance market, maturities greater than 12 years were dominantly bought by insurers across quarters, followed by government bonds whose maturity ranged between 7 and 12 years (Figure 2.18). Similarly, for corporate bonds, the most dominant maturity ranged between 7 and 12 years, with maturities higher than 12 years to follow (Figure 2.19).

Given that the net purchases of higher maturities are prevailing, the average maturities of assets held by insurers are increasing. This would suggest that insurers within the stable sample are trying to extend the asset's duration. In fact, following such an approach serves two purposes: earning material yields and better duration matching.

Figure 2.18: Maturity group split (bn. EUR) of net purchases of government bonds

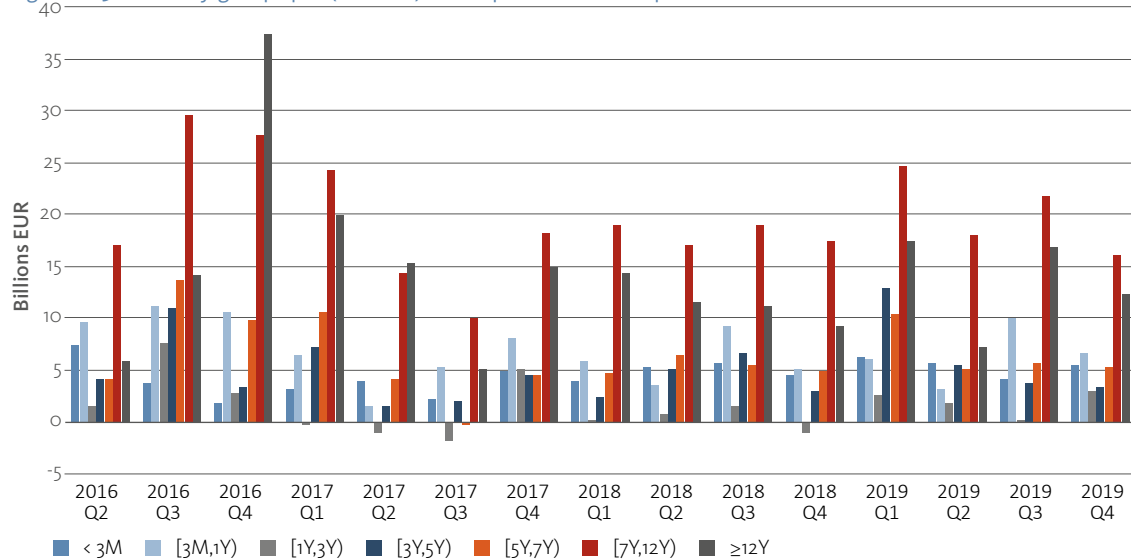


Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Stable sample for the purposes of the analysis. Reference period: Q2 2016 to Q4 2019.

Note: For bonds, net buying/selling is computed as the difference between sold and bought bonds (by looking at the "par-amount" or quantity depending on what is reported). Positive values represent net purchases, while negative values represents net selling. UL-IL are excluded.

⁸ Figure 2.16, and its potential relation to higher illiquidity premiums, motivates the consideration of asset-liability management.

Figure 2.19: Maturity group split (bn. EUR) of net purchases of corporate bonds



Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo. Stable sample for the purposes of the analysis. Reference period: Q2 2016 to Q4 2019.

Note: For bonds, net buying/selling is computed as the difference between sold and bought bonds (by looking at the “par-amount” or quantity depending on what is reported). Positive values represent net purchases, while negative values represents net selling. UL-IL are excluded.

2.3.2. ADDITIONAL RISKS EMERGING FROM COVID-19 SHOCK

Liquidity risk for insurers has been an additional source of concern, amid the economic repercussions of the virus outbreak. The risk is driven both by the uncertainty stemming from an underwriting perspective and from the markets performance, becoming relevant for insurers to consider appropriately this aspect in their investment strategies.

From an underwriting perspective, the economic downturn and confinement measures could result in lower than expected levels of premium inflows in insurers’ accounts. The risk of a contemporaneous increase in claims (e.g. event cancellation, surrenders, mortality etc.) and an increase of need for extra variation margins due to derivative hedging could also be significantly higher amid the uncertainties and the impact of the virus outbreak. In terms of markets performance, the reflection of the economic outlook and recovery on the markets remain sig-

nificantly uncertain and still to unravel, although, during the crisis the support packages provided were effective to some extent on retaining the hit.

Insurers might need to allow flexibility in their portfolios for potential synchronised increase in claim outflows and decrease in premium inflows as well as for potential portfolio rebalancing in the short/medium-term. Hence, they might need to consider how the share of assets with illiquid characteristics compares to the liquid ones. For example, for a portfolio dominant in bonds, growing portfolio’s maturity could result in higher illiquidity premium embedded in bonds’ yields, although this also depends, among others, on the credit quality or even the sector exposures of the resulting portfolio. Therefore, costs would become higher for insurers to liquidate these assets amid market turbulence. Despite market’s need for liquidity observed during March, strong liquidity preferences could also arise in the market depending on the fading out of the virus and the reflection of reopening the economies.

BOX 2 - QUALITATIVE ASSESSMENT – EIOPA ‘RISK ASSESSMENT - COVID-19 QUESTIONNAIRE’ FOR THE INSURANCE SECTOR

Based on the qualitative questionnaire (see Annex 1 for the questions and full results), when asked about the liquidity of the asset portfolio, the majority of the respondents reported a low materiality (63%), whereas 33% ranked the risk to medium materiality and only 3% as high materiality. Regarding the existing risk mitigation measures, 7% of the responses indicated that insurers should reinforce the existing measures, with the rest of the responses showing that either existing measures are adequate (73%) or no measures are necessary (20%). However, one third of the responses (27%) foresee an increase in the risk of liquidity of the asset portfolio within the next 6 months, whereas 67% responded that the risk would remain unchanged. Some of the respondents mentioned that the supervised insurance companies have sufficient liquid assets. However, liquidity issues might arise if lapse rates will increase and premiums will decrease.

Similar considerations were reported regarding the liquidity of investment funds. In particular, the majority of the respondents rated the risk as low materiality (67%), followed by the 27% of the respondents indicating medium materiality and only 3% as high materiality. In terms of risk mitigating measures, 79% responded that the existing measures undertaken by the insurers are adequate, 14% that no measures are necessary, whereas some respondents pointed that the reinforcement of existing measures/the introduction of new measures are necessary (6%). Finally, 62% of the respondents expect that the risk will remain unchanged within the next 6 months, whereas 31% of the respondents expect to be increased. In addition, most of the NCAs mentioned that they are closely monitoring liquidity risk of investment funds as further redemption pressures could occur if the macroeconomic outlook worsens.

3. ANALYSIS ON PROFITABILITY

The low interest rate environment is, in principle, expected to impact both the balance sheet (i.e. solvency) and profitability position of insurers. The implications on solvency will be discussed in the next chapter. In terms of income prospects, if market bond yields remain at very low levels for a significant period of time, this will have an impact on insurer's profitability in the medium to long-term horizon. In fact, given that insurers hold fixed income investments to a large extent, significant amounts of earned coupons and redemptions from matured bonds will be reinvested at lower rates.

The effect of the income channel is magnified in the case of life portfolios with high guarantees stemming from products sold in the past, as they require higher yields in order to meet promises made during different market (yield) conditions. Insurers have typically negative duration gaps (i.e. longer duration for liabilities than for assets) and factoring in the reinvestment at lower rates as well the effect of high guaranteed rates due to old products, considerable strain might be put on their profitability. Insurers hold assets, bought in the past, yielding high coupons which might compensate to a certain extent the overall effects of low interest in the short to medium term, but because of the negative duration gap surely not in the long term.

Understanding insurers' future profitability is key because once the expectation of a "low for long" scenario is anchored there will be immediate effects on their net worth, but also on their investment and underwriting behaviour.

This chapter discusses the effect of low interest rate environment on insurers' profitability, focusing mainly on life portfolios. A model projection capturing reinvestment risk with implications on profitability is analysed, under the assumption of a "low for long" scenario, with the focus on studying the convergence of the profitability of insurers' fixed income portfolios towards yields currently observed in the market. In addition, the extent of guaranteed rates and the yields of insurers' portfolios are discussed. Finally, this chapter presents the additional challenges caused by Covid-19 on the profitability of insurers.

Figure 3.1 shows that 5.94% (or 6.06%) of the government bonds portfolio will reach maturity in 1 year (2 years) and that in 10 years' time insurers will replace approximate-

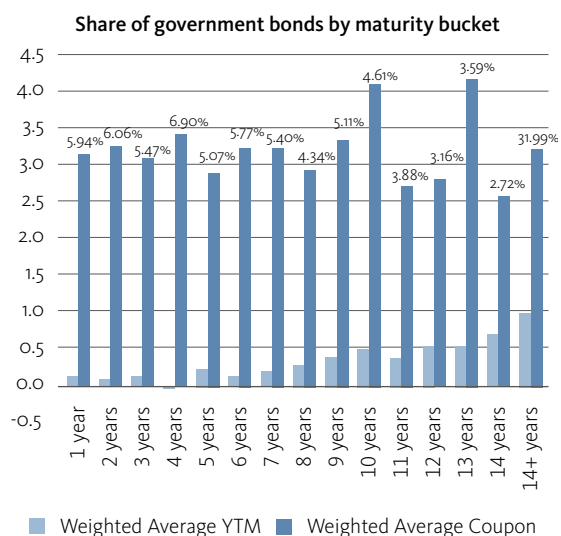
ly 60% of their government bonds portfolio. In Q4 2019, bonds held were yielding, averaging across maturities, a coupon of 3.24%. The maturing bonds will have to be replaced with new ones that will yield (YTM based on market rates) very low rates; for example, bonds with 10-year maturities will yield approximately 0.5% and bonds with 14-year maturities approximately 1%. This could be translated into the risk that investment yields fall below guarantees for insurers causing losses and ultimately decline in capital.

In the case of corporate bonds (Figure 3.2), 7.75% of these will reach maturity date in 1 year. These bonds were yielding a coupon of 2.72% and will have to be replaced with bonds, which will yield (YTM current market rates) a maximum of approximately 1.5% for the longest maturity.

Based on the information presented in Figure 3.1 and 3.2, it is possible to project insurers' future bonds portfolio cash-flows. The following are the simplifying assumptions made in order to have a tractable approach:

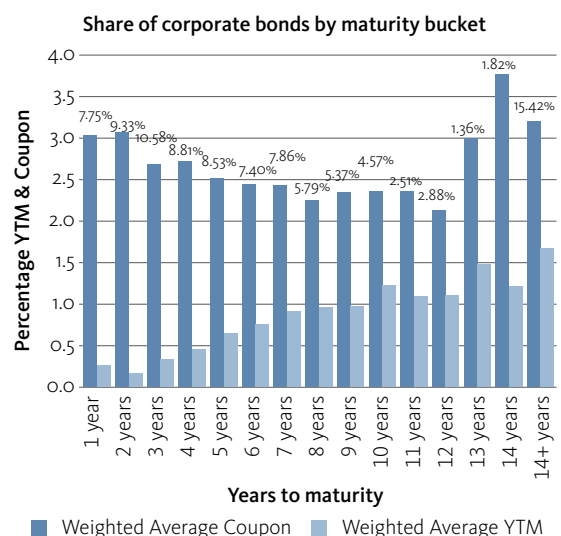
- a) The market yields will stay as in Q4-2019 for the next ten years. Additionally, other market conditions such as credit spreads are assumed unchanged.
- b) Every year the cash-flows generated (earned coupons and bond redemption amounts) by the portfolio are reinvested with maturities matching the current maturity structure. As an example, if in Q4-2019 15% of the portfolio of government bonds has the maturity above 14 years then the reinvestment will be done accordingly.
- c) Capital gains on bond positions are not realised.
- d) The generated cash-flows are not distributed as profits to shareholders.
- e) These are reinvested in the same asset class (e.g. not in equity or others).
- f) The focus is only on the financial aspect of the profitability and potential gains stemming from insurance contracts are not taken into account.
- g) Premium inflows are not considered.

Figure 3.1: Government bonds: Coupon and YTM (i.e. market yields) and share of the government bonds by maturity bucket (%)



Source: SII QRTs data Q4-2019, quarterly prudential solo, from EIOPA Central repository and CSDB
 Note: On the left-hand axis, YTM and Coupon rate of government bonds are taken from the CSDB (extract of 31 Dec 2019). Information on EU insurers' government bonds holdings by maturity are from SII QRTs data - List of assets (S.06.02) for Q4-2019. Weighted average YTM and Coupon by maturity buckets are calculated using SII amounts. On top of each bar the share of government bonds portfolio by maturity bucket is reported. Only bonds with fixed coupons are considered in the analysis therefore (also considering the merge between SII and CSDB and some data cleaning) the sample is left with approximately 80% of the total values of bonds in the SII EU sample.

Figure 3.2: Corporate bonds: Coupon and YTM (i.e. market yields) and share of corporate bonds by maturity buckets (%)



Source: SII QRTs data Q4-2019, quarterly prudential solo, from EIOPA Central repository and CSDB
 Note: On the left hand axis, YTM and Coupon rate of corporate bonds are taken from the CSDB (extract of 31 Dec 2019). Information on EU insurers' corporate bonds holdings by maturity are from SII QRTs data - List of assets (S.06.02) for Q4-2019. Weighted average YTM and Coupon by maturity buckets are calculated using SII amounts. On top of each bar the share of corporate bonds portfolio by maturity bucket is reported. Only bonds with fixed coupons are considered in the analysis therefore (also considering the merge between SII and CSDB and some data cleaning) the sample is left with approximately 80% of the total values of bonds in the SII EU sample.

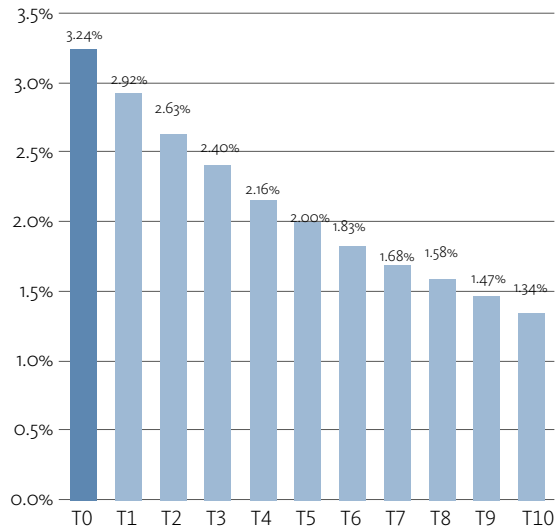
All these assumptions can be challenged and consequently there are several caveats to the results obtained. For example, the risk-free rate as well as credit spreads might fluctuate. The reinvested bonds' profile could be changed during the run-off projection, with undertakings choosing to prioritize their financial gains. Profits might be realized and dividends might be distributed, instead of reinvested. Insurers might change their asset allocation and move to other asset classes. In addition, premiums and underwriting profitability might change.

The analysis of the government bonds cash-flows based on the coupon projections (in % to the value of the government bond holdings) shows that these would drop from 3.24% in Q4-2019 (T₀) to 1.34% in 10 years' time (T₁₀) (Figure 3.3). Similarly, the analysis of the corporate bonds cash-flows projections shows that these would drop from 2.72% in Q4-2019 (T₀) to 1.45% in 10 years' time (T₁₀) (Figure 3.4). There are two noteworthy points. The first is that, in T₀ insurers' government bond portfolio cash-flows are, in percentage, greater than corporate bond ones (3.24 vs 2.72%). Corporate bond have relatively low coupons

because these tend to have good ratings; approximately 65% have CQS 2 or below. Moreover, approximately 20% of corporate bonds (especially bank bonds that in general tend to have moderately high yields) are covered bonds and therefore are characterised by low risk. The second noteworthy point is that, based on the projection, the cash-flow situation will reverse in ten years from now (T₁₀) and corporate bond portfolio will have higher cash-flows. This happens because, through time, reinvestment in corporate bonds will benefit from higher market yields in the long end of the curve. By visually inspecting Figures 3.1 and 3.2 it can be seen that the term structure, of market yields (i.e. weighted average YTM), for corporate bonds is steeper (i.e. longer maturities have higher rates than shorter) and higher in level than for government bonds.

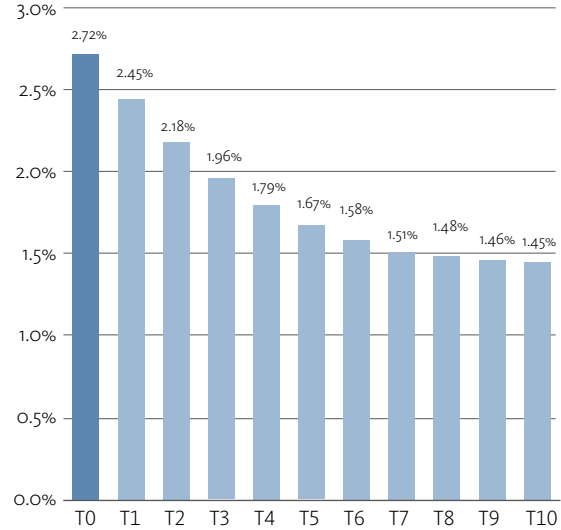
The intuition that explains the deterioration of the future cash-flows is a combination of the following two facts. First, in T₀ the cash-flow is the weighted average of the coupon based on the amount of bonds held for each maturity, while in T₁₀, around 60% of the portfolio

Figure 3.3: 10 year projection of government bond portfolio cash-flows from Q4 2019



Source: SII QRTs data, quarterly prudential solo from EIOPA Central repository and CSDB.
 Note: YTM and Coupon rate of government bonds are taken from the CSDB (extract of 31 December 2019). Information on EU insurers' government bonds holdings by maturity are from SII QRTs data - List of assets (S.o6.o2) for Q4-2019. Weighted average YTM and Coupon by maturity buckets are calculated using SII amounts. Only bonds with fixed coupons are considered in the analysis therefore (also considering the merge between SII and CSDB and some data cleaning) the sample is left with approximately 80% of the total values of bonds in the SII EU sample.

Figure 3.4: 10 year projection of corporate bond portfolio cash-flows from Q4 2019

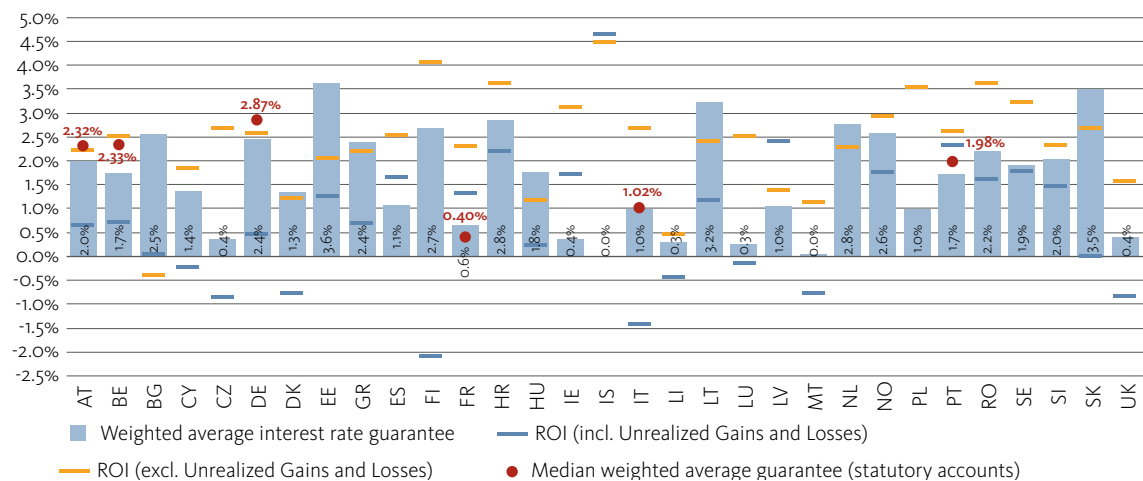


Source: SII QRTs data quarterly prudential solo from EIOPA Central repository and CSDB.
 Note: YTM and Coupon rate of corporate bonds are taken from the CSDB (extract of 31 December 2019). Information on EU insurers' corporate bonds holdings by maturity are from SII QRTs data - List of assets (S.o6.o2) Solo prudential data for Q4-2019. Weighted average YTM and Coupon by maturity buckets are calculated using SII amounts. Only bonds with fixed coupons are considered in the analysis therefore (also considering the merge between SII and CSDB and some data cleaning) the sample is left with approximately 80% of the total values of bonds in the SII EU sample.

will have been reinvested at the market yields. Second, the current market yields are lower than the coupons on bonds that insurers purchased back in time when market yields were higher.

The low yield environment makes it increasingly hard for insurers to make investment returns in excess of guaranteed returns issued in the past, which are still prevalent in many countries. Many insurers, especially in the life segment, have offered guaranteed returns on their insurance policies in the past. These investment guarantees have become comparatively high in the current low yield environment and it is increasingly difficult for insurers to cover the offered guaranteed rates in certain countries (Figure 3.5). While most insurance undertakings have slowed down offering investment guarantees on new insurance policies and have increased focus on unit-linked products, the legacy products with investment guarantees still make up for the majority of technical provisions in the EEA (approximately two-thirds of the total life best estimate in the EEA has some form of guaranteed rate).

Figure 3.5: Return on investment (both incl. and excl. unrealised gains/losses) vs. weighted average guaranteed interest rates for Q4 2018 for life insurers and composites undertakings



Source: EIOPA calculations using SII QRTs data from EIOPA Central Repository. Annual prudential data, life and composited solo undertakings. Reference year: 2018.

Note*: The weighted average guaranteed rate for life and composite insurers, at country level, is calculated using the best estimate by homogeneous risk group as weights. Only countries with a combination of material guaranteed rates and sufficient observations are shown. Weighted average guaranteed rates and returns on investments (ROI) calculations are based on Solvency II reporting (QRTs S.14.01, S.09.01 and S.06.02) and may differ from national statutory accounts. ROI is calculated both including and excluding unrealised gains and losses. Unit-linked are excluded both for what concerns the calculation of the ROI and for the calculation of average guaranteed rates (SII QRT S.14.01). For clarification, in this chart the average guaranteed rate is calculated for all the Life Best Estimate TPs not only for the Life Best Estimate TPs which have positive guaranteed rates; this means that TPs with no guaranteed rates enter the calculation, and therefore affect the weighting, with a zero guaranteed rate. This approach is adopted in order to make the guaranteed rate comparable with the ROI which is calculated on the entire life portfolio (as, basing on SII QRTs, it is not possible, in the life portfolio, to establish a link between investments and guaranteed products on an item-by-item basis).

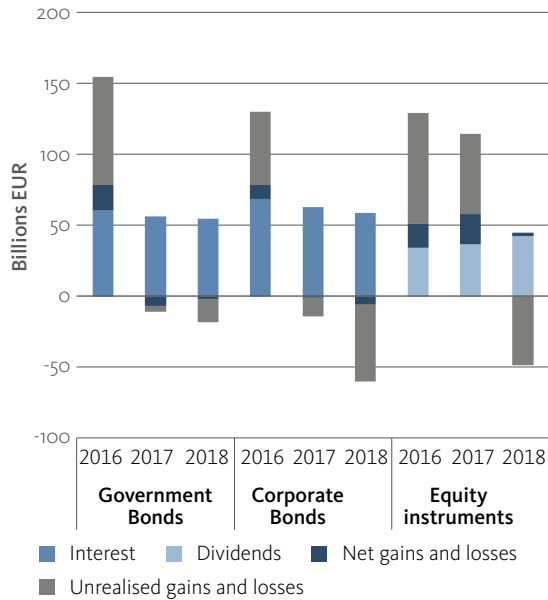
Note**: Six NCAs provided figures of individual undertakings guaranteed rates from national statutory accounts; these are reported in the red boxes. While the figures for the statutory accounts data are expressed by the median, Solvency II data are represented by the weighted average. Additionally, the differences across the two different reporting might arise from the methodology applied to compute the guaranteed rate. The national statutory reporting bases calculations on individual contracts, while Solvency II on homogenous risk groups. In some cases (e.g. Germany), guaranteed rates are reported for the current year, not as an annualised guaranteed rate over average duration of guarantee as in Solvency II reporting. Moreover, in the calculation the weights applied at company level might differ. In Germany, life insurance undertakings had to create an additional premium reserve available to cover the guarantee interest under local GAAP. Thus, the weights for DE are based on the premium reserve (according to local GAAP) that may substantially differ from the best estimate used in Solvency II. For Portugal the weights are based on mathematical provisions / financial liabilities in the statutory accounts data. Finally, there are also differences for products that have variable minimum rates of return. In summary, in some cases statutory accounts figures are deemed more relevant by the National Competent Authority.

Unrealised gains and losses can be included or excluded depending on the purpose of the analysis.⁹ If the objective is to assess whether an undertaking has, at the end of this year, sufficient cash-flows to pay out guarantees that, in turn, generate actual cash-out-flows, then the unrealised gains or losses should be excluded. Instead, if the assessment is a long-term one, to some extent (i.e. not for bonds kept to maturity) unrealised losses/gains will materialise on bonds and equities and will affect positively/negatively the ability to pay. In the case in which all guarantees will have to be paid in the far future, the only thing that can be done is to keep track of the gains and losses, which are unrealised and are building up capital that can be liquidated by the insurers in the future to pay out the guarantees.

Figure 3.6 shows that across the three asset classes net gains and losses (capital gains/losses on sold bonds and equities) tend to be comparatively small, with respect to total gains and losses (as sum of interest, realised and unrealised gains and losses) in the three years from 2016 to 2018. This confirms that insurers tend to be buy-and-hold investors. For equity, unrealised gain and losses (capital gain/losses on bond and equities which are kept on the balance sheet but are marked to market in terms of valuation) were negative in 2018 (i.e. unrealised losses), as the equity market has dropped. It is very likely that insurers will have substantial gains on equity positions in the end of 2019 as the market has performed very well.

⁹ In Solvency II QRTs, unrealised gains and losses are not calculated in relation to the acquisition values of the assets, but on the previous year-end market values (only in cases in which the asset was purchased intra reporting period gains and losses are calculated in relation to the acquisition value).

Figure 3.6: Income gains and losses per asset class (in EUR amounts)



Source: SII QRTs data from EIOPA Central Repository. Annual prudential data, Solo.
 Note: Data from SII QRT S.09.01 Income gain and losses (interest gains, net gain and losses and unrealized gains and losses), breakdown by government, corporate bonds and equities.

Two observations are noteworthy concerning government and corporate bonds. The first is that gains from interest are quite stable through time (i.e. between approximately 70 and 50 bn. EUR both for government and for corporate bonds), but are slightly declining. Insurers reinvest, continuously, earned coupons and redemption amounts from matured bonds at current market yields. Basically, as of now insurers are benefitting from “good” yielding bonds purchases back in time and it takes time for the reinvestment in a lower yield environment to deteriorate the overall interest returns (as already discussed above). The second is that unrealised gains and losses fluctuate dramatically based on how market yields on actual insurers’ bonds holdings evolve. For example, in 2016 insurers reported substantial unrealised gains as bond yields have been going down. Because yields have been going slightly up, relatively more for corporate bonds, insurers reported unrealized losses in 2017 and 2018. It is very likely that insurers will have substantial gains (which could be both unrealised or realised depending on whether assets will be liquidated) on fixed income positions in 2019 as the interest has been going down all year and is only slightly reverting in the last quarter.

In summary, even if rates go down, there tends to be instantaneous unrealised gains because of the increase in fixed income portfolio evaluations (and in some cases also

equity appreciation). If rates will remain low, in the medium and long-term insurers profitability will significantly deteriorate. Therefore, once the expectation of “low for long” is anchored there will be immediate effects. The deterioration of profitability prospects has not only an immediate negative impact on the net worth of insurers, but also an immediate impact on insurer’s investment and underwriting behaviour. For example, insurers might potentially shift investments towards more risky or illiquid investments to generate returns, or might push more for unit-linked products where the investment risk is borne directly by policyholders or reduce the level of guaranteed rates. To some extent, these tendencies are starting to be observed as discussed in other chapters of this report.

The Covid-19 shock of March 2020 has added additional pressure on insurers’ profitability as it has generated a lot of volatility in equity and credit markets and in the term structure of risk-free interest rates.

Between the end of February and mid-March 2020, stock markets dropped by approximately 35%. In April and May, stock markets performed well, but levels are still 15% below the maximum reached pre-Covid-19 shock. If the economy will not recover soon and if the financial markets will not rebound promptly, insurers will face mark-to-market losses, the materiality of the impact depending on individual exposures. In a hypothetical non-Covid-19 shock situation, in the next couple of years ahead, one possibility for life insurers, to compensate declines in cash-flows from fixed income securities would have been to realise profits by selling equity. This option is now not feasible anymore.

For what concerns fixed income securities profitability, implications depend on whether an instrument is only exposed to interest rate risk or, instead, also to credit risk. The profitability of creditworthy government bonds might be only moderately affected with respect to what is discussed in the projection exercise, because interest rate volatility is likely to be short-term. For example, the 10-year bund rate has gone down to -85 bps and then up to -25 bps in only few weeks, but it will most likely stabilise in the same range as in the last three-years. The risk-free rate was already expected to remain low for long and now, because of the expansionary measures that central banks took to sustain the economy, the expectation is even more strengthened. Differently, the market value of corporate bonds, but also of credit risky government bonds (i.e. lower rated as BBB), are negatively affected by the increase in credit spreads and potential default events. On the income side, there might be increases in future profitability in corporate bonds due to higher reinvestment returns.

BOX 3 - QUALITATIVE ASSESSMENT – EIOPA ‘RISK ASSESSMENT - COVID-19 QUESTIONNAIRE’ FOR THE INSURANCE SECTOR

Based on the qualitative questionnaire (see Annex 1 for the questions and full results), when asked to assess the materiality of the profitability risk in the current situation of Covid-19, among all the risks, profitability of investment portfolio (return on assets) has emerged as the main concern. 47% of the respondent NCAs ranked it as the risk with the highest materiality, another large share, i.e. 40%, ranked it as a risk with medium materiality. From the open questions answers, it emerges the common view that undertakings can cope with the financial market downturn in the short-term, but the concerns for long-term reduction of profitability due to the low rate environment are now strengthened. Profitability of the investment portfolio will be further put under pressure due to i) the lower for longer rate environment as well as ii) the Covid-19 related shocks on assets prices. With approximately 70% of the investment portfolio dedicated to fixed-income assets, the insurance sector is sensitive to the low rate environment. Moreover, returns generated by loans and mortgages are expected to decrease due to impairments because of the forecasted recession.¹⁰ 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 rates of return to policyholders the impact of lower profitability on investment portfolios is seen somewhat limited. Furthermore, financial markets have regained lost ground during April and May.

The insurance business is very cyclical; therefore, underwriting profitability is expected to decline, due to the recession forecasted. 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, it has emerged that new premiums are expected to decline almost across all non-life LoBs. In particular, when asked about the claims, a temporary positive effect due to claims reduction is foreseen for some non-life LoBs - motor business (79% decrease and strongly decreased), general liabilities (36%), marine, aviation and transport insurance (33 % decrease). On the other side, negative effects, in terms of claim increases for some other non-life lines of business have been reported by the NCAs 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).

From the answers to the open questions, the general opinion of NCAs is that the overall impact seems to be slightly negative, but still it is too early to make an assessment as some claims could realize later; also because there is legal uncertainty on whether insurers are liable to pay out some type of claims. For life insurance, the concern is more on premiums than claims. In particular, when asking about written premiums, 63% of the NCAs foresee a reduction (53% reduction +10% strong reduction) of premiums on index and unit-linked insurance and 60% a reduction (53% reduction + 7% strong reduction) of insurance with profit participation products. An additional element that might impair future profitability is the potential increase in lapse rate. In this context, 50% of NCAs indicated the risk of an increase in lapses and surrenders as one with medium materiality.

¹⁰ For example in Belgium, the Moratorium concluded with the insurance and banking sector, including inter alia a 6 months deferment of interest and capital repayments on mortgage loans is expected to play a mitigation role. For further details, see <https://www.nbb.be/en/articles/insurance-sector-also-working-tackle-socio-economic-impact-coronavirus-crisis>

4. ANALYSIS ON SOLVENCY

The low yield environment affects directly the solvency position of insurers typically through the balance sheet channel, but also indirectly in a longer time horizon, i.e. once the expectation of low for long is consolidated, through the income channel. As the valuation of assets and liabilities held by the European insurers are market consistent as prescribed by The Solvency II Directive, the decrease in yields leads to an increase in fixed income assets and in technical provisions evaluations. In addition, the duration of the technical provisions is typically longer than that of the fixed income assets leading to a negative duration gap, which makes the liabilities more sensitive to interest rates changes. In other words, for insurers with negative duration gap, in case of a drop in interest rates, the increase in fixed income assets does not compensate for the increase in technical provisions when considering interest rate sensitive assets alone. Life insurers are particularly more sensitive to the changes in interest rates due to their longer liabilities. On the long time horizon, if the generated income is no longer sufficient to cover guaranteed benefits and policyholders' profit participation, insurers' solvency might be at risk.

The Covid-19 shock added additional pressure on insurers' solvency ratios as the market consistent valuation of assets and liabilities are sensitive to financial market volatility, movements in bond yields and credit spreads and might be negatively affected by bonds downgrades. Key risk factors putting additional challenges due to the pandemic crisis are the negative and ultra-low interest rates that seem to remain "low for long"¹¹, potential downgrade of bonds which could determine the need of portfolios rebalancing, credit and spread risk as well as high market volatility. The changes in interest rates lead to increases in the valuations of the liabilities and an increase of their durations that might impact the solvency position of insurers. The extent to which the increases in liabilities exceeds the changes in asset values drives a reduction in solvency ratios. The positive side is that previously to the pandemic outbreak, insurance companies were well capitalised and some of them hedged and/or using derivatives to offset the effects of further decline in interest rates.

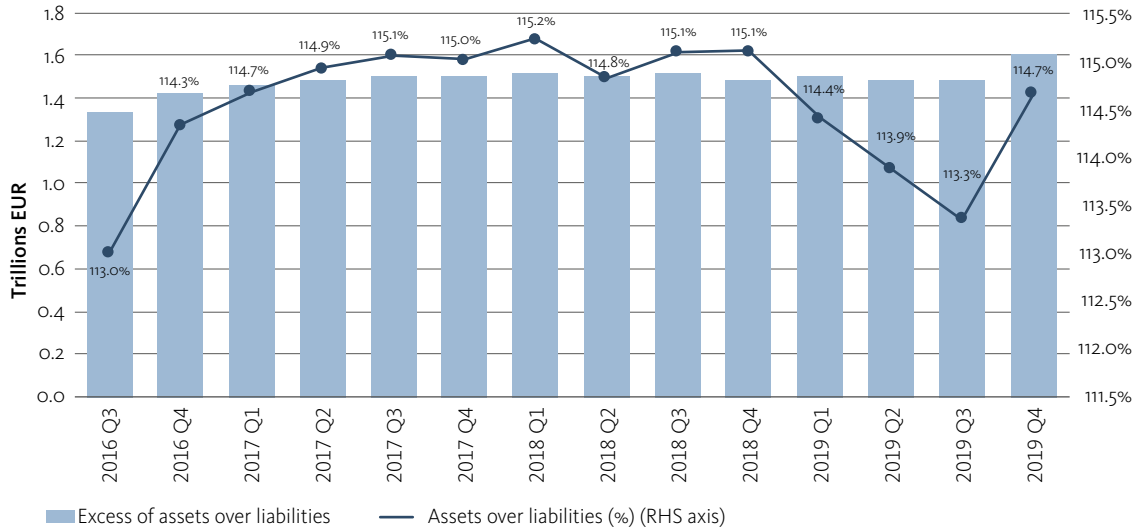
4.1. IMPACT OF INTEREST RATES ON EXCESS OF ASSETS OVER LIABILITIES AND ASSETS OVER LIABILITIES RATIOS

Analysing the evolution of the excess of assets over liabilities (eAoL) (Figure 4.1) stemming from the balance sheets of insurers gives a good indication of the changes occurred since the end of 2018 when interest rates started a downward trend. Since Q3 2018 when insurers held the highest amount of eAoL, it has slightly decreased reaching the end of 2017 level. However, in Q4 2019 the level of eAoL increased reaching the maximum level since the entry into force of the Solvency II regime. This increase in Q4 2019 was driven by a slight increase in interest rates and by the significant increase in eligible own funds in France, due to the implementation of a decree issued on December 2019, that allows integrating part of the reserves for profit sharing in the eligible own funds, as surplus funds. The assets over liabilities ratio (AoL) has deteriorated in the last quarters of 2019 in line with the decrease in yields and reached approximately the level of Q3 2016. This shows that even if the value of assets has increased, it did not compensate for the increase on the liabilities side. The increase in the risk free curve and the high equity prices at the end of 2019 assisted insurers to improve their excess of assets over liabilities in Q4 2019 when compared to previous quarters, notwithstanding the prolonged low interest rate environment. After the historical low interest rates registered in August 2019, the AoL ratio reached in Q4 2019 the level of Q1 2017.

As mentioned above, life insurers are more prone to be affected by the low yield environment. In Q3 2019, the AoL ratio of life insurers dropped below the level of Q3 2016 (Figure 4.2), but significantly increased in Q4 2019 due to the good macroeconomic conditions and to the legislative developments explained above. One could infer that the overall decrease in AoL shown above for Q3 2017 – Q3 2019 is thus driven by the life business of insurers.

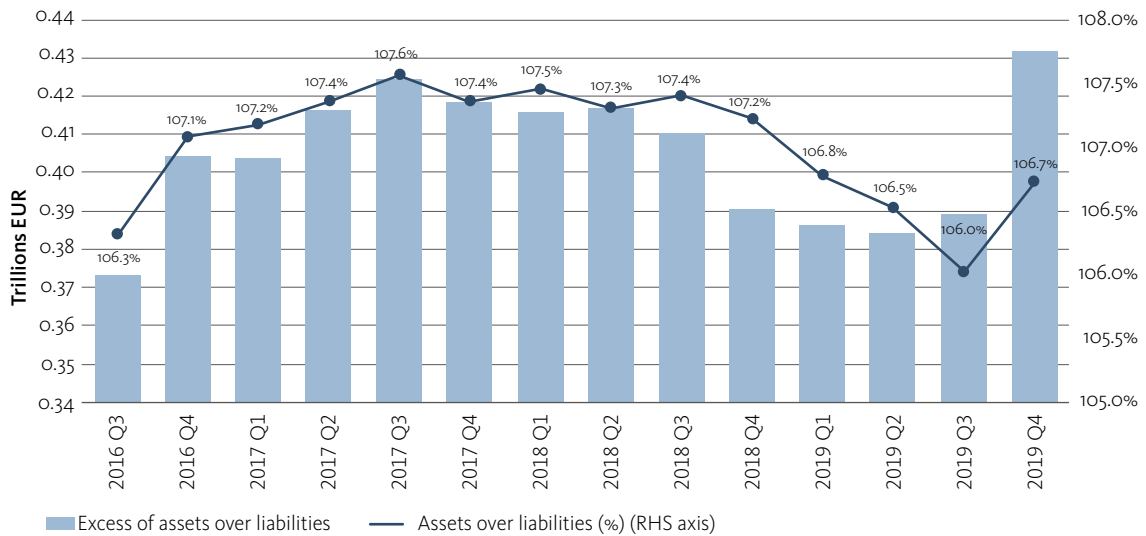
11 See Chapter 1

Figure 4.1: Evolution of Excess of assets over liabilities and Assets over liabilities ratios (%) for all types of undertakings



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo
Reference period: Q3 2016 to Q4 2019

Figure 4.2: Evolution of Excess of assets over liabilities and Assets over liabilities ratios (%) for life undertakings



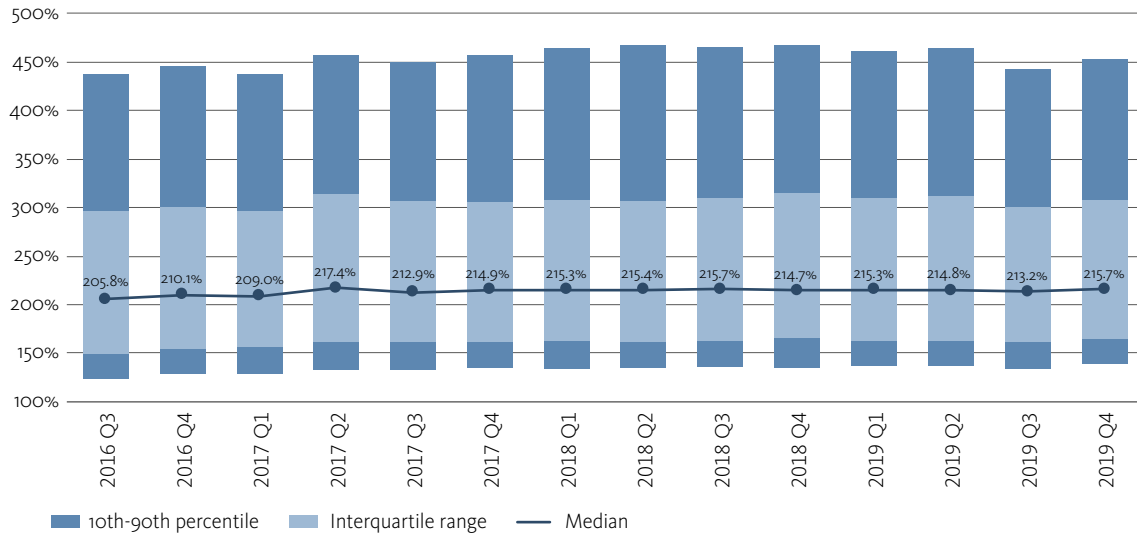
Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo
Reference period: Q3 2016 to Q4 2019

4.2. IMPACT OF INTEREST RATES ON THE SCR AND SCR RATIOS

The SCR ratios have shown signs of deterioration starting with the end of 2018 for all types of business, with the median value slightly decreasing each quarter of 2019

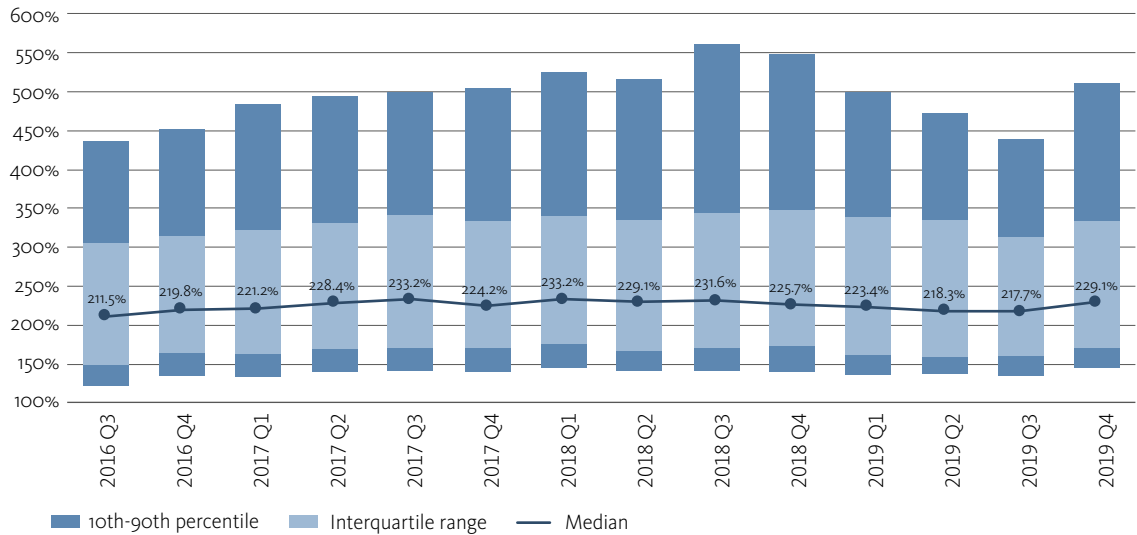
(Figure 4.3) except for Q4 2019, where the distribution of SCR ratios moved upwards, with its median value close to 215.7%. High solvency positions before the Covid-19 outbreak provide insurers certain buffers to deal with the current situation as for the next period increasing liabilities and decreasing assets are expected to negatively affect the SCR ratios of insurers.

Figure 4.3: Evolution of SCR ratio (%) for all types of undertakings



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo
 Reference period: Q3 2016 to Q4 2019. The described trend up to Q3 2019 is even more pronounced for life solo undertakings with the SCR ratio shifted downwards, in particular the median ratio declining from 233.2% in Q1 2018 to 217.7% in Q3 2019 (Figure 4.4). In this case, the drop in the SCR ratio for Q3 2019 is explained by an increase of 9.5% in the SCR and by only 2.1% increase in the EOF. In Q4 2019, life undertakings reported significantly increased SCR ratios, with the median value reaching 229.1%.

Figure 4.4: Evolution of SCR ratio (%) for life undertakings



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo
 Reference period: Q3 2016 to Q4 2019.

At market level, this development is mainly driven by the significant increase in eligible own funds in France, due to the implementation of a decree issued on December 2019, that allows integrating part of the reserves for profit sharing in the eligible own funds, as surplus funds. The significant weight of French companies in the distribution triggers the increase. Moreover, a raise in the risk free curve in Q4 2019 occasioned an improvement of SCR ra-

tios in comparison with the previous quarter for several life solo undertakings. Even though well capitalised, the heterogeneous impact of the Covid-19 outbreak across countries along with the considerable differences of SCR ratios at company level, suggest an asymmetrical capacity to absorb the negative impact among the EEA countries. For example, countries with lower SCR ratios could face stronger difficulties compared to those better capitalized.

4.3. IMPACT ON THE RISK MARGINS

The risk margin forms a distinct part of the Technical Provisions. It is designed to ensure that the value of Technical Provisions is equivalent to the amount that insurance and reinsurance undertakings would be expected to require in order to take over and meet the insurance and reinsurance obligations.

The risk margin is calculated at entity level, or separately for life and non-life insurance activities where the undertaking simultaneously pursues both, although it is often notionally displayed at a line of business level. It is calculated using a cost of capital approach, which means that it aims to estimate the cost incurred by the reference undertaking which takes over the liabilities in financing the SCR until the run-off of the insurance liabilities, due to the risk that experience turns out to be worse than is assumed in the best estimate. This approach involves projections of future capital requirements for non-hedgeable risks, the cost of which (calculated at a 6% cost of capital rate) is then discounted to the present.

Thus, changes in interest rates may impact the value of the risk margin in two ways: firstly through changes in level of future capital requirements and secondly through the impact of discounting the cost of such future capital. For these reasons, the sensitivity of the risk margin to interest rates is usually higher for insurance liabilities with long durations.

For example, we could consider an annuity provider whose Longevity SCR is a significant component of its capital requirement. In general, one would expect the Longevity BE and SCR to increase significantly for falling interest rates, due to the very long-term nature of this insurance business. This increased Longevity SCR would then be expected to push up the risk margin. Furthermore, falling interest rates would mean the cost of future capital requirements in the risk margin is less heavily discounted. Thus, both of these effects would be expected to contribute to the increase of the risk margin when interest rates fall.

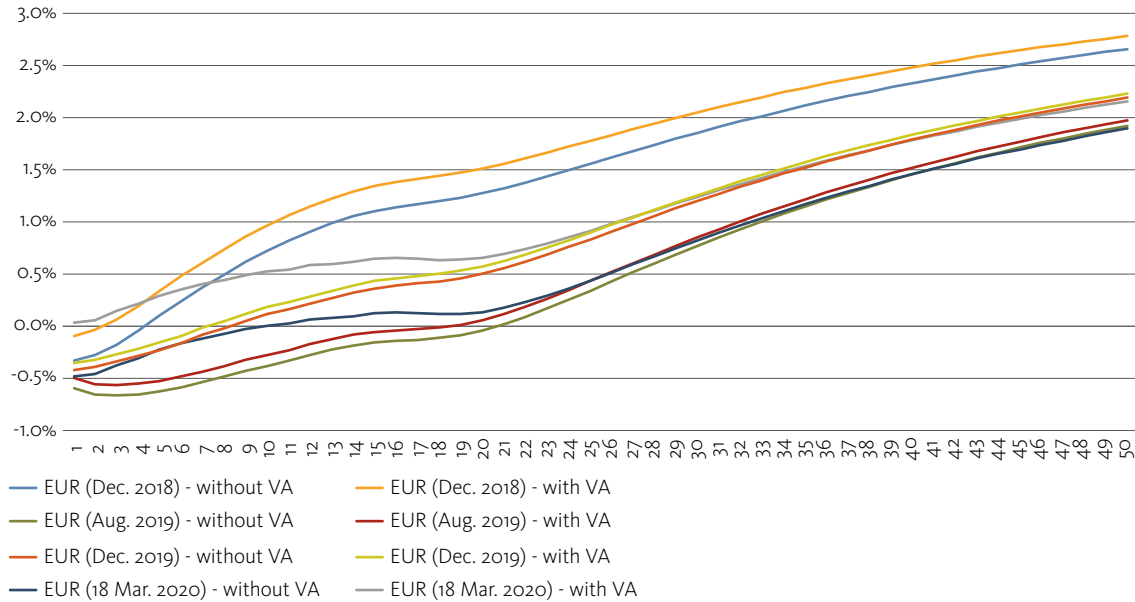
There are many other factors, which can influence the risk margin, however it appears to be generally sensitive to interest rates, particularly in the case of long term insurance liabilities. This issue has been assessed in more detail in the EIOPA report Consultation Paper on the Opinion on the 2020 review of Solvency II (EIOPA-BoS-19/465).

4.4. IMPACT OF CHANGES IN RFR CURVES ON THE TECHNICAL PROVISIONS AND ASSETS SENSITIVITY TO MARKET MOVEMENTS DUE TO COVID-19 – A METHODOLOGICAL APPROACH

The Covid-19 pandemic has caused significant losses in financial markets including large stock market slides, spread widening and swap rate tightening. A potential methodological approach that could estimate the effect of the adjustment in interest rates during the pandemic on insurers' balance sheet is to assess the impact of the changes in the RFR curves on the technical provisions. On the asset side, the decrease in equity markets, the change in yields for government and corporate bonds are considered in order to estimate the correction in investments. This methodological approach could give an indication of how sensitive is the excess of assets over liabilities to the change in interest rates and other market movements caused by the pandemic scenario. The mid-March period was chosen for illustration as the European equity market reached quickly very low levels, high volatility and increase in bond spreads with global stocks having a downturn of at least 25% during the crash, and 30% in most G20 nations. In this context, the financial market changes occurred on 18th of March were selected to exemplify the impact of the Covid-19 crisis using the proposed methodological approach.

The analysis below consists in assessing first the impact of the changes in the RFR curves on life and non-life technical provisions of EEA solo undertakings between 31 December 2019 and 18 March 2020 and secondly the market changes on the investment assets held by the insurers between the same period. As a methodological drawback, the methodology applied for the technical provisions does not capture the liability profile of companies that distribute discretionary benefits. On the asset side, the decrease in equity markets, the change in yields for government and corporate bonds are considered in order to estimate the adjustment in investments. In the second step, an approximation on the change of excess of assets over liabilities from Q4 2019 to 18th of March 2020 is estimated to give an idea of the potential impact of Covid-19 on the EEA insurance sector. All the methodological aspects are explained in the following paragraphs. As a disclaimer, the methodology assumes a set of approximations using simplifying assumptions, including the use of index data, which may not always reflect circumstanc-

Figure 4.5: RFR curves for EUR



Source: EIOPA website, RFR curves

es at individual firms. Because of this, the below must be viewed as rough estimation only.

The analysis of the change in technical provisions is focused on both life and non-life business with TP life and TP non-life values based on all currencies reported.¹² Unit-linked and index-linked provisions are excluded as well as the arbitrage between unit-linked and traditional life contracts. Any non-linear effects that may have occurred between 31 December 2019 and 18 March 2020 are not captured. In addition, the stochastic nature of lapsing is not taken into account.

The sample considered in the analysis encompasses 1698 European solo insurance undertakings and the cut-off date of the analysis was 31 December 2019. The selection of the sample was restricted to undertakings that reported the latest annual S.13.01 and S.18.01 Solvency II QRT¹³

while another reduction of the sample was performed based on the data availability and its quality.

On the liabilities side, 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. The results are based on the duration approach¹⁴ as the changes in technical provisions depend on duration of technical provisions (both life and non-life) and on the shift occurred in the underlying RFR curve. First, the impact is computed at solo level and then at aggregated level. In order to compute the change in the technical provisions mentioned above, a series of assumptions/simplifications are considered and discussed below.

The duration for the non-life TP and life TP for solo undertakings is estimated according to the cash flows reported by undertakings in December 2018 (modified duration)¹⁵. As a drawback, this might not capture the liability profile

12 The distribution of the technical provisions both life and non-life over the underlying currencies has been based on the ones for which EIOPA published RFR-curves only (ONLIST-indicator). The difference between the technical provision values based on all currencies and the ones within the ONLIST-indicator is very small; hence, the effects can be directly based on the TP values based on all currencies.

13 At the time of the drafting of this report, the latest available data for S.13.01 and S.18.01 was 31 December 2018. This template was used to compute the modified duration of the life and non-life technical provisions only. As a response to Covid-19, EIOPA decide to release some burden from the insurance companies by postponing some of the reporting deadlines (more information here)

14 First, for each insurer in the sample, the change in levels of the RFR curves (difference between Dec. 2019 and Mar. 2020) is computed for each maturity. Second, the present value of the TP is derived using a change of RFR curve corresponding to the relevant maturity and currency. For example, for an insurer that has 8.2 duration of TP, the change in RFR curves is selected for 8 and 9 year maturity for all currencies. Then, using linear interpolation for the two maturities (i.e. 8 and 9) a final change in TP is derived. The shares of each currency in the insurer's portfolio are used as weights for the present value calculation. All the assumptions considered are explained in the report.

15 See footnote 12

of companies that distribute discretionary benefits. The distribution of TPs over underlying currencies has been based on the currencies for which EIOPA publishes the RFR-curves only. The split by currencies of the non-life TP and life TP reported for December 2018 is used for Q4 2019 as a proxy under the assumption that the currencies of the TPs do not change significantly throughout the year. If a solo undertaking is authorised to use VA then the changes in the RFR curves are considered with VA, otherwise the RFR curves without VA are considered. The technical provisions held for unit-linked and index-linked business are excluded.

The weighted average modified duration of TP non-life and life of the sample was 4.95 and 13.22, respectively, for the solo undertakings based on the cash-flows reported in Q4 2018. Applying the methodology explained above, the change in RFR curves in 18 March 2020 compared to 31 December 2019 leads to an aggregated decrease of 1.41% in life technical provisions and 0.06% increase in non-life technical provisions for 18 March 2020 potentially caused by the Covid-19 pandemic as a reflection of the markets in the change in RFR curves. Figure 4.6 and Figure 4.7 show the cross-distribution of life and non-life TPs and the estimate of the changes depicted for the outbreak in one of the worst days for the markets since it occurred.

The estimated impact is different for each insurer as its direction depends on the duration and currencies of

the technical provisions (Figure 4.8 and Figure 4.9). The overall aggregated liabilities for life and non-life insurers in the sample are estimated to decrease by 1.23% (-76.3 bn. EUR). As at the initial stage of the Covid-19 outbreak a flight-to-quality behaviour was observed, hence the decrease in liabilities captured for 18th of March while the same analysis performed for April yields shows an overall increase in liabilities.

On the assets side, the analysis takes into consideration changes in almost all types of investment assets included in the balance sheet with a few exceptions (property, loans on policies, residential mortgages and other investments). The assets held for unit-linked and index-linked business are excluded from the analysis. In terms of data granularity, look-through approach is used at company level extracted from the list of assets (S.06.02 QRT reporting templates) reported in Q4 2019. For the fixed income assets, the duration is computed as the weighted duration of assets that should have had a duration reported by the solo undertakings and it applies to CIC category 1 (Government bonds), 2 (Corporate bonds), 4 (when applicable, e.g. for collective investment undertaking mainly invested in bonds), 5 (Structured notes) and 6 (Collateralised securities).

The Box 1 below summarises the changes and assumption applied to derive the impact of the market indexes on the investment assets. The source of the market data is Refinitiv (Thomson Reuters Datastream).

Figure 4.6: Cross-distribution in life TP (excluding index-linked and unit-linked) between 31 Dec. 2018 and 31 Dec. 2019 and estimate for 18 Mar. 2020 based on duration of life business of insurance companies

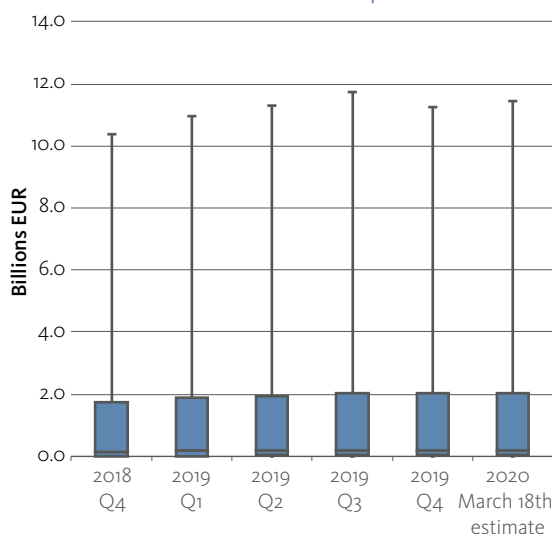
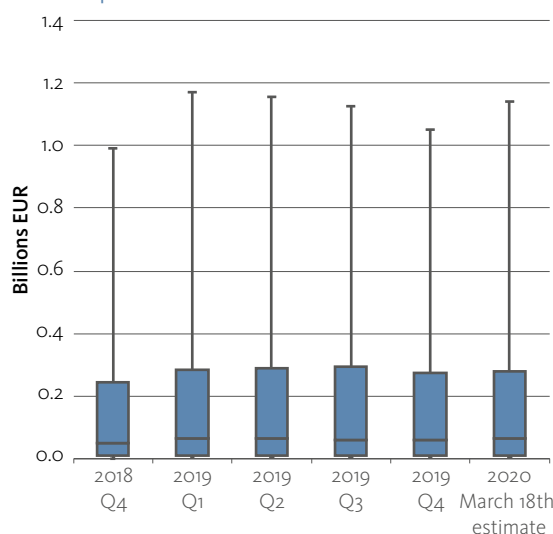


Figure 4.7: Cross-distribution in non-life TP between 31 Dec. 2018 and 31 Dec. 2019 and estimate for 18 Mar. 2020 based on duration of non-life business of insurance companies



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo.
 Note: The boxplot shows the median, interquartile range and 10th and 90th percentile

Figure 4.8: Estimate change in life TP (excluding index-linked and unit-linked) between 31 Dec. 2019 and 18 Mar. 2020 vs. weighted average duration of life business of insurance companies

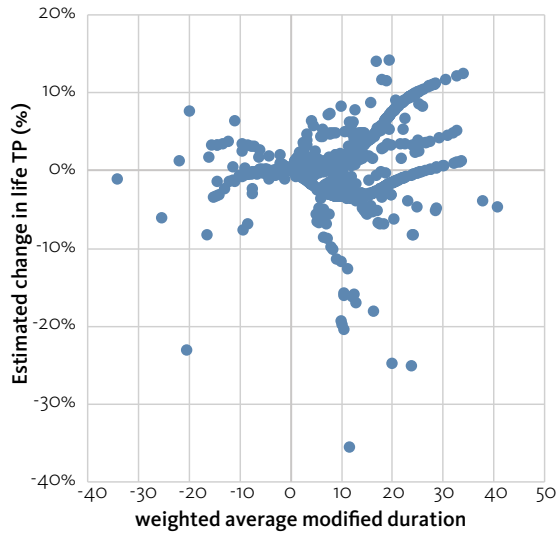
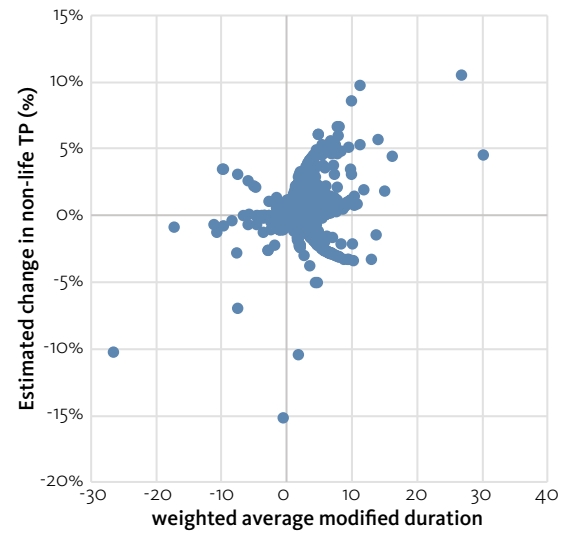


Figure 4.9: Estimate change in non-life TP between 31 Dec. 2019 and 18 Mar. 2020 vs. weighted average duration of non-life business of insurance companies



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

BOX 4 – METHODOLOGICAL APPROACH ON THE ASSETS SIDE

Asset side

Scope Changes applied to investments assets (i.e. other than held for U&IL), template S.o6.o2 (list of assets with look through). All the impacts on the assets values are computed at solo level and then at sample level.

Equities (listed and unlisted) Impact on equities is applied considering the market developments shown in the Table B.1 and the aggregated investment behaviour of insurers at country level given by the Table B.2.

Table B.1

Equity indices	US	EA	UK	Emerging markets	World
12/30/2019	3221.3	3748.5	7587.1	1118.4	2353.3
3/18/2020	2398.1	2385.8	5080.6	787.8	1682.3
Change in %	-25.6%	-36.4%	-33.0%	-29.6%	-28.5%

Source: Refinitiv

Table B.2

	US	EA+CH	Emerging markets	World
AT	0%	98%	0%	2%
BE	2%	92%	1%	5%
BG	0%	87%	5%	8%
HR	0%	80%	20%	0%
CY	0%	92%	8%	1%
CZ	0%	94%	6%	0%
DK	17%	72%	8%	3%
EE	1%	89%	9%	1%
FI	12%	87%	1%	0%
FR	2%	95%	1%	3%
DE	4%	86%	2%	8%
EL	1%	87%	0%	12%
HU	0%	98%	2%	0%
IS	1%	99%	0%	0%
IE	22%	72%	5%	2%
IT	2%	96%	1%	0%
LV	1%	96%	3%	0%
LI	1%	65%	24%	10%
LT	0%	87%	13%	0%
LU	11%	84%	4%	1%
MT	24%	71%	3%	2%
NL	9%	84%	4%	3%
NO	14%	58%	1%	27%
PL	0%	100%	0%	0%
PT	1%	83%	15%	0%
RO	0%	100%	0%	0%
SK	0%	100%	0%	0%
SI	2%	90%	7%	1%
ES	2%	92%	5%	1%
SE	20%	71%	3%	5%
UK	15%	69%	9%	7%

Corporate Bonds, Structured Notes, Uncollateralized loans made, Loans made collateralized with securities and Other collateralized loans made (CIC 81, CIC 82, CIC 85)

Step 1: Duration of the Corporate Bonds and Structured Notes is computed at solo level and assigned to the whole category. We assume that the calculated duration is constant across the different credit rating categories.

Step 2: The split of the portfolio by credit ratings is computed at country level between credit quality steps (Table B.3).

Step 3: Using iBoxx yields provided in the market updates (see Table B.4) and the duration approach, we compute the change in the market values for each credit rating.

Table B.3

NCA COUNTRY	AAA	AA	A	BBB	Other
AT	23%	19%	34%	23%	2%
BE	10%	18%	35%	35%	2%
BG	6%	7%	23%	56%	9%
CY	20%	10%	31%	32%	6%
CZ	1%	9%	40%	46%	4%
DE	39%	23%	23%	14%	1%
DK	84%	6%	5%	4%	2%
EE	13%	21%	31%	34%	2%
EL	9%	12%	35%	35%	9%
ES	2%	13%	32%	47%	6%
FI	11%	9%	28%	39%	12%
FR	8%	19%	41%	29%	3%
HR	3%	4%	35%	47%	13%
HU	1%	1%	24%	59%	16%
IE	12%	15%	42%	30%	1%
IS	0%	0%	0%	100%	0%
IT	2%	7%	25%	56%	10%
LI	26%	17%	36%	21%	1%
LT	23%	15%	24%	34%	4%
LU	8%	13%	43%	34%	2%
LV	22%	7%	24%	43%	5%
MT	7%	10%	39%	41%	3%
NL	5%	13%	37%	39%	6%
NO	35%	13%	35%	16%	1%
PL	1%	4%	37%	53%	5%
PT	1%	4%	42%	44%	10%
RO	0%	3%	60%	38%	0%
SE	76%	6%	9%	8%	2%
SI	7%	10%	31%	48%	4%
SK	4%	20%	31%	42%	3%
UK	7%	13%	44%	36%	1%

Table B.4

	IBOXX EURO COR- PORATES A - Annual Yield	IBOXX EURO COR- PORATES AA - Annual Yield	IBOXX EURO COR- PORATES AAA - Annu- al Yield	IBOXX EURO COR- PORATES BBB - Annual Yield	IBOXX EURO COR- PORATES - Annual Yield
12/30/2019	0.57	0.30	0.44	0.91	0.55
3/18/2020	1.83	1.26	1.08	2.37	2.06
Change	1.27	0.96	0.64	1.46	1.51

Source: Refinitiv

Government Bonds

Step 1: Duration of the government bonds portfolio is computed at solo level.

Step 2: The split of the portfolio by issuer country of the government bonds for each insurer is computed at country level (Table B.5).

Step 3: Actual yield changes for the various country issuers, for the aggregated portfolio composition are then applied to the undertaking specific portfolio duration at the end of 2019 market values to arrive at an approximate market value as of 18 March 2020 using the market changes provided in Table B.6. For countries missing from the table, an EU average is computed if the countries are European or an overall average for the "other" category. In order to pick the right maturity, we use interpolation method and weights. If for example, the average duration of the government bonds portfolio of a company is 8.5, we use interpolation to come up with the final shock. We first compute the shock based on the change in 5y yields then the shock for the 10 y yields. Finally, after computing weights belonging to 5y and 10y, we calculate the final shock. We apply the final shocks to the "home bias" part then using the same methodology to "other EU" countries, and so on. For each part, we compute the change. The final change for a company is the sum of the changes.

Table B.5

	Home bias	Other EU	CH	US	JP	Other
AT	23%	68%	0%	0%	0%	8%
BE	53%	44%	0%	1%	0%	2%
BG	45%	51%	0%	1%	0%	4%
HR	89%	10%	0%	0%	0%	1%
CY	23%	46%	0%	7%	1%	23%
CZ	87%	11%	0%	0%	0%	2%
DK	40%	48%	0%	7%	0%	5%
EE	0%	90%	0%	1%	0%	9%
FI	22%	70%	0%	1%	0%	6%
FR	64%	32%	0%	0%	0%	4%
DE	40%	42%	0%	3%	1%	14%
EL	55%	42%	0%	1%	0%	1%
HU	96%	3%	0%	0%	0%	0%
IS	100%	0%	0%	0%	0%	0%
IE	8%	70%	0%	12%	1%	9%
IT	81%	18%	0%	0%	0%	1%
LV	19%	81%	0%	0%	0%	0%
LI	0%	60%	6%	28%	0%	5%
LT	45%	50%	0%	0%	0%	5%
LU	5%	73%	1%	13%	0%	8%
MT	18%	48%	0%	2%	0%	32%
NL	23%	69%	0%	2%	1%	4%
NO	40%	40%	0%	9%	2%	9%
PL	96%	3%	0%	0%	0%	2%
PT	48%	52%	0%	0%	0%	1%
RO	97%	2%	0%	0%	0%	1%
SK	57%	40%	0%	0%	0%	3%
SI	30%	62%	0%	1%	0%	7%
ES	84%	14%	0%	0%	0%	1%
SE	75%	11%	0%	8%	0%	6%
UK	65%	13%	0%	14%	1%	8%

Table B.6

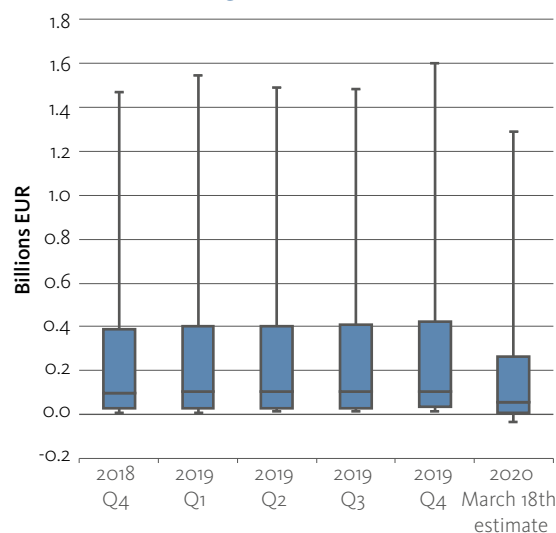
		30/12/2019						18/03/2020					
		1Y	2Y	5Y	10Y	15Y	20Y	1Y	2Y	5Y	10Y	15Y	20Y
EU- euro area	AT	-0.6577	-0.6215	-0.3370	0.0873	0.3641	0.5190	-0.3936	-0.5373	-0.0993	0.3262	0.4180	0.4834
	BE	-0.6308	-0.5880	-0.3162	0.1413	0.4867	0.7268	-0.6356	-0.5047	-0.0480	0.3446	0.5726	0.7420
	FI												
	FR	-0.6141	-0.6050	-0.3407	0.1349	0.4708	0.7115	-0.5863	-0.5190	-0.0972	0.3610	0.5837	0.7273
	DE	-0.6769	-0.6251	-0.4713	-0.1672	0.0523	0.2085	-0.8097	-0.7758	-0.5344	-0.2388	-0.1383	-0.0489
	EL												
	IE	-0.7027	-0.5652	-0.2239	0.1908	0.4876	0.7103	-0.3846	-0.4416	0.1735	0.5050	0.6853	0.8799
	IT	-0.2240	-0.0214	0.6627	1.4668	2.0214	2.4186	1.1464	1.4870	1.9425	2.4230	2.5600	2.7356
	NL	-0.6532	-0.6159	-0.3936	-0.0314	0.1936	0.3198	-0.6728	-0.6106	-0.3352	0.0175	0.1442	0.1837
	PT	-0.5471	-0.4408	0.0060	0.5180	0.9429	1.3020	-0.0140	0.1605	0.7677	1.4219	1.7241	1.9731
	SK												
	SI												
	ES	-0.4627	-0.3916	-0.0222	0.5036	0.8683	1.1566	0.0200	0.1127	0.6716	1.2246	1.5427	1.7667
EEA/EU- non euro area	BG	-0.3850	-0.2701	-0.0633	0.3225	-	-	-0.4656	-0.3761	-0.0966	0.2205	-	-
	HR												
	CZ	1.7092	1.5709	1.4911	1.6164	1.7442	1.8628	1.3921	1.3202	1.4970	1.4951	1.6313	1.9321
	DK	-0.7307	-0.6523	-0.4511	-0.1552	0.0461	0.1602	-0.7757	-0.7388	-0.4445	-0.1259	-0.0068	-0.0060
	HU	0.0199	0.2058	0.9256	2.0160	2.7014	-	0.9024	1.2395	2.1885	3.3536	4.0102	-
	NO	1.2428	1.3585	1.4145	1.5451	-	-	0.1672	0.2682	0.5904	1.0123	-	-
	PL												
	SE												
Others	UK	0.6671	0.5972	0.6319	0.8922	1.2085	1.3928	0.3680	0.3587	0.5347	0.7996	1.1402	1.3607
	US	1.6242	1.5912	1.7010	1.9148	2.0847	2.3207	0.4161	0.6242	0.9126	1.2343	1.3093	1.6563
	JP	-0.1346	-0.1378	-0.1345	-0.0131	0.1606	0.3034	-0.2106	-0.1675	-0.0939	0.0646	0.2833	0.3375
	CH	-0.8206	-0.7697	-0.6525	-0.4570	-0.2639	-0.1668	-1.0856	-0.9547	-0.6937	-0.3930	-0.2175	-0.2042

Collateralized Securities	Market value change is the average between the change of sovereign bonds and the corporate bonds change for each solo undertaking. The change for government and corporate bonds is computed based on the methodology explained above for the 2 categories. For example, if at solo level the resulting change in government bonds is -1% and the resulting change in corporate bonds is -5%, then the shock for collateralized securities of that solo is assumed -3%.
Collective Investment Undertakings (CIUs)	<p>CIU assets are attributed to other asset classes based on look through analysis (assuming that CIU's have the same asset allocation as the remaining portfolio). 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. The other asset classes are then marked to model as described herein.</p> <p>Thus, CIUs are split between Government bonds, Corporate bonds, Structured notes, Uncollateralized loans made, Loans made collateralized with securities and Other collateralized loans made, Equity, Collateralized Securities and Other. For each of the categories mentioned before we apply the shock computed independently while for the ones not mentioned no shock is applied. For example, if an insurer has an increase 0.5% in the government bonds portfolio then the share in the CIUs that corresponds to government bonds will be assumed to increase by 0.5%.</p>
Cash and deposits	No market value change.
Property	No market value change.
Mortgages and loans on policies (CIC 84 and CIC 86)	No market value change.
Derivatives	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.

Based on the methodology explained above, the movements observed in the market on 18th of March 2020 lead to a decrease of 8.75% (678 bn. EUR) of the investment assets held by the insurance companies in the sample. This outcome is mainly driven by a decrease in equities by 35.08%, a decrease in government bonds of 2.50% and a decrease in corporate bonds, structured notes and mortgages and loans¹⁶ by 7.21%. Regarding interest rates changes, the 10-year government bond yields for countries perceived safer have decreased significantly during the initial period of the virus outbreak, whereas for countries perceived riskier have increased. As CIUs have an important share on insurers' balance sheet, the estimated change of -8.71% also impacts the overall losses in investment assets. Collateralised securities are estimated to have dropped by 4.16%. As insurers hedge against interest rate risk, the interest rate swap derivative contracts compensate for some of the losses (+40.02%) produced in the markets due to the pandemic outbreak.

In the second step, the impact on the excess assets over liabilities is projected using the changes in TP (life and non-life) resulted only by the changes in RFR curves and investment assets changes via aggregation of total estimated changes at solo level. When computing the estimate of the eAoL, the impact of DTL and DTA are not considered. The present value changes in technical provisions and the mark-to-market changes in assets are assumed to occur on the Solvency II market value balance sheet, but not on the fiscal balance sheet. Across the board, these market value changes constitute losses, which are not directly settled in corporate income tax. Certain undertakings can share losses with policyholders by reducing future discretionary benefits (FDBs) to policyholders. Depending on the jurisdiction, typically these are bonuses resulting from past performance not allocated to individual policies or classes of individual policies. Again, depending on the jurisdiction, these FDBs can be clawed back by the undertaking. In some cases, the undertaking has already accounted for this eventuality by reducing the SCR by the LACTP. The estimation gives a good indication of the changes coming from the decrease in technical provisions and the decrease in most of the assets, but it does not cover for other categories such as reinsurance recoverables, reinsurance receivables, cash or other types of assets that seemed to have softened the negative impact of decrease in yields. The same reasoning is also valid for the liabilities side, as not all types of liabilities contributing to the eAoL are taken into account.

Figure 4.10: Distribution of eAoL at company level based on market changes on 18th of March 2020



Source: SII QRTs data from EIOPA Central Repository. Quarterly prudential, Solo., own calculations
 Note: The boxplot shows the median, interquartile range and 10th and 90th percentile

The estimated excess of assets over liabilities, bearing in mind the two approaches on the assets and on the liabilities side of the balance sheet and the assumptions and simplifications explained above, shows a drop of 39.1% (-601.7 bn. EUR) for 18th of March 2020 (Figure 4.10). In the pandemic crisis, it seems that some insurers might be significantly impacted in their excess of assets over liabilities (Figure 4.10).

At the end of Q4 2019, most of the insurance undertakings were well capitalised, holding an excess of assets over liabilities that amounted approximately 1.5 tr. EUR for the sample considered in the estimation. Based on the approximation, insurers would lose on aggregated level more than a third of their excess of assets over liabilities on 18th of March according to the estimation resulted using this methodological approach. As markets were extremely volatile in March, the same methodology indicates that for 25th of March insurers would lose closer to a third of their eAoL. However, exact losses are difficult to estimate given that Solvency II measures such as the volatility adjustment and the symmetric adjustment of the equity capital charge compensate some of the losses and that several insurers also hedge these risks.

¹⁶ Only part of them as explained in Box 1

BOX 5 - QUALITATIVE ASSESSMENT – EIOPA ‘RISK ASSESSMENT - COVID-19 QUESTIONNAIRE’ FOR THE INSURANCE SECTOR

Based on the qualitative questionnaire (see Annex 1 for the questions and full results), when asked to assess the materiality of the solvency risk in the current situation of Covid-19, the majority of the NCAs (60%) reported a medium materiality while almost a quarter (23%) regarded it as a high materiality. In addition, 77% of the replies stated that the existing risk mitigation measures taken by insurance companies in the context of the current situation of Covid-19 are adequate, 13% that a reinforcement of existing measures would be necessary and only 3% consider that introduction of new measures would be necessary. Regarding the forward-looking perspective (next 6 months), half of the respondents (50%) expect an increase in the solvency risk. The replies suggest a certain level of heterogeneity across insurance companies and countries at European level; this was also noted in some of the comments provided by the NCAs. In addition, the overall solvency positions are still sufficient, but many NCAs mentioned a decrease in solvency ratios in Q1 2020 caused by lower interest rates, depreciation of assets and economic uncertainties with direct impact on the balance sheets of insurers. Finally, some respondents noted that the decision to suspend or cancel dividend pay-outs might mitigate the negative effects into the solvency position by helping to preserve the capital of insurers.

5. THE IMPACT ON THE INSURANCE BUSINESS MODEL AND CONSUMERS

As the prolonged low yield environment is challenging the profitability of insurers, it also has a direct impact both on the insurers' business models and on policyholders. The first section of this chapter elaborates on the impact of low yield environment on insurers' business model and additional implications of the Covid-19 pandemic. In the second section, the effect of low yields from a consumer's perspective is discussed taking into account also the impact of virus outbreak.

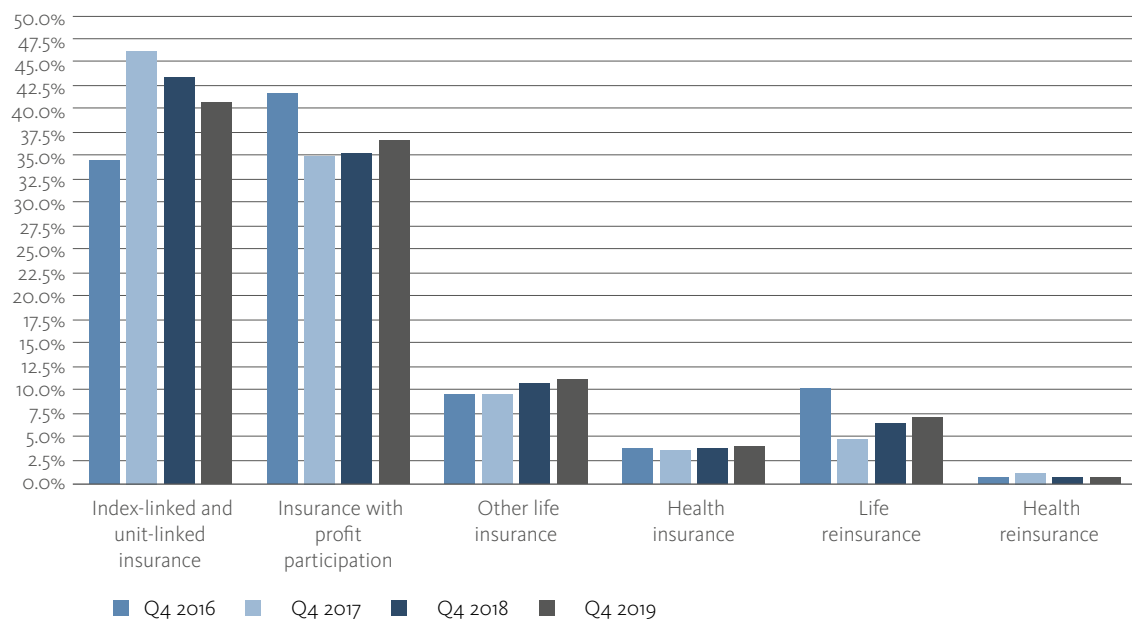
5.1. IMPACT ON BUSINESS MODEL

For the insurance market on aggregate, a gradual shift can be observed from with profit participation products with guaranteed returns towards pure unit-linked products and hybrid products – with a partial guarantee and a unit-linked component – for which products the risks lay

mostly or entirely on policyholders (Figure 5.1). The share of health insurance remains relatively stable across years whereas the share of gross written premium for reinsurance do not show a particular pattern.

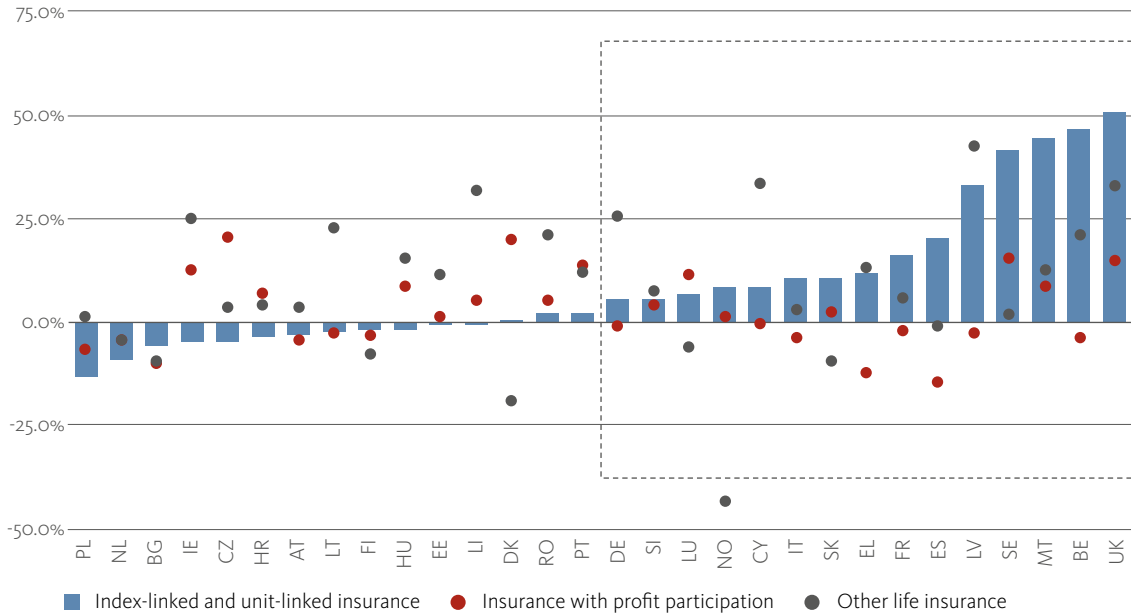
By splitting the gross written premium for life business across countries (Figure 5.2), a clear shift from with profit participation business towards unit-linked and hybrid products is indicated for many countries. In fact, based on the 2016-2018 Compound Annual Growth Rate (CAGR) for gross written premiums (GWP), it can be observed that the unit-linked line of business grew significantly more than with profit participation line of business (9.02% vs 2.07%) and even slightly more than other life insurance line of business (9.02% vs 7.71%). Furthermore, 18 out of 30 member states reported a positive 2016 – 2018 CAGR for unit-linked insurance and 8 out of these 18 reported a negative 2016-2018 CAGR for with profit participation. Additionally, 22 out of 30 member states reported a positive 2016-2018 CAGR for other life insurance.

Figure 5.1: GWP-Life business (in %)



Source: SII QRTs data from EIOPA Central Repository. Quarterly solo

Figure 5.2: 2016-2018 CAGR for unit-linked, insurance with profit participation and other life insurance lines of business – by Member State

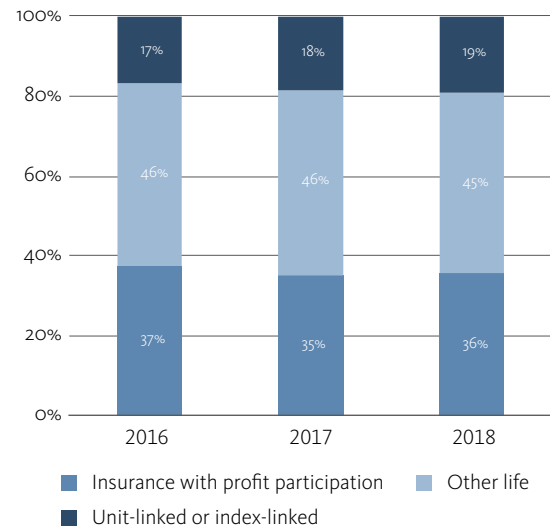


Source: SII QRTs data from EIOPA Central Repository. Annual prudential, Solo

An analysis on data about number of contracts indicates an increase in the total number of unit-linked contracts. Given that the share of unit-linked contracts is not the dominant one, the steady increase across years is indicative of the increased volumes for new business contracts for unit-linked type contracts.

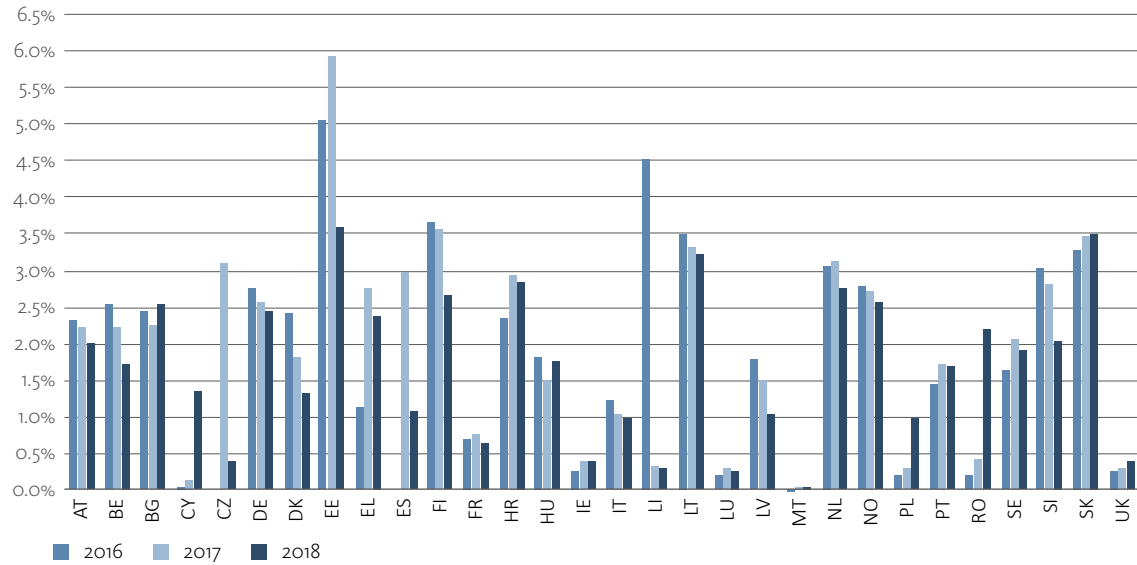
Besides the shift towards unit-linked type of products, the implications of the low yield environment might also be reflected to the interest rate guarantees levels for sold products. In particular, in Figure 5.4 the weighted average guarantee rates are illustrated across countries and across years. Some degree of heterogeneity within the dynamics across years can be observed among countries, but also some similar trends in the dynamics can be spotted among other countries. In fact, there is an indicative pattern of a gradual decrease for some countries throughout the years, which might reflect a shift to lower guarantees for new business. This trend could potentially explain the decreased share of profit participation business in terms of gross written premiums, as a decrease in the demand for lower levels of guaranteed rates.

Figure 5.3: Number of contracts year-end (in %)



Source: SII QRTs data from EIOPA Central Repository. Annual prudential, Solo.
 Note: The percentages are calculated over the total number of products for the following LOBs: insurance with profit participation, other life and Unit-linked or index-linked.

Figure 5.4: Weighted Average Interest rate guarantees (in %)



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

Additionally to the low interest rate environment, by a liability driven model perspective, due to the Covid-19 crisis, higher expected and unexpected losses for life and non-life business could lead to a decrease in Own Funds and all the activities that increase the Solvency Capital Requirement. In such a situation, an insurer might close activities and put in run-off portfolios with higher expected claims.

This behaviour can create substitutability issues especially in higher concentrated markets, with households and corporations being unable to underwrite coverages eventually enhancing the protection gap¹⁷. Additionally, the run-off of portfolios might cause a contraction on the balance sheet with a reduction in the invested volumes.

¹⁷ The impact on the Own Funds can be offset by an increase in the premia, which might generate the same consequences on the protection gap.

BOX 6 - QUALITATIVE ASSESSMENT – EIOPA ‘RISK ASSESSMENT - COVID-19 QUESTIONNAIRE’ FOR THE INSURANCE SECTOR

In order to better understand the additional implications of Covid-19 on insurance companies' business models (see Annex 1 for the questions and full results of the questionnaire conducted by EIOPA), the respondents were asked to assess the impact on product design (e.g. more Unit-linked, lower interest guarantees etc. and additional exclusions - pandemics, governmental measures; unsuitability of existing covers, or POG requirements, withdrawing from any markets/product lines) and on the cyber risk exposure. Regarding the effect of the Covid-19 on product design, 57% of the NCAs consider it had a medium materiality while 33% of the respondents noted a low materiality. The majority of the respondents (55%) mentioned that in the next 6 months there will be no changes in the product design while 45% foresee a change in the product design. Some NCAs consider that specific exclusions related to pandemics and governmental measures might apply to future insurance contracts affecting potentially travel insurance, life insurance and business interruption. Furthermore, new products could be developed to provide specific cover against pandemic related risks. Finally, parts of the industry have already taken measures to reduce the underwriting of new risks with regard to specific products or plan to do so. This could include the discontinuation of new business for specific products, the suspension of the launch of new products, the exclusion of risks from unknown diseases and a more intensive risk assessment prior to the contract conclusion (e.g. for business closure insurance, event cancellation and business interruption insurance).

Regarding cyber risk, 67% of the responses indicate that this will remain unchanged in the next 6 months and 27% foresee an increase mainly due to teleworking environments and some attempts of phishing attacks.

When asked to assess the impact of Covid-19 on claims related to index-linked and unit-linked business in the upcoming months, 23% of the replies indicate an increase in claims and 3% report a strong increase. On the other side, the respondents indicate a 53% decrease in written premiums for unit-linked business. Among the underlying drivers of the impact on claims, the NCAs mentioned that an increase in claims is likely to arise from surrenders or early retirement, slight increase in lapse rates due to economic slowdown and financial conditions. For the written premiums, the NCAs pointed out a decrease in new business due to the general economic situation, market uncertainty, shortened sales and distribution channels while for existing business they indicate a decrease in premium payments due to households' lower income, unemployment, etc. For the life insurance with profit participation business, the replies were similar with the UL business, with some of the respondents indicating a potential decrease in new business as the range of products on offer shrunk due to low interest rates (tendency already observed in pre-pandemic environment), market volatility associated with high uncertainty and potential reduction of households' income.

On the question regarding which insurance coverages the NCAs expect to be reduced/stopped and increased/begin to be underwritten due to Covid-19, the experts mentioned a potential increase in demand of cyber risk coverages and in medical expenses. Additionally, some insurers have already taken measures to reduce/stop the underwriting of new risks with regard to specific products or plan to do so. Primarily affected are P&C corporate business, in particular business closure insurance, but also event cancellation, travel insurance, credit risk insurance and business interruption insurance. On the other side, some insurance undertakings decided to extend the insurance coverage to include Covid-19 (in particular health insurance coverages).

5.2. IMPACT ON CONSUMERS

Indirect consequences of the prolonged low yield environment could have an effect on consumers. In particular, given the shift towards unit-linked type of products as discussed in the previous section, it is crucial to examine what are the costs and net returns for these type of products from a consumer’s perspective.

Table 5.1 and Table 5.2 show the actual average net return from the consumer’s perspective, factoring in costs and charges for unit-linked products and for products with profit participation. Unit-linked products expose the policyholders to both upside and downside risks (Table 5.1), whereas for the case of profit participation this is not exactly the case because of the downside protection of these products (Table 5.2). An indication of the difference between the two lines of business is illustrated in Figure 5.5, where it is evident that for unit-linked products both tails of the distribution are fatter.

Beyond issues relating to returns, the low yield environment has an indirect impact on consumers due to the underlying risks in the unit-linked market. Complex unit-linked contracts have been identified as an area of concern by NCAs since the first annual EIOPA Consumer Trends Report.

Furthermore, the concerns related to the unit-linked insurance show that for this type of products the costs are

Table 5.1: Unit-linked products net returns 2014-2018

	Net return 2018	Net return 2017	Net return 2016	Net return 2015	Net return 2014
Median Net Return	-6.1%	3.6%	2.6%	1.5%	5.1%
Average Net Return	-6.8%	5.2%	5.6%	1.9%	6.2%
25% percentile	-9.1%	0.6%	0.1%	-1.0%	0.5%
75% percentile	-2.4%	8.3%	7.2%	4.9%	10.3%

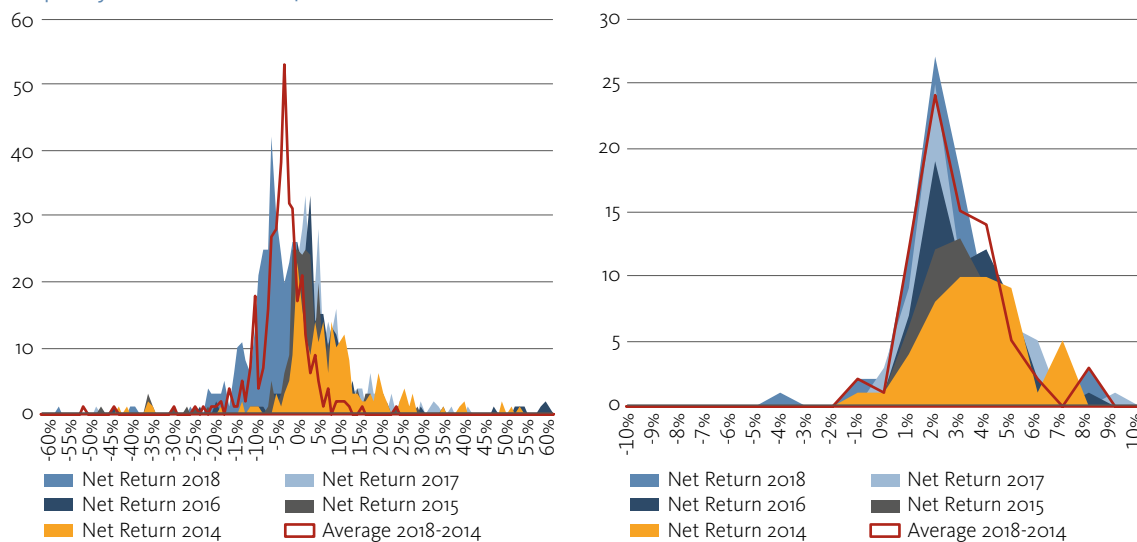
Source: Costs and past performance 2020 edition.

Table 5.2: With profit participation products, net returns 2014-2018

	Net return 2018	Net return 2017	Net return 2016	Net return 2015	Net return 2014
Median Net Return	1.7%	2.0%	2.3%	2.8%	3.1%
Average Net Return	1.9%	2.4%	2.5%	3.3%	3.1%
25% percentile	1%	1%	1%	2%	2%
75% percentile	2.5%	3.3%	3.5%	4.0%	4.1%

Source: Costs and past performance 2020 edition.

Figure 5.5: Unit-linked (on the left) and insurance with profit participation (on the right) products net return frequency distribution – 2014-2018



Source: Costs and past performance 2020 edition

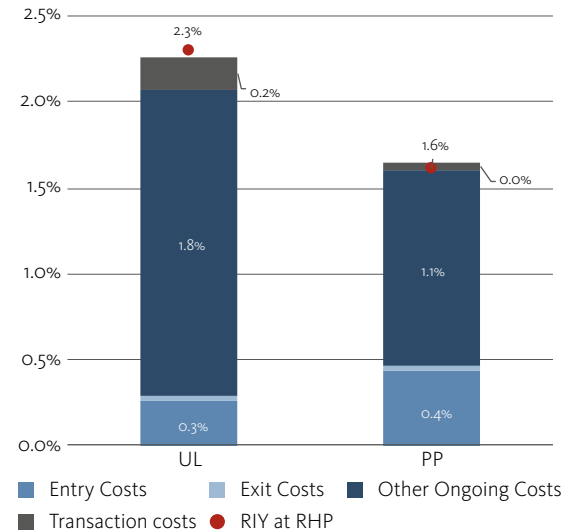
higher. In 2018, the average reduction in yield (RIY) of unit-linked products examined as part of the Costs and Past Performance exercise was higher (2.3%) than for with profit participation products (1.6%) (Figure 5.6). Costs can have a significant impact on returns and there is a risk that policyholders, particularly when market trends are upward and unit-linked products are sold with tax incentives, may often over-look costs leading to a mismatch between expected and actual returns.

The higher cost of unit-linked products as well as the fact that consumers are bearing the risk could lead to a mismatch between consumers' expectations about returns and actual returns. This might be detrimental for the consumers and maybe create a reputation cost not only for unit-linked type of products but also for the whole insurance industry.

In the context of the Covid-19 crisis, while all risks highlighted above are heightened, particular concern and detrimental outcomes for policyholder can emerge in relation to unit-linked products. In fact, unit-linked products expose policyholders directly to market shocks and, while product level data for Q1 2020 is not yet available, it is expected that returns for unit-linked products will be significantly negatively impacted, due to the effects of a strong decrease in the valuation of assets backing insurance products (see Chapter 4 on Analysis on Solvency). Given the low / negative returns, costs related issues, highlighted above, can further heighten detriment as they remain constant regardless of market trends.

Moreover, given the possible higher increase in lapses and surrenders at the level of insurance-based investment products (IBIPs) and the possible higher illiquidity in the market for assets backing such IBIPs, there is an increase illiquidity risk for unit-linked policyholders. In fact, while for insurance with profit participation the illiquidity risks rests on insurance undertakings, for unit-linked insurance,

Figure 5.6: Unit-linked and with profit participation average costs - 2018



Source: Costs and past performance 2020 edition

illiquidity risk is normally passed onto policyholders or it is regulated by the policy terms and conditions – this means that, unless stipulated otherwise, if underlying assets for a unit-linked products become illiquid such risk rests on the policyholder. Exceptions, however, also exist as in some markets, specific national provisions oblige the insurance undertakings to pay, within a prescribed time-frame, the value to the policyholder, regardless of the whether underlying assets are liquid or not.

Finally, it is also noteworthy that the financial distress brought onto consumers by the Covid-19 outbreak, may lead insurance policyholders to surrender their IBIPs earlier than the maturity date or to stop paying the regular premiums. This coupled with the structure of certain products – e.g., high upfront fees or high early surrender penalties – may lead consumer to experience higher losses in addition to the ones they will need to absorb because of market trends in the case of unit-linked products.

BOX 7 - QUALITATIVE ASSESSMENT – EIOPA ‘RISK ASSESSMENT - COVID-19 QUESTIONNAIRE’ FOR THE INSURANCE SECTOR

Regarding the impact on consumers due to the pandemic, the questionnaire (see Annex 1 for the questions and full results) asked the participant NCAs to provide their expertise on three aspects: conduct risks (miss-selling, unfair business practices, lack of/misleading information, etc.), disruption of services (e.g. delays in claims payouts, services not available, etc.) and illiquidity of unit-linked portfolios. In this context, approximately two thirds (66%) of the NCAs considered that conduct risks had a low materiality and only 3% indicated a high materiality of this risk. In addition, 76% of the replies indicate that this risk will remain unchanged in the next 6 months. Some of the NCAs noted that a potential increase in conduct risk might arise due to difficulties in selling products (lower buying power of consumers, limited access of sales to consumers due to social distancing) and the fact that the on-line distribution channel is not used at its maximum potential.

In the case of disruption of services, 83% of NCAs indicated that this had a low materiality and that insurance companies seem to have taken the necessary measures to guarantee the continuity of the services.

When asked about the risk coming from the illiquidity of unit-linked portfolios, 61% of the NCAs indicated a low materiality and 36% a medium materiality. Only 3% of the replies indicated a high materiality caused by Covid-19. Furthermore, 74% of the answers state that the risk mitigation measures taken by insurance companies are adequate and that only 29% of the NCAs foresee an increase in this risk in the next 6 months. Some NCAs noted that depending on how the financial situation will evolve, this might become an issue for some insurance companies and that some additional supervisory measures have been implemented in their jurisdictions.

ANNEX 1 - EIOPA ‘RISK ASSESSMENT - COVID-19 QUESTIONNAIRE’ FOR THE INSURANCE SECTOR

The purpose of the “EIOPA ‘Risk assessment - COVID-19 questionnaire” for the insurance sector was to allow EIOPA to identify, where possible, potential key risks and challenges in the current situation of Covid-19 shock. This report benefited from the replies from 29 EU/EEA NCAs and the UK during May 2020. The replies from this questionnaire were used to feed this report as well as the EIOPA Financial Stability report, so not all the responses are discussed here. In this context, the table below presents the content of the questionnaire and highlights in yellow the answers used in this report.

1.1 Assessment in the current situation of Covid-19 shock					
Please provide your assessment on the following key risks and challenges in the current situation of Covid-19 shock. Please do also provide the additional information in columns G. Add additional risk under item 7 if deemed necessary.		In the current situation of Covid-19 shock, how would you assess the materiality of the risk in your jurisdiction?	How would you assess the risk mitigation measures taken by insurance companies in the context of the current situation of Covid-19?	Over the next 6 months , do you expect changes in the materiality of the risk?	Please provide further comments on your risk assessment, including a short description , additional manifestations of the risk in your local market, and possible risk mitigation strategies by insurance undertakings/supervisors.
1	Credit risks, interlinkages & imbalances				
	Concentration to domestic sovereign				
	Exposure to sectors negatively affected by Covid-19 (NACE code: transport (H), tourism and hospitality (N79 + I), automotive (C29) and oil & gas (B6 & B9.1)				
	Exposure to banks (NACE codes: K64.1.9 & K64.9.2)				
	Exposure to other financial institutions (NACE code K, except banks)				
	Exposure to reinsurance (Counterparty risk)				
	Exposure to derivatives (SII market value)				
2	Liquidity & funding risks				
	Liquidity of the asset portfolio				
	Liquidity of investments funds				
	Adequacy of cash holdings				
	Lapse risk				
	Funding conditions (i.e. high cost of debt, low maturity and high leverage)				
	Variation margins on derivatives and repurchase agreements				

1.1 Assessment in the current situation of Covid-19 shock					
Please provide your assessment on the following key risks and challenges in the current situation of Covid-19 shock. Please do also provide the additional information in column G. Add additional risk under item 7 if deemed necessary.		In the current situation of Covid-19 shock, how would you assess the materiality of the risk in your jurisdiction?	How would you assess the risk mitigation measures taken by insurance companies in the context of the current situation of Covid-19?	Over the next 6 months , do you expect changes in the materiality of the risk?	Please provide further comments on your risk assessment, including a short description , additional manifestations of the risk in your local market, and possible risk mitigation strategies by insurance undertakings/supervisors.
3	Profitability & solvency risks				
	Profitability of investment portfolio (i.e. Return on assets)				
	Underwriting profitability				
	Solvency position				
	Asset sell-offs for deleveraging of risk				
	External ratings and outlook (e.g. downgrades)				
4	Impact on business model				
	Impact on product design (e.g. more Unit-linked, lower interest guarantees etc. and additional exclusions - pandemics, governmental measures; unsuitability of existing covers, or POG requirements, withdrawing from any markets/product lines)				
	Cyber security risk				
	Others - <i>If applicable, please specify in column G which impact on business model could affect insurers</i>				
5	Impact on consumers				
	Conduct risks (mis-selling, unfair business practices, lack of/misleading information, etc.)				
	Disruption of services (e.g. Delays in claims payouts, services not available, etc)				
	Illiquidity of unit-linked portfolios				
6	Increase in litigation (e.g. lawsuits due to refusal to pay income claims in the context of Covid-19 i.e. business interruption claims)				
7	[Additional risk 1 - add and specify when necessary]				

1.2 Liabilities					
Please provide your assessment on the following life and non-life lines of business (Solvency II QRT) in order to assess the current situation of Covid-19 shock. Please note that just the first six non-life lines of business are required to be filled in, and the consecutive lines of business are optional and should just be filled in when are considered to be relevant in your jurisdiction.		In the current situation of Covid-19, how would you assess the relevance of the (optional) non-life lines of business in your jurisdiction? - Please note that no further assessment (E:H) is required when a line of business is considered as "Not relevant".	In the current situation of Covid-19, how would you assess the impact on claims incurred in the following months?	Please briefly explain the underlying drivers of the impact on claims in the following months and whether reinsurance/ retrocessions contracts will partially cover these claims.	In the current situation of Covid-19, how would you assess the impact on premiums written in the following months (new business and also existing contracts)?
1	Life insurance (S.05 SII QRT)				
Required	Health insurance				
Required	Insurance with profit participation				
Required	Index-linked and unit-linked insurance				
Required	Other life insurance				
Required	Annuities stemming from non-life insurance contracts and relating to health insurance obligations				
Required	Annuities stemming from non-life insurance contracts and relating to insurance obligations other than health insurance obligations				
2	Non-life (S.05 SII QRT)				
Required	Income protection insurance				
Required	Marine, aviation and transport insurance				
Required	Credit and suretyship insurance				
Required	Assistance				
Required	Miscellaneous financial loss				
Required	Medical expense insurance				
Optional	General liability insurance				
Optional	Workers' compensation insurance				
Optional	Motor vehicle liability insurance				
Optional	Other motor insurance				
Optional	Fire and other damage to property insurance				
Optional	Legal expenses insurance				

1.2 Liabilities	
<p>Please provide your assessment on the following life and non-life lines of business (Solvency II QRT) in order to assess the current situation of Covid-19 shock. Please note that just the first six non-life lines of business are required to be filled in, and the consecutive lines of business are optional and should just be filled in when are considered to be relevant in your jurisdiction.</p>	
	<p>In the current situation of Covid-19, how would you assess the relevance of the (optional) non-life lines of business in your jurisdiction? - Please note that no further assessment (E:H) is required when a line of business is considered as "Not relevant".</p>
	<p>In the current situation of Covid-19, how would you assess the impact on claims incurred in the following months?</p>
	<p>Please briefly explain the underlying drivers of the impact on claims in the following months and whether reinsurance/ retrocessions contracts will partially cover these claims.</p>
	<p>In the current situation of Covid-19, how would you assess the impact on premiums written in the following months (new business and also existing contracts)?</p>
3	<p>In the current situation of Covid-19, how would you assess the impact on claims incurred and premiums written for the following insurance products: event cancellation, business interruption and travel insurance? Please briefly explain the underlying drivers of the impact.</p>
	<p>[Please provide your answer here]</p>
4	<p>Which insurance coverages do you expect to be reduced/stopped and increased/begun to be underwritten due to Covid-19? Please provide a brief description of the rationale.</p>
	<p>[Please provide your answer here]</p>
1.3 Regulatory responses	
1	<p>In the current situation of Covid-19, which regulatory responses were taken or planned to be taken in your jurisdiction that could have an impact in insurers (e.g. dividend interruption policy)?</p>
	<p>[Please provide your answer here]</p>

QUESTIONNAIRE'S RESULTS

Table A.1

In the current situation of Covid-19 shock, how would you assess the materiality of the risk in your jurisdiction?	Low materiality	Medium materiality	High materiality	Very high materiality	Not applicable
Concentration to domestic sovereign	37%	30%	27%	3%	3%
Liquidity of the asset portfolio	63%	33%	3%	0%	0%
Liquidity of investments funds	67%	27%	3%	0%	3%
Profitability of investment portfolio (i.e. Return on assets)	10%	40%	47%	3%	0%
Underwriting profitability	30%	50%	20%	0%	0%
Solvency position	17%	60%	23%	0%	0%
External ratings and outlook (e.g. downgrades)	20%	50%	10%	3%	17%
Lapse risk	47%	50%	3%	0%	0%
Impact on product design (e.g. more Unit-linked, lower interest guarantees etc. and additional exclusions - pandemics, governmental measures; unsuitability of existing covers, or POG requirements, withdrawing from any markets/product lines)	33%	57%	7%	0%	3%
Cyber security risk	33%	40%	20%	0%	7%
Conduct risks (mis-selling, unfair business practices, lack of/misleading information, etc.)	66%	28%	3%	0%	3%
Disruption of services (e.g. Delays in claims pay-outs, services not available, etc.)	83%	13%	3%	0%	0%
Illiquidity of unit-linked portfolios	61%	36%	3%	0%	0%

Source: EIOPA Covid-19 Questionnaire for the insurance sector

Note: The figures have not been adjusted for rounding effects, therefore the sum of some lines might slightly diverge from 100%

Table A.2

How would you assess the risk mitigation measures taken by insurance companies in the context of the current situation of Covid-19?	No measures are necessary	Existing measures are adequate	Reinforcement of existing measures is necessary	Introduction of new measures are necessary
Concentration to domestic sovereign	27%	67%	7%	0%
Liquidity of the asset portfolio	20%	73%	7%	0%
Liquidity of investments funds	14%	79%	3%	3%
Profitability of investment portfolio (i.e. Return on assets)	17%	70%	13%	0%
Underwriting profitability	13%	77%	7%	3%
Solvency position	7%	77%	13%	3%
External ratings and outlook (e.g. downgrades)	28%	59%	14%	0%
Lapse risk	13%	80%	3%	3%
Impact on product design (e.g. more Unit-linked, lower interest guarantees etc. and additional exclusions - pandemics, governmental measures; unsuitability of existing covers, or POG requirements, withdrawing from any markets/ product lines)	24%	52%	14%	10%
Cyber security risk	13%	53%	23%	10%
Conduct risks (mis-selling, unfair business practices, lack of/misleading information, etc.)	50%	50%	0%	0%
Disruption of services (e.g. Delays in claims pay-outs, services not available, etc.)	15%	74%	11%	0%
Illiquidity of unit-linked portfolios	19%	74%	7%	0%

Source: EIOPA Covid-19 Questionnaire for the insurance sector

Note: The figures have not been adjusted for rounding effects, therefore the sum of some lines might slightly diverge from 100%

Table A.3

Over the next 6 months, do you expect changes in the materiality of the risk?	Strongly decrease	Decrease	Unchanged	Increase	Strongly increase
Concentration to domestic sovereign	0%	0%	67%	33%	0%
Liquidity of the asset portfolio	0%	7%	67%	27%	0%
Liquidity of investments funds	0%	7%	62%	31%	0%
Profitability of investment portfolio (i.e. Return on assets)	0%	7%	62%	31%	0%
Underwriting profitability	0%	0%	73%	27%	0%
Solvency position	0%	17%	33%	50%	0%
External ratings and outlook (e.g. downgrades)	0%	10%	48%	38%	3%
Lapse risk	0%	3%	47%	50%	0%
Impact on product design (e.g. more Unit-linked, lower interest guarantees etc. and additional exclusions - pandemics, governmental measures; unsuitability of existing covers, or POG requirements, withdrawing from any markets/product lines)	0%	0%	55%	45%	0%
Cyber security risk	0%	7%	67%	27%	0%
Conduct risks (mis-selling, unfair business practices, lack of/misleading information, etc.)	0%	0%	76%	24%	0%
Disruption of services (e.g. Delays in claims pay-outs, services not available, etc.)	0%	3%	47%	50%	0%
Illiquidity of unit-linked portfolios	0%	4%	67%	29%	0%

Source: EIOPA Covid-19 Questionnaire for the insurance sector

Note: The figures have not been adjusted for rounding effects, therefore the sum of some lines might slightly diverge from 100%

Table A.4

In the current situation of Covid-19, how would you assess the impact on claims incurred in the following months?							
	Strongly increased (>20%)	Increased	Unchanged	Decreased	Strongly decreased (>20%)	Not possible to estimate at this point	Not under-written
Life insurance (S.05 SII QRT)							
Insurance with profit participation	0%	23%	53%	3%	0%	17%	3%
Index-linked and unit-linked insurance	3%	23%	47%	3%	3%	17%	3%
Non-life (S.05 SII QRT)							
Income protection insurance	7%	33%	40%	10%	3%	7%	0%
Marine, aviation and transport insurance	3%	13%	33%	33%	0%	13%	3%
Credit and suretyship insurance	13%	47%	23%	7%	0%	10%	0%
Assistance	3%	23%	30%	23%	7%	13%	0%
Miscellaneous financial loss	7%	43%	23%	0%	3%	20%	3%
Medical expense insurance	0%	20%	33%	10%	13%	23%	0%
General liability insurance	0%	9%	36%	36%	0%	18%	0%
Workers' compensation insurance	0%	27%	27%	9%	9%	18%	9%
Motor vehicle liability insurance	0%	11%	5%	68%	11%	5%	0%
Other motor insurance	0%	6%	19%	69%	6%	0%	0%
Fire and other damage to property insurance	7%	13%	60%	0%	0%	20%	0%
Legal expenses insurance	0%	25%	13%	13%	0%	38%	13%

Source: EIOPA Covid-19 Questionnaire for the insurance sector

Note: The figures have not been adjusted for rounding effects, therefore the sum of some lines might slightly diverge from 100%

Table A.5

In the current situation of Covid-19, how would you assess the impact on premiums written in the following months (new business and also existing contracts)?							
	Strongly increased (>20%)	Increased	Unchanged	Decreased	Strongly decreased (>20%)	Not possible to estimate at this point	Not under-written
Life insurance (S.05 SII QRT)							
Insurance with profit participation	0%	7%	17%	53%	7%	13%	3%
Index-linked and unit-linked insurance	0%	7%	10%	53%	10%	17%	3%
Non-life (S.05 SII QRT)							
Income protection insurance	0%	20%	37%	27%	3%	13%	0%
Marine, aviation and transport insurance	0%	3%	33%	40%	10%	10%	3%
Credit and suretyship insurance	0%	13%	33%	23%	7%	23%	0%
Assistance	0%	7%	33%	33%	10%	17%	0%
Miscellaneous financial loss	3%	10%	30%	23%	7%	23%	3%
Medical expense insurance	0%	13%	40%	13%	7%	27%	0%
General liability insurance	0%	0%	36%	45%	0%	18%	0%
Workers' compensation insurance	0%	0%	45%	27%	9%	9%	9%
Motor vehicle liability insurance	0%	0%	47%	47%	0%	5%	0%
Other motor insurance	0%	0%	44%	56%	0%	0%	0%
Fire and other damage to property insurance	0%	13%	40%	33%	0%	13%	0%
Legal expenses insurance	0%	0%	50%	13%	0%	25%	13%

Source: EIOPA Covid-19 Questionnaire for the insurance sector

Note: The figures have not been adjusted for rounding effects, therefore the sum of some lines might slightly diverge from 100%

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