MILLIMAN RESEARCH REPORT

Analysis of life insurers' solvency and financial condition reports year-end 2019

European and UK life insurers

September 2020

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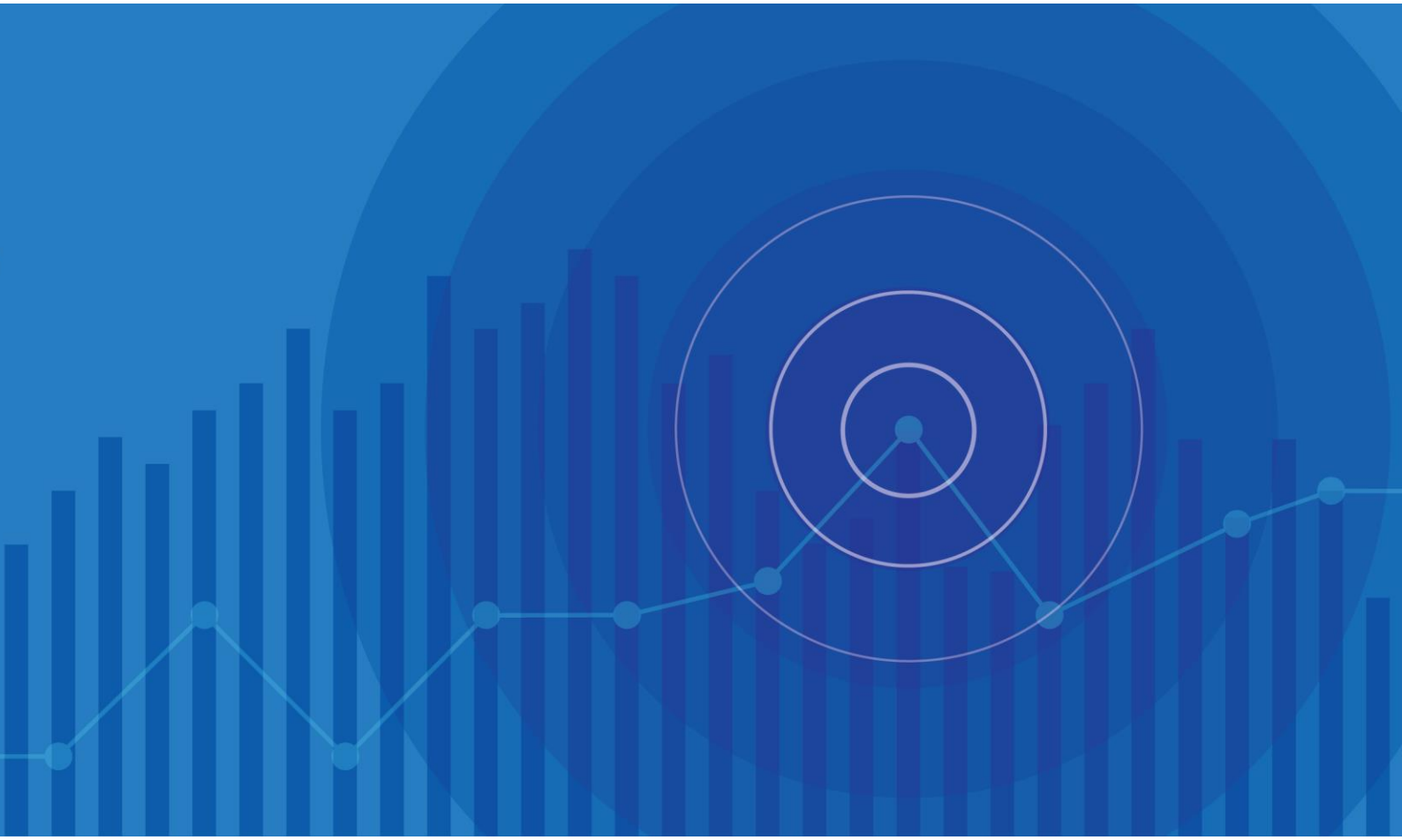

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Introduction

This report focuses on the solvency and financial condition reports (SFCRs) published in 2020 which refer to year-end 2019.[1] The SFCRs contain a significant amount of information on the insurance companies, including details on business performance, risk profile, balance sheet and capital position, amongst other things. Insurers are also required to publish a great deal of quantitative information in the public quantitative reporting templates (QRTs) included within the SFCRs.

EFFECTS OF COVID-19

The data in this report reflects the published data from the SFCRs as at 31 December 2019, and we have not made any allowance for events subsequent to this date where individuals firms have not. In particular, this means that the majority of the data in the report does not reflect the effects of the COVID-19 pandemic on firms' balance sheets and results.

EUROPEAN MARKET COVERAGE

Our analysis of the European life insurance market covers more than 690 companies from 31 countries and one territory, representing approximately £705 billion (€824 billion[2]) of gross written premium (GWP) and approximately £7,126 billion (€7,981 billion) of gross technical provisions (TPs). This represents an increase in the number of companies and gross TPs relative to our year-end 2018 report on the SFCRs of life insurers. There has, however, been a decrease in the level of GWP written in 2019 relative to that written in 2018.

The countries and territories included in the analysis are:

- Austria (AT) ROE
- Belgium (BE)
- Bulgaria (BG) CEE
- Croatia (HR) CEE
- Cyprus (CY) ROE
- Czechia (CZ) CEE
- Denmark (DK) NOR
- Estonia (EE) CEE
- Finland (FI) NOR
- France (FR)
- Germany (DE)
- Gibraltar (GI) ROE
- Greece (EL) ROE
- Hungary (HU) CEE
- Iceland (IS) NOR
- Ireland (IE)
- Italy (IT)
- Latvia (LV) CEE
- Liechtenstein (LI) ROE
- Lithuania (LT) CEE
- Luxembourg (LU)
- Malta (MT) ROE
- Netherlands (NL)
- Norway (NO) NOR
- Poland (PL) CEE
- Portugal (PT) ROE
- Romania (RO) CEE
- Slovakia (SK) CEE
- Slovenia (SI) CEE
- Spain (ES)
- Sweden (SE) NOR
- United Kingdom (UK)

NOR – countries included in the Nordics category
CEE – countries included in the Central and Eastern Europe category
ROE – countries included in the Rest of Europe category

Our analysis is based on a sample of insurers that are primarily focused on selling life insurance business, and as a result, some composite companies have been excluded from the analysis. Reinsurers have been included in the analysis where their business has been deemed to be predominantly life reinsurance.

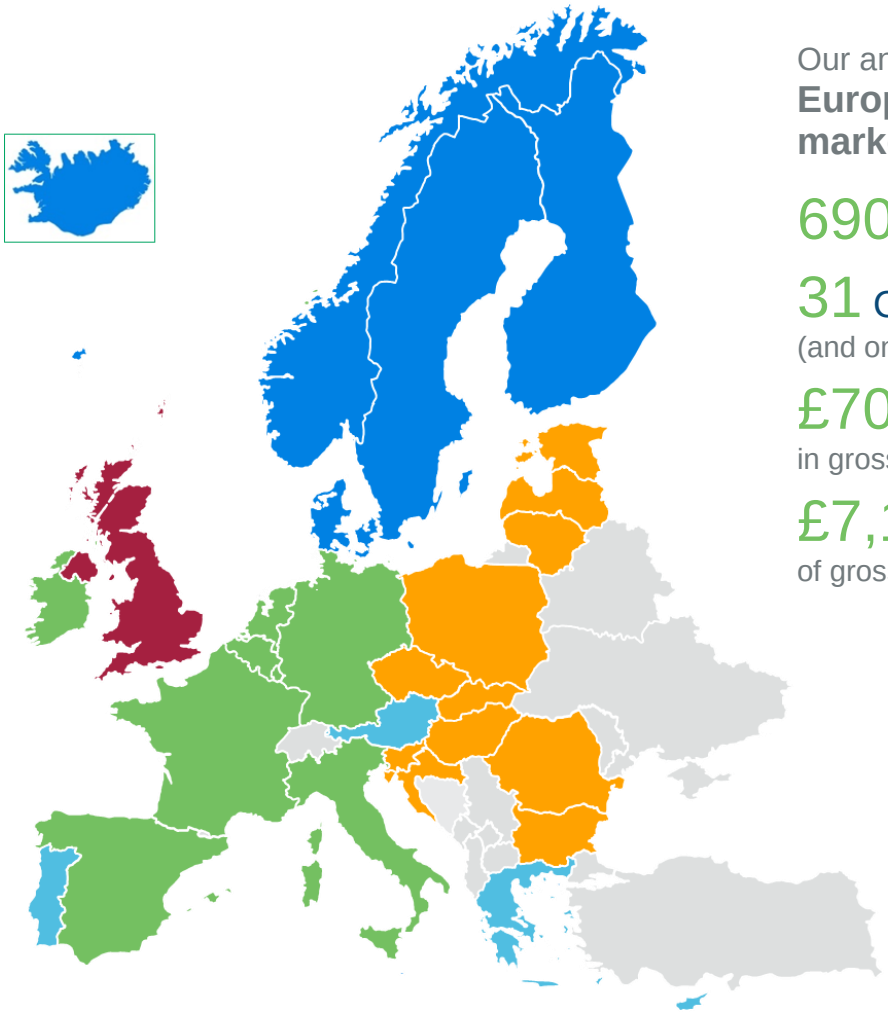
The charts and results in this report focus on nine of the largest European life insurance markets by the total volume of TPs. The top nine markets selected cover approximately 90% of the total European life insurance market. The remainder of the nations are split into three categories: the Nordics (NOR), Central and Eastern Europe (CEE) and the Rest of Europe (ROE), which captures the remaining nations.

Figure 1 shows the geographical coverage of this report. The UK is highlighted in red and the remaining eight large European markets are shown in green. The remaining categories are shown as dark blue for the NOR, orange for CEE and light blue for the ROE.

[1] These SFCRs are referred to as the year-end 2019 SFCRs throughout this report as the reporting date for the majority of companies included in the samples is 31 December 2019. There are a small number of companies included in the sample that had a reporting date other than 31 December 2019.

[2] GBP: EUR exchange rate of 1:1.17 for year-end 2019. An exchange rate of 1.12 is used for year-end 2018 figures.

FIGURE 1: EUROPEAN COUNTRIES INCLUDED IN THE ANALYSIS



Our analysis of the **European life insurance market** covers:

690+ COMPANIES

31 COUNTRIES
(and one territory)

£705 BILLION
in gross written premiums

£7,126 BILLION
of gross technical provisions

UNDERLYING DATA

The analysis underlying this report focuses on the quantitative information contained in the public QRTs. Where relevant, we have also studied the SFCRs to gain additional insights into some companies, in particular if they displayed characteristics that differed from market norms. Our focus is on solo entities rather than groups.

In carrying out our analysis and producing this research report, we relied on the data provided in the SFCRs and QRTs of our sample companies. We have not audited or verified this data or other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. It should be noted that in some cases errors were spotted in the underlying data. We have made minor adjustments to the data to correct known errors such as inconsistencies between QRTs in order to better inform our analysis; however, we have not made any material changes to the underlying data. We have not made any changes to the data to reflect additional information or changes following the reporting date.

This research report is intended solely for informational purposes and presents information of a general nature. The underlying data and analysis have been reviewed on this basis. This report is not intended to guide or determine any specific individual situation, and persons should consult qualified professionals before taking specific actions.

The data analysed in this report has been sourced from Solvency II Wire Data and companies' disclosed SCFRs. The data is available via subscription from: https://solvencyiiwiredata.com/about.

FUTURE CHANGES

The Solvency II Directive requires a full review of the Solvency II rules by the end of 2020 (the 2020 review). As part of its Solvency II 2020 Review, the European Commission (EC) has issued a call for advice to the European Insurance and Occupational Pensions Authority (EIOPA) on the review of the Solvency II Directive.

One of the areas EIOPA has been asked to assess is the current supervisory reporting and public disclosure requirements, including the QRTs and the SFCR. At the time of publication, EIOPA has an ongoing consultation with regard to proposed changes to the QRTs and SFCRs. These changes, if implemented, will have an impact on future SFCRs published and on the data contained within them.

The recommendations proposed by EIOPA are intended to ensure that the SFCR remains fit for purpose by all stakeholders that use the document. Some of the highlights from the consultation in relation to the SFCR are:

- To take into account the needs of different stakeholders and the different levels of expertise of professional and non-professional readers, EIOPA proposes to split the SFCR into two sections that are addressed to:
  - **Policyholders** – This section must be short, limited in scope and easy to read, focusing on areas of Solvency II that are relevant to policyholders.
  - **Non-policyholders** – This section should broadly follow the current form of the SFCR and should target professional readers only. It should contain less information than currently provided in some areas, and more detailed, structured, harmonised information in others.
- In the section addressed to professionals, EIOPA proposes changes to require more complete quantitative information in the SFCR, potentially resulting in additional QRTs and/or narrative information on sensitivities and own funds variations over the year.
- EIOPA proposes changes to the external audit requirements of the SFCR, such that as a minimum the Solvency II balance sheet is subject to external auditing by a qualified auditor.
- EIOPA proposes that the SFCR is to be presented in a machine-readable format and is considering options that would allow easy public access to all published SFCRs (e.g., creating a centralised repository).

As EIOPA is expected to make its recommendations on proposed changes to the European Commission by December 2020, any changes to the SFCR and QRTs are unlikely to take effect until at least year-end 2021, to provide firms with an opportunity to implement any required changes ahead of the first reporting date that the additional information is required. However, the exact date of implementation has yet to be confirmed.

The UK is currently in a transition period as part of the UK's exit from the EU that will end on 31 December 2020. At the end of the transition period, the UK regulators may choose to continue implementing Solvency II in its current form or to begin moving to a new regime. What the UK regulators will do is currently unknown and may have an impact on future SFCRs for UK life insurers.

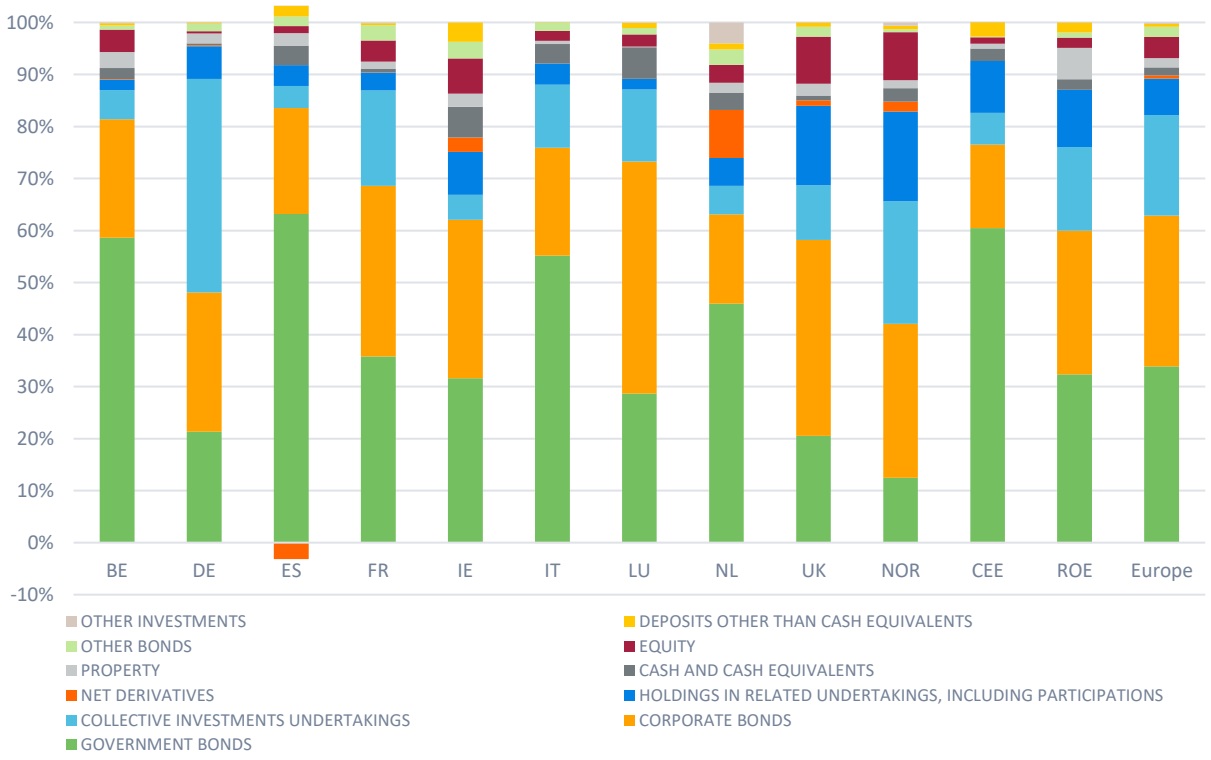
Section 1: Analysis of European life insurers

Analysis of balance sheet

ASSETS

The chart in Figure 2 shows the split of financial investments held by life insurers across European countries as at year-end 2019, with the total EU figures represented in the last bar on the chart, labelled as 'Europe.' This chart comprises financial investments classified as 'Investments (Other Than Assets Held for Index-linked and Unit-linked Contracts)' and 'Cash and cash equivalents' on the Solvency II balance sheet.[3]

FIGURE 2: SPLIT OF NON-LINKED ASSETS ACROSS EUROPE



GOVERNMENT AND CORPORATE BONDS account for **34%** AND **29%** of **all financial investments,** respectively

In general, investments in government bonds and corporate bonds make up the majority of financial investments on European life insurers' balance sheets. In aggregate, across our sample of European insurers, government bonds and corporate bonds make up 34% and 29% of total financial investments, respectively. Government bonds make up a significant proportion of investments in most of the countries, including over 60% of total investments in Spain as well as over 70% in Iceland and some countries in CEE (Hungary, Croatia, Poland and Romania).

Investments in collective investment schemes is the next largest category, accounting for a further 19% of total financial investments. In particular, the level of holdings is due to large volumes in Germany (41%) and to a lesser extent in the NOR (24%).

[3] The liability side of derivatives is also included to give the net derivative position.

Holdings in related undertakings, including participations, make up only 7% of total European financial investments, but make up a much higher percentage within the UK (15%) and the NOR (17%). The NOR percentage is driven by large holdings in related undertakings in the Danish market, accounting for 25% of all assets in Denmark.

The derivatives shown in Figure 2 represent the net derivative position. Based on the companies in our sample, a few have net negative positions, meaning that on average the value of derivative liabilities is greater than the value of derivative assets on the Solvency II balance sheet. This is particularly prevalent in Spain.

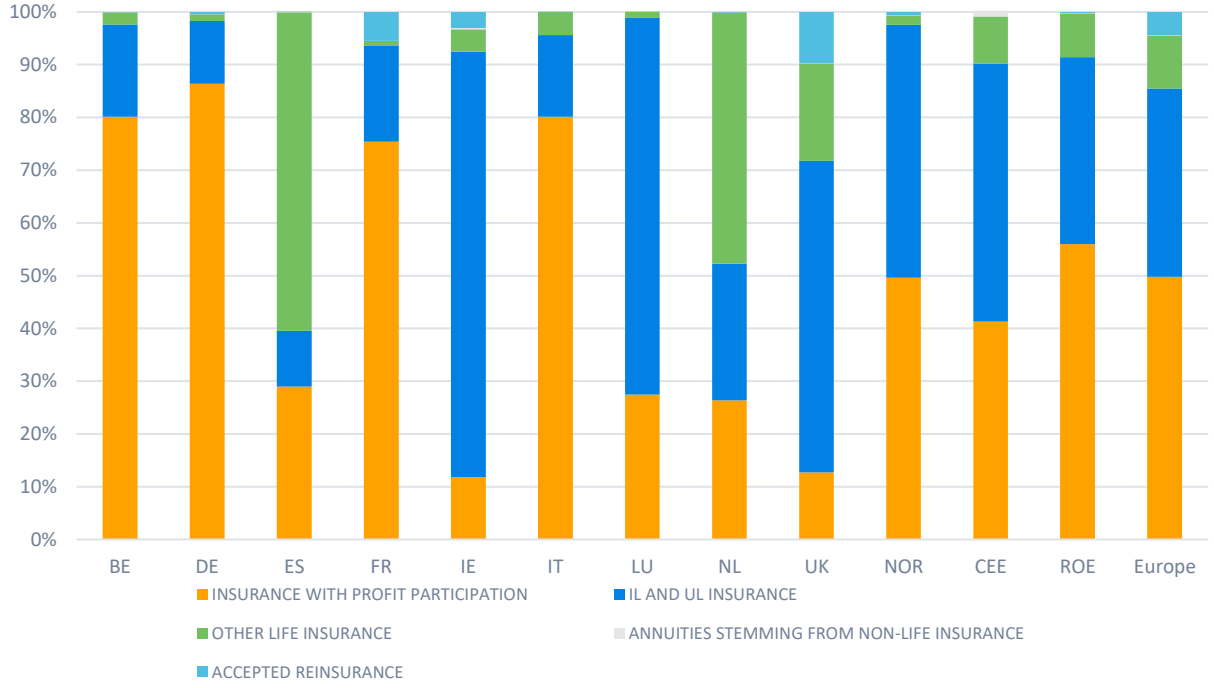
Cash and cash equivalents on average account for only 2% of the investments across European life insurers; however, it is notable that this percentage is as a high as 70% of total financial investments for the life insurers in Gibraltar (included in ROE). This represents a decrease relative to year-end 2018, where 76% of assets for life insurers in Gibraltar was held as cash and cash equivalents.

The remaining asset classes, such as equity, property and other bonds, only total around 9% of all assets held by European life insurers.

LIABILITIES

The chart in Figure 3 shows the split of TPs by line of business held by life insurers across European countries as at year-end 2019.

FIGURE 3: SPLIT OF TECHNICAL PROVISIONS BY LINE OF BUSINESS ACROSS EUROPE



50% OF TOTAL TPs for European life insurers are ‘insurance with profit participation’

The TPs for many large European insurance markets including the Belgian, French, German and Italian markets, are dominated by ‘Insurance With Profit Participation,’ whereas in the markets of Ireland, Luxembourg and the UK the TPs are predominantly in respect of ‘Index-linked (IL) and Unit-linked (UL) Insurance’ business. The markets in the NOR, CEE and ROE also show similar dominance by these two lines of business. As a result, these two lines of business represent the largest portion of TPs across Europe on average. In aggregate, across our sample of European countries, ‘Insurance With Profit Participation’ makes up half of the total TPs for life insurers (50%). ‘IL and UL Insurance’ makes up the second-largest portion of TPs (36%).

'Other Life Insurance' (10%), which includes products such as non-profit annuities and traditional protection business, has the largest share of the market in only two of the individual countries considered in our analysis: the Netherlands and Spain.

'Accepted Reinsurance' (4%) makes up the bulk of the remaining TPs, while 'Annuities Stemming From Non-Life Insurance Contracts' accounts for less than 0.1% of total TPs.

TPs in respect of 'Health Similar to Life Techniques' (HSLT) business have been excluded from Figure 3, as these lines of business are very small on average across the sample of companies considered in the analysis.

Since the previous set of SFCRs was published, the market shares of the five lines of businesses outlined above has remained relatively unchanged.

REINSURANCE

The chart in Figure 4 shows how the use of reinsurance varies across European countries as at year-end 2019. The ceded rates represent the difference in the best estimate liability (BEL) gross and net of reinsurance recoverables.

FIGURE 4: ANALYSIS OF USE OF REINSURANCE ACROSS EUROPE

On average,

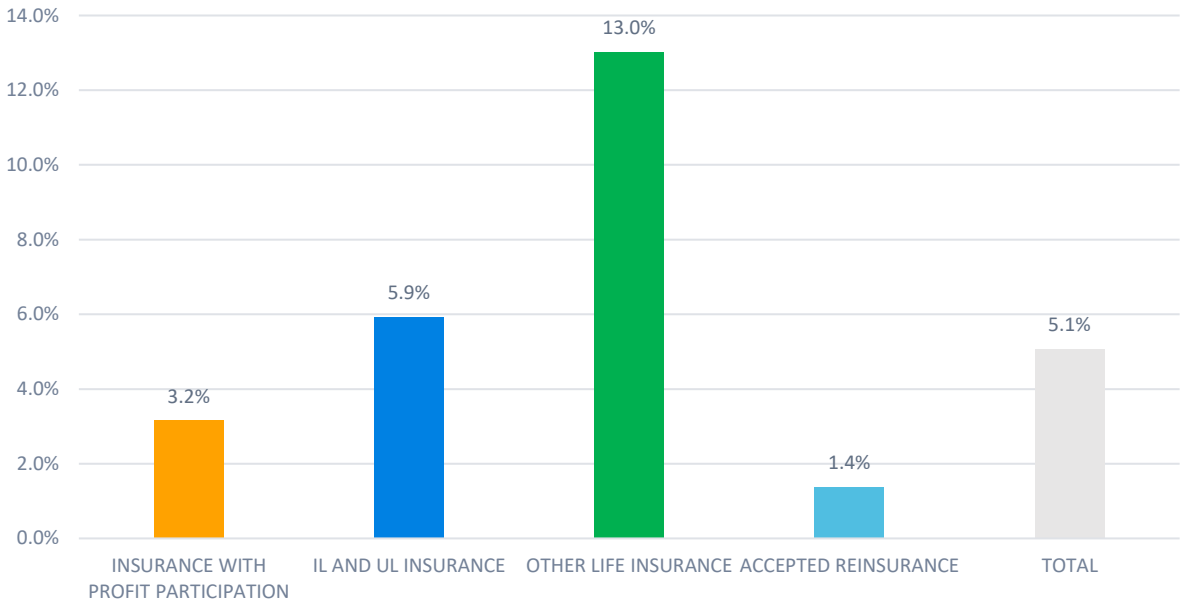
5.1% **of the BEL of life insurers** is REINSURED ACROSS EUROPE

On average, about 5.1% of the BEL is reinsured across Europe based on the companies in our sample, which also include reinsurers. This varies by country, with Luxembourg, the UK, France and Ireland being the most reliant on reinsurance of the individual countries analysed. Overall, the percentage of the BEL that is reinsured has increased marginally since the last set of SFCRs were published, with previously 4.5% of the BEL reinsured across European life insurers.

It is important to note that the impact of reinsurance on the BEL may not always provide insight on the full impact of reinsurance on the Solvency II balance sheet. For example, a longevity swap could potentially lead to a slight increase in the BEL, but will be offset by a larger impact on the solvency capital requirement (SCR) and RM.

Figure 5 shows the proportion of each line of business which is reinsured by European life insurers.

FIGURE 5: PERCENTAGE OF TECHNICAL PROVISIONS WITH REINSURANCE



The line of business with the highest ceded level of reinsurance is ‘Other Life Insurance’ at 13.0%. This is more than double the second-largest ceded percentage, which is 'IL and UL Insurance’ at 5.9%. ‘Insurance With Profit Participation’ and ‘Accepted Reinsurance’ reinsure 3.2% and 1.4%, respectively.

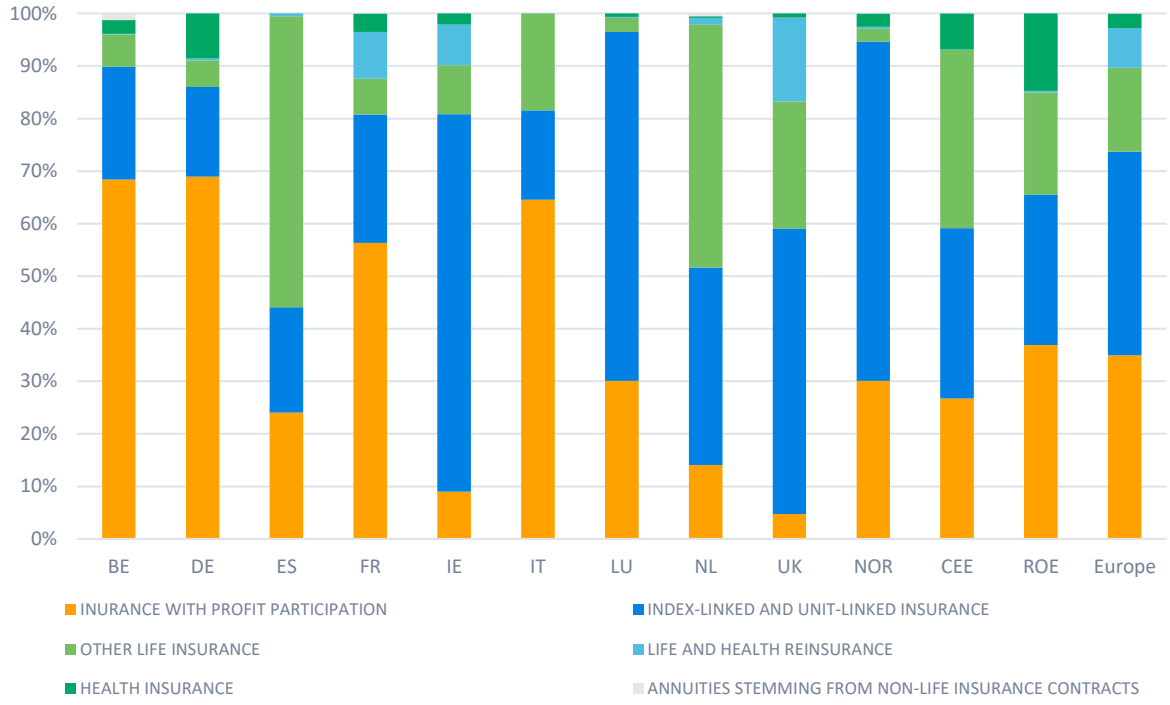
Overall, the European life insurance industry has reinsurance recoverables of £353 billion (€413 billion) across all life TPs in our sample, an increase of 16% relative to our report on year-end 2018 SFCRs. This change is most noticeable in the Irish market, where the reinsured proportion was 5.2% as at year-end 2018, increasing to 11.4% at year-end 2019. This is primarily driven by the transfer of business from the UK over 2018 and 2019 as part of a number of UK groups’ Brexit planning. In some cases, Irish subsidiaries reinsured some of the transferred business to group entities, resulting in an increase in the overall rate of reinsurance in the Irish market relative to year-end 2018.

Analysis of premiums

Comparing to the life insurance GWP figures quoted by EIOPA in 2019 (£784 billion/€917 billion) to those for 2018 (£796 billion/€891 billion) we see that there has been an increase in Euro denominated premium levels relative to last year. The Sterling figures show a slight reduction in premium volumes, as a result of Euro / Sterling interest rate movements, Comparing the EIOPA figures to our sample shows that c. 90% of all GWP in 2019 is captured in our sample.

The chart in Figure 6 shows the split of GWP by line of business held by life insurers across European countries as at year-end 2019. GWP includes premiums payable on in-force business and on any new sales over the reporting period.

FIGURE 6: SPLIT OF GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS ACROSS EUROPE



The split of premium volumes by line of business is broadly consistent with the split of TPs by line of business shown in Figure 3 above. On average across our entire sample, 'Insurance With Profit Participation' (35%) and 'IL and UL Insurance' (39%) make up the largest portions of premium volumes. There are notable differences in the Spanish and Dutch markets, with 'Other Life Insurance' making up the majority of sales in these countries.

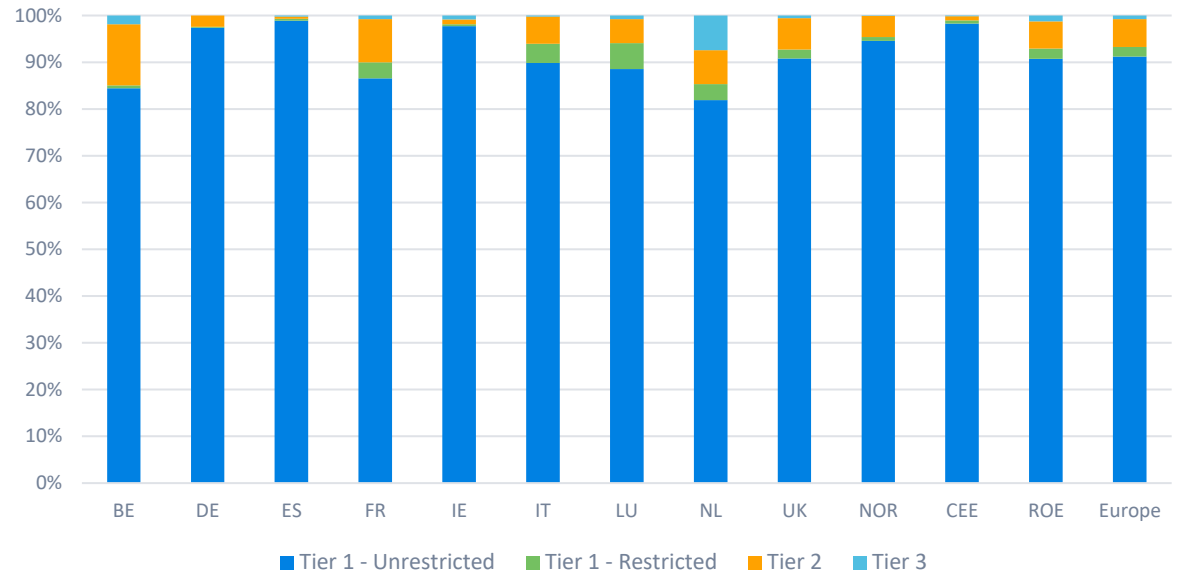
'INDEX-LINKED AND UNIT-LINKED INSURANCE' account for the largest volume of gross written premiums **39%**

In the year-end 2018 SFCRs, 34% of GWP was attributable to 'Insurance With Profit Participation,' while 43% was for 'IL and UL Insurance' showing that there has been a slight decrease in the proportion of 'IL and UL Insurance' premiums over 2019 based on the companies included in our sample.

Analysis of own funds

The chart in Figure 7 shows the split of own funds across European countries as at year-end 2018.

FIGURE 7: SPLIT OF OWN FUNDS ACROSS EUROPE



The majority of own funds (91%) held by EU life insurers in our sample are classified as tier 1 unrestricted own funds. This is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II. Whilst the split of own funds varies by country, in general the majority of European insurers have a very high portion of tier 1 unrestricted own funds, with all countries reporting at least 80% of their own funds as tier 1 unrestricted.

91% OF OWN FUNDS held by **European life insurers** are UNRESTRICTED TIER 1

Tier 1 restricted own funds make up 2% of own funds on average across Europe. Tier 2 own funds make up 6% of total own funds, and tier 3 own funds make up just 1% of total own funds on average.

Belgium has the highest amount of tier 2 own funds compared to other European countries, with tier 2 own funds accounting for 13% of total own funds in Belgium. The Belgian tier 2 own funds are primarily in respect of hybrid debt and subordinated loans.

Tier 3 own funds are held predominantly in the Netherlands and France, which together account for 65% of all tier 3 own funds. Net deferred tax assets represent the main item categorised as tier 3 own funds.

There has been little to no change in the breakdown of the own funds by tier when compared to the previous set of SFCRs.

Analysis of solvency coverage

The table in Figure 8 shows the weighted average solvency coverage ratios[4] for the solvency capital requirement (SCR) and the minimum capital requirement (MCR) across European countries.

FIGURE 8: SOLVENCY COVERAGE RATIOS BY COUNTRY

	BE	DE	ES	FR	IE	IT	LU	NL	UK	NOR	CEE	ROE	EUROPE
RATIO OF ELIGIBLE OWN FUNDS TO SCR	191%	377%	247%	261%	172%	212%	168%	191%	157%	271%	250%	228%	232%
RATIO OF ELIGIBLE OWN FUNDS TO MCR	385%	869%	655%	548%	478%	437%	462%	402%	534%	821%	713%	648%	582%

Overall, the average solvency coverage ratios for European life insurers is more than double the SCR requirement, with the weighted averages significantly in excess of the required solvency coverage ratio of 100% in all of the regions considered. The European average SCR coverage ratio is 232% (an increase on the previous year's 226%), based on the companies included in our sample. The increases were driven by large increases in average SCR coverage ratios in France (+54% versus year-end 2018), Spain (+32%) and CEE (+16%). In France, this large increase was driven by some of the largest firms seeing significant increases in eligible own funds through increases in available capital over the year relative to small changes in the SCR over the same period.

The increase in French available capital is likely due to a change in the treatment of surplus assets for with-profits funds. Previously surplus expected to be used to pay future bonuses on 'Insurance With Profit Participation' business could not be included in the eligible own funds for French insurers. This has now been changed allowing French firms to include this surplus as part of their eligible own funds and driving an increase in solvency coverage for those firms. Both approaches are allowable under Solvency II and each country can opt for either approach e.g. in Germany all undeclared surplus can be used to cover the SCR whereas in the UK surplus attributable to the 'Insurance With Profit Participation Business' in excess of the SCR attached to this business should not be included in the eligible own funds of the firm as this is ring-fenced for future bonus distributions.

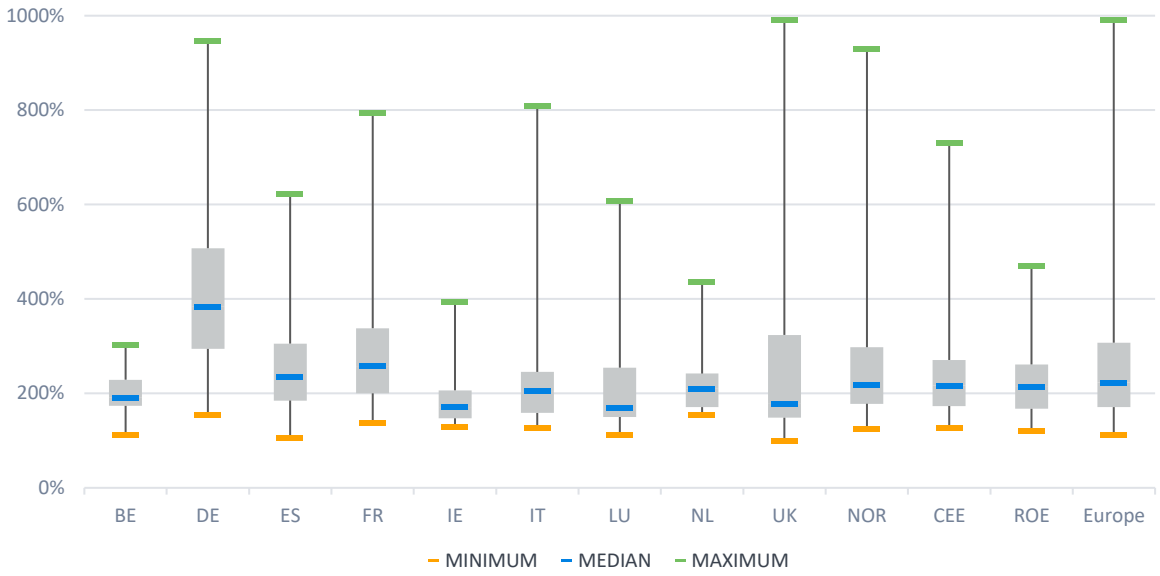
In some regions, the SCR coverage ratio did fall over the year, including in Germany (-73%), the Netherlands (-23%) and ROE (-22%). In Germany, this fall was driven by an increase in overall SCR relative to the level of eligible own funds. The increase in SCR was driven by a rise in the level of market risk exposure of German life insurers over the year.

The average MCR coverage ratio for year-end 2019 is 582%. This has moved similarly to the SCR coverage ratio over the year.

The chart in Figure 9 shows the distribution of the SCR coverage ratio by country as at year-end 2019. The chart shows the maximum coverage ratio in green, the minimum in orange and the median in blue.

[4] The weighted average solvency coverage ratios are calculated as the sum of all eligible own funds for all companies within our sample in a given region divided by the sum of all the SCRs.

FIGURE 9: DISTRIBUTION OF SCR COVERAGE RATIO BY COUNTRY[5]



The average European SCR Coverage ratio for year-end 2019 is **232%**

Figure 9 shows that, for most countries, the distribution of SCR coverage ratios has a wide range, although this does depend on the number of life insurers included in the analysis for each country. The largest ranges are seen in the UK, Germany, France and Ireland, where the number of companies included in our analysis is high.

Germany has the highest median solvency coverage ratios in Europe at 385%. The second highest is Denmark at 294%, which is included as part of the NOR.

Based on the life companies included in our analysis, there were no insurers with an SCR coverage ratio below 100% as at year-end 2019. The average distribution at a European level shows a minimum SCR coverage ratio of 100%: This is due to one company in the UK.[6] Figure 9 shows a maximum SCR coverage ratio of 992% (UK), but this excludes eight companies that reported SCR coverage ratios in excess of 1,000% (four in the UK, three in France and one in Germany). The highest of these companies was from the UK and reported an SCR coverage ratio of 3,898%. The range of the SCR coverage ratios is comparable to that seen in the 2018 year-end SFCRs.

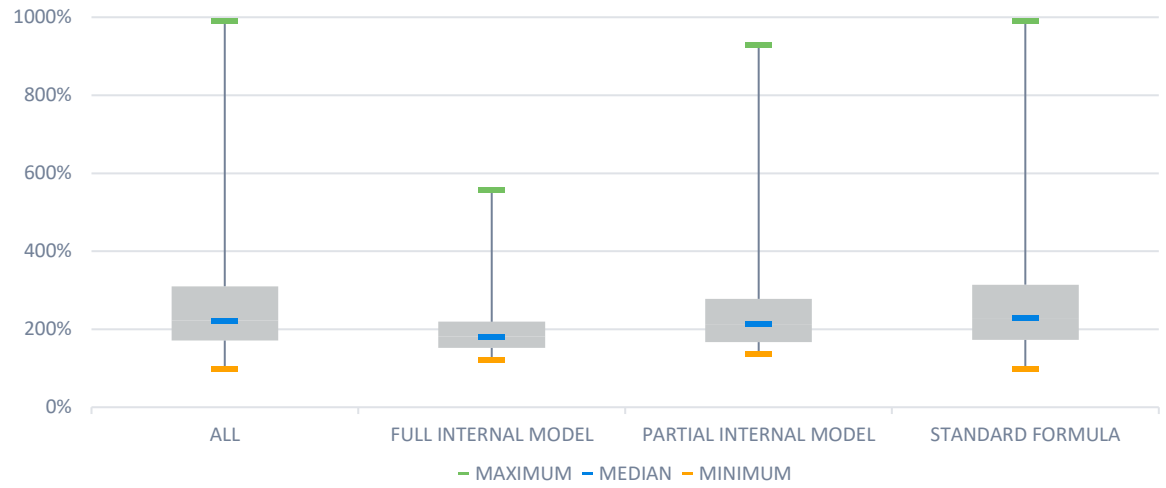
Out of the 691 companies included in our analysis, 608 are companies that report under the Solvency II Standard Formula (88%). Of the remaining 83 companies (12%), 53 companies (8%) were using a partial internal model (PIM) and 30 companies (4%) were using full internal models (FIMs).

The chart in Figure 10 shows a split of the SCR coverage ratio distribution by SCR calculation type as at year-end 2019, with any undertaking-specific parameters (USP) companies included with the Standard Formula companies. The chart shows the maximum coverage ratio in green, the minimum in orange and the median in blue.

[5] Note that we have excluded companies where the SCR coverage ratio exceeded 1,000% to allow the chart to be more readable. This excluded four companies in the UK, two in Germany and one in France.

[6] This is due to the company restricting own funds such that the company's own funds equals its SCR.

FIGURE 10: DISTRIBUTION OF SCR COVERAGE RATIOS BY SCR CALCULATION METHOD



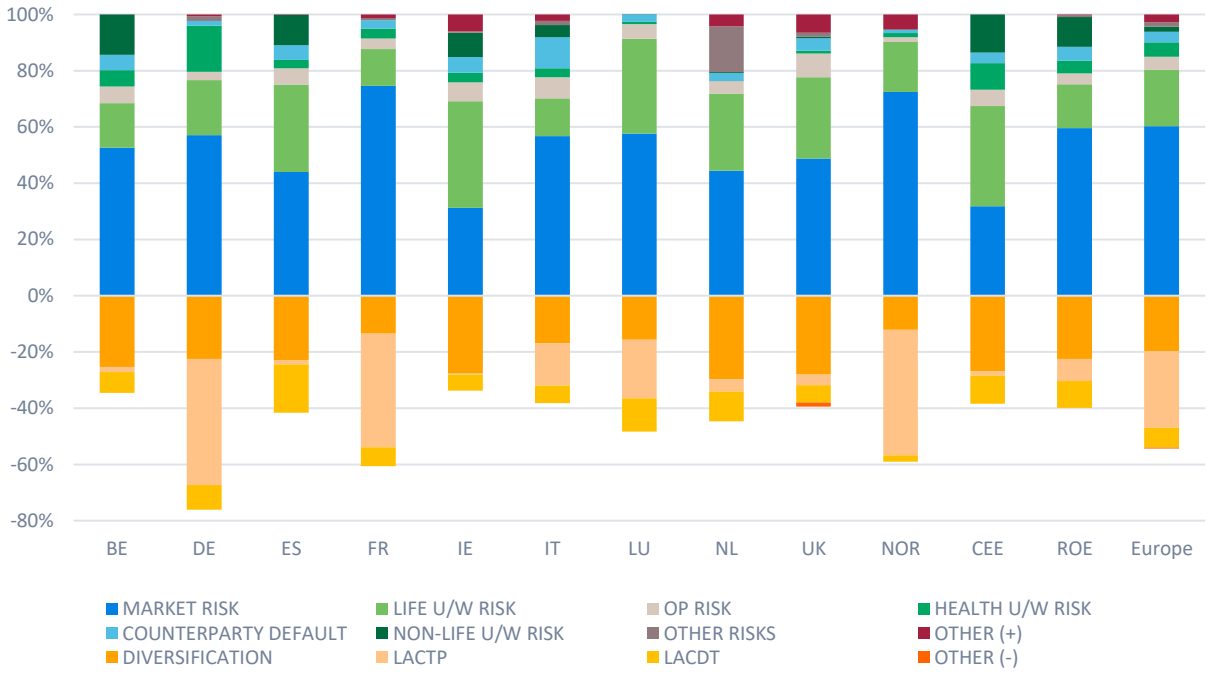
In general, the distributions are broadly similar, with the PIM and FIM companies having slightly tighter distributions and slightly lower median SCR coverage ratios than the Standard Formula companies. It is difficult to draw any inferences from this, but Figure 10 suggests that capital is more closely managed in companies with a PIM or even moreso a FIM than in those using the Standard Formula. This may be because internal model companies are more likely to be part of large insurance groups and therefore may more actively manage their capital. This is consistent with what was seen with the previous SFCR results.

As in Figure 9, solvency coverage ratios in excess of 1,000% have been excluded from the chart. All eight companies in the sample with solvency coverage ratios in excess of 1,000% are classified as Standard Formula firms.

Analysis of SCR

The chart in Figure 11 shows the breakdown of the SCR by risk module for companies across Europe as at year-end 2019, with the European average represented in the last bar on the chart, labelled as 'Europe.'

FIGURE 11: BREAKDOWN OF SCR BY COUNTRY[7]



20% The **LEVEL OF DIVERSIFICATION** between risk modules of the SCR across Europe (on average)

On average across the EU, market risk makes up the highest proportion of the undiversified SCR (60%) for life insurers. Life underwriting risk makes up the second-largest portion (20%). For Ireland, the highest proportion of the undiversified SCR is life underwriting risk (38%), while for all other regions shown it is market risk. Although a number of firms in Ireland have a larger proportion of life underwriting risk relative to market risk, one large internal model firm is skewing the average results towards life underwriting risk.

The remainder of the undiversified SCR is mostly made up of operational risk (5%), health underwriting risk (5%) and counterparty default risk (4%). Non-life underwriting risk, other risks (including intangible asset risk and underwriting risk which has not been specified as life, non-life or health) and other positive adjustments account for around 2%, 2% and 3%, respectively.

In other countries such as Spain, Ireland, Belgium and countries in the CEE and ROE categories,[8] some of the companies are reinsurers or composites, and as such it was difficult to define the distinction between life and non-life companies. These regions display a greater proportion of their SCRs held for non-life underwriting risk relative to other regions as a result.

[7] The amounts within this figure are as a percentage of the total of the capital requirement for each risk module, including operational risk (the undiversified SCR). Each element has been calculated as the sum across the companies within the region.

[8] In particular, there is a high proportion of non-life underwriting risk in our sample in Czechia, Croatia, Hungary, Romania, Slovenia and Slovakia in CEE and Austria, Greece and Portugal in ROE.

The diversification of risk results in a reduction of 20% of the undiversified SCR on average across Europe. This is diversification between the risk modules and not within the risk modules (which is not disclosed in the SFCRs for many companies). The amount of benefit varies widely by country, with diversification benefit highest where there is a wider spread of risk exposure. For example, the Netherlands has the highest diversification benefit, reflecting the fact that Dutch insurers have a wide range of risk exposures across market risk, life underwriting risk, health underwriting risk and non-life underwriting risk, resulting in a reduction of 30%. This is closely followed by the UK (28%), Ireland (28%), CEE (27%) and Belgium (25%).

In addition to diversification benefits, there are two additional adjustments available to companies post-diversification:

1. Loss-absorbing capacity of technical provisions (LACTP), which reflects the ability to reduce future discretionary benefits under stress scenarios
2. Loss-absorbing capacity of deferred tax (LACDT), which reflects the reduction in the future corporation tax payable under stress scenarios

The LACTP[9] and the LACDT result in further reductions of 27% and 7%, respectively. LACTP is largest in Norway[10] at 62% reduction, while LACDT is largest in Spain at 17%.

It is not surprising that many of the countries with high exposure to market risk are some of the countries with the largest portions of TPs in respect of 'Insurance With Profit Participation' (Germany, France and Italy). The investment guarantees associated with these contracts result in a high exposure to market risk. These countries also benefit from significant reductions as a proportion of the undiversified SCR reflecting the LACTP associated with 'Insurance With Profit Participation' business, including a 45% reduction for Germany, 40% for France and 15% for Italy.

Unfortunately, due to the nature of the public disclosure requirements for PIMs and FIMs, it is not straightforward to make a direct comparison with Standard Formula firms to analyse the SCR breakdown by risk type, as the risk exposures captured in the internal models vary by company. Where reasonable we have mapped the risks resulting from the PIMs and FIMs into the Standard Formula structure for comparison in Figure 11.

The breakdown of the SCR has not changed significantly since the previous set of SFCRs were published.

[9] Some companies reported their other risk modules after the risk-mitigation generated by their LACTP. Where this has happened, we have made an assumption that the LACTP is offsetting the market risk module and adjusted it to be pre-LACTP.

[10] Included within the NOR. The second highest LACTP is found in Denmark, which is also included in the NOR.

Long-term guarantee measures

A number of European life insurers in our sample use long-term guarantee measures (LTGMs). The measures that are available to insurers and that are discussed in this report are:

- Matching adjustment (MA)
- Volatility adjustment (VA)
- Transitional measures on technical provisions (TMTP)

The chart in Figure 12 shows the breakdown of the SCR coverage ratio by the different LTGM and non-LTGM components (as at year-end 2019) for each of the regions analysed in this report. The total across all companies in our sample is also shown.

FIGURE 12: BREAKDOWN OF SCR COVERAGE RATIO BY LONG-TERM GUARANTEE MEASURE

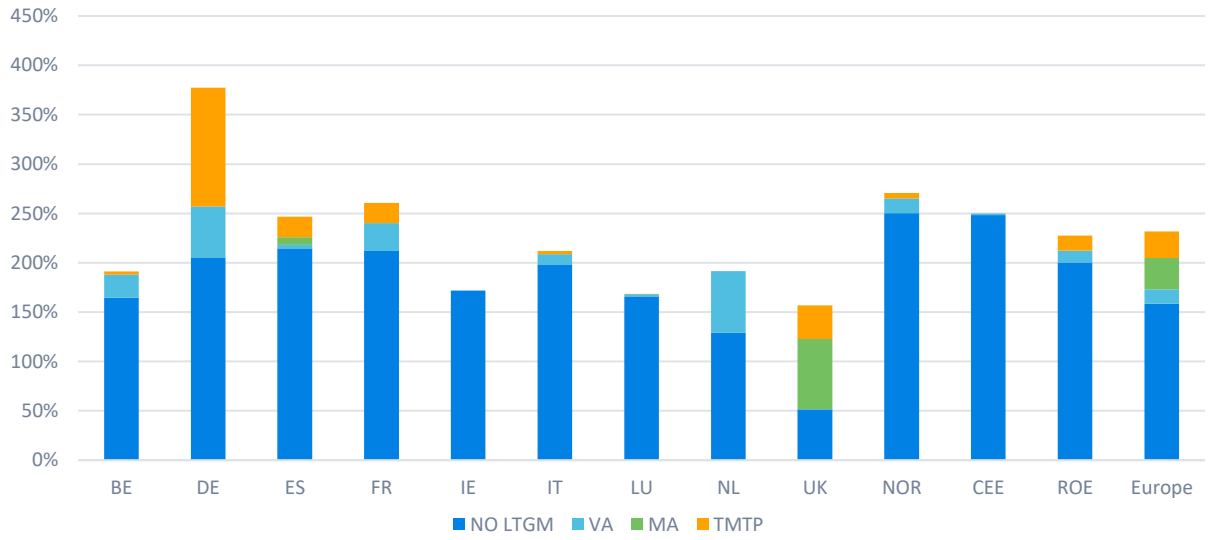


Figure 12 shows that different countries place different levels of reliance on the various LTGMs. The VA is the most widely used measure, affecting 21 of the 31 countries and one territory in our sample, including all of the largest markets we have shown in the chart. It has the largest impact in the Netherlands, where it increased the SCR coverage ratio by 62 percentage points on average. In general, usage of the VA is lower in countries where prior approval by the regulator is required, such as the UK and Ireland (increasing the SCR by less than one percentage point in each country). Approval is also required in Denmark; however, there is high VA usage there (contributing 29 percentage points of the SCR coverage ratio). There are also substantial VA impacts in Germany (52 percentage points), France (28 percentage points) and Belgium (23 percentage points). Higher take-up in countries such as Germany and the Netherlands could be due to the possibility of using the dynamic volatility adjustment (DVA). The DVA is currently not reported separately to the non-dynamic VA and as such as not been separated out in our analysis; however, separate reporting of the dynamic and non-dynamic VAs is under consideration as part of the Solvency II 2020 Review.

Over **50%** of **German companies** in our report apply the **TMTP**

The TMTP is being used in 12 of the countries, based on our sample. The SCR coverage ratio in Germany is 120 percentage points higher on average due to the use of the TMTP, the highest impact of any country in our sample. More than 50% of the German companies in our report apply the TMTP, with some showing very large benefits from its use. The other countries that receive the most significant increase from using the TMTP are the UK (34 percentage points), Portugal (32 percentage points), and Finland (25 percentage points).

The MA is the least frequently used LTGM, with visible impacts being seen by insurers in the UK and Spain (in Spain it is primarily used on legacy business). It contributes 71 percentage points to the UK and eight percentage points to Spain[11] (down from 53 percentage points in 2018) to each country's SCR coverage ratio based on the companies in our sample.

There are a number of countries where no companies use the LTGMs; Croatia, Cyprus, Estonia, Iceland, Latvia, Lithuania, Malta, Poland, Romania and Slovenia, as well as Gibraltar, based on the companies included in our sample. Meanwhile in Bulgaria, Czechia, Hungary, Ireland, Liechtenstein, Sweden and Slovakia, take up has been low, with only a small number of companies using the VA (contributing less than five percentage points to the solvency coverage ratio).

When comparing the results in this report to the previous SFCR reports, in general we see that there has been a decrease in the benefit received for using the LTGMs. These increases are likely due to the following:

- VA has decreased in many countries in line with a decrease in the VA rates. For example, the euro VA rates have decreased from 24 basis points (bps) to 7 bps and the Danish krone VA rates have increased from 45 bps to 20 bps over the year.
- MA has remained relatively similar over the year. In particular, in the UK market the MA benefit has remained reasonably similar despite an increase in credit spreads over the year.
- The TMTP benefits reduce by 1/16th as they run off; however, some of these have been impacted by recalculations of the measure, where required, leading to small increases in some jurisdictions.

Conclusion

There has not been a significant amount of change in European life insurers' balance sheets relative to last year.

The average European SCR coverage ratio has IMPROVED over the year **from 226% to 232%**

European life insurers continue to favour government and corporate bonds, on average, as investment categories, investing over 60% of their total assets (excluding index-linked and unit-linked assets) in these categories, on average.

The mix of life insurance business varies across Europe, with many markets (including Belgium, France, Germany and Italy) dominated by 'Insurance With Profit Participation' business, while the market in other countries (such as Ireland, Luxembourg and the UK) is predominantly in respect of 'IL and UL Insurance' business.

However, despite the different business mix, overall European life insurers had high levels of solvency cover relative to the minimum required capital based on the disclosures in the year-end 2019 SFCRs, with an average SCR coverage ratio of 232%. This represents an improvement on the year-end 2018 SFCRs, which had an average SCR coverage ratio of 226%.

Own funds are predominantly invested in tier 1 unrestricted own funds (91%), which is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II.

For most countries, the largest constituent parts of their undiversified SCRs are market risk, with life underwriting risk being the second largest component. LACTP and diversification represent the largest reductions to the SCR.

The LTGMs are used to different extents in each country, with the VA the most widely used. However, in countries where the TMTP or the MA, or indeed both, are used, they often have much higher impacts on the SCR coverage ratio than the VA. The benefit from the LTGMs to the solvency coverage has decreased since year-end 2018.

[11] This is a significant decrease from the 53 percentage points the MA added to Spanish companies in our analysis of life insurers' year-end 2018 SFCRs. This is primarily due to a larger number of Spanish companies being included in the year-end 2019 report, most of which do not apply the MA.

Section 2: Analysis of UK life insurers

UK MARKET COVERAGE

Our analysis for 2019 is based on 74 life insurance companies authorised in the UK (83 for 2018).[12] This sample includes domestic companies selling within the UK market only and a small number with cross-border sales. The companies chosen for this report are all mainly life insurers and reinsurers, including mutual societies, annuity writers, bulk purchase annuity providers and closed-book consolidators.

The 74 companies in the UK section of our report represent approximately £237 billion (€278 billion) of GWP and approximately £2,017 billion (€2,360 billion) of gross life TPs, which is estimated to represent the majority of gross life TPs in the UK. Appendix 1 contains a list of all the UK companies included in our analysis.

Our analysis of the **UK life insurance market** covers:

74 LIFE INSURERS

£237 BILLION
of gross written premiums

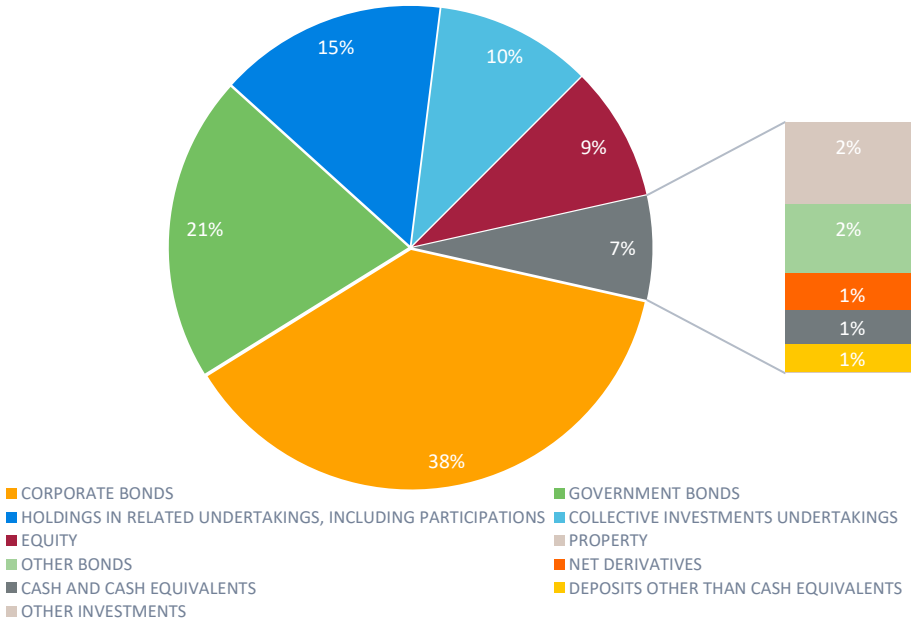
£ 2,017 BILLION
of gross technical provisions

Analysis of balance sheet

ASSETS

The asset side of the balance sheet for the average UK life company as at year-end 2019 is primarily comprised of financial investments. The breakdown of non-linked financial investments for the UK life insurance market based on our sample of companies is shown in Figure 13.

FIGURE 13: SPLIT OF NON-LINKED FINANCIAL INVESTMENTS BY ASSET CLASS[13]



Outside of the 'Assets Held for IL and UL Contracts,' UK life insurers are heavily invested in bonds, with a focus on investment in corporate bonds (38%) over government bonds (21%). The remainder of investments is concentrated in holdings in related undertakings (15%), collectives (10%) and equity (9%).

[12] The number of companies in our sample has decreased over the year. This is due to consolidation of some companies within the market as well as removing some smaller companies based on availability of their SFCRs.

[13] Does not include 'Assets held for Index-Linked and Unit-Linked Contracts.'

Holdings in related undertakings come almost entirely from five of the largest insurers: Aviva, Prudential, Royal London, Phoenix Group[14] and AEGON Scottish Equitable, which combined make up 95% of this category. Other insurers exhibit a greater concentration in government and corporate bonds as well as collective investments undertakings in the absence of such exposures to related undertakings.

There has been growth in the levels of corporate bonds (38% this year compared to 36% last year) and holdings in related undertakings (15% this year compared to 13% last year). These categories account for majority of the growth in asset holdings by UK life insurers over the year.

LIABILITIES

The chart in Figure 14 shows the breakdown of the total UK life insurers' TPs between the Solvency II lines of business, gross of reinsurance, as at year-end 2019.

FIGURE 14: SPLIT OF TOTAL UK LIFE INSURERS TECHNICAL PROVISIONS BY PRODUCT GROUPS

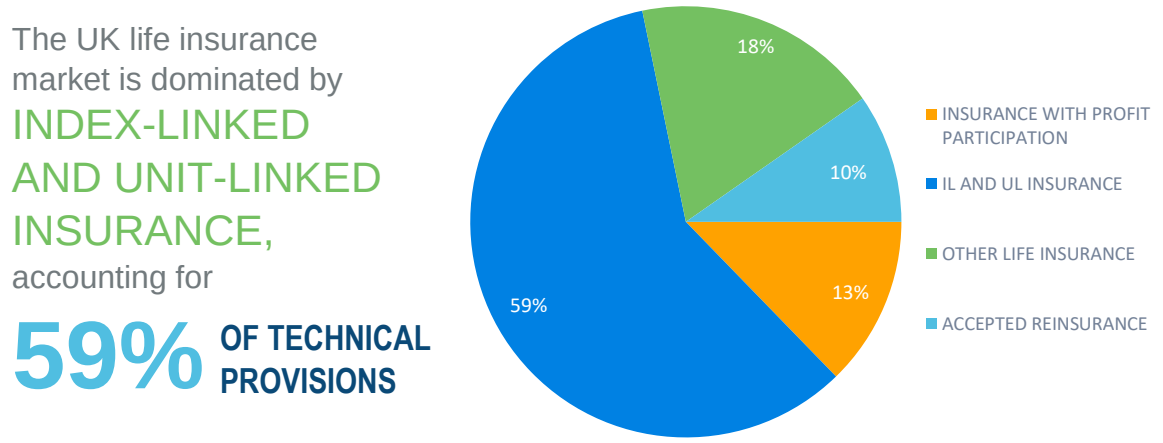


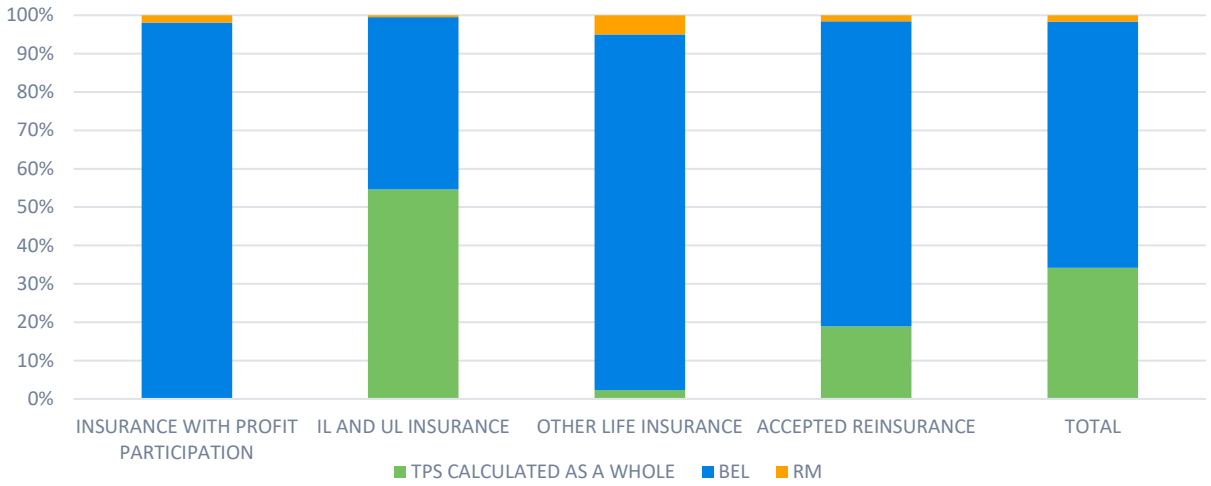
Figure 14 shows that the majority of UK life insurers' TPs are made up of 'IL and UL Insurance' (59%). 'Other Life Insurance,' 'Insurance With Profit Participation' and 'Accepted Reinsurance' are the other significant product classes, at 18%, 13% and 10%, respectively. 'Annuities (Related to Health Insurance)' accounts for around 0.01% of the total TPs and is not shown on the chart.

Overall, the total value of life TPs in our sample has grown from £1,804 billion at year-end 2018 to £2,017 billion at year-end 2019; however, the proportions of the market held in each of the product groups has remained relatively unchanged.

The TPs can be broken down further. A breakdown of the TPs for BEL, risk margin (RM) and 'TPs Calculated as a Whole' is shown in Figure 15, split by the Solvency II lines of business.

[14] Phoenix Group includes the acquisition of Standard Life during 2018.

FIGURE 15: SPLIT OF TECHNICAL PROVISIONS FOR EACH PRODUCT GROUP



'TPs Calculated as a Whole' are only significant for 'IL and UL Insurance' business and 'Accepted Reinsurance,' accounting for 55% and 19% of TPs, respectively. The 'TPs Calculated as a Whole' under the 'Accepted Reinsurance' category is a result of 10 providers with large proportions of 'IL and UL Insurance' business. Notably, this proportion has decreased from 26% as at year-end 2018. This is due to a reclassification by Managed Pension Funds of its 'Accepted Reinsurance' to 'Other Life Insurance' over the year. This has also increased the proportion of 'Other Life Insurance' held as 'TPs Calculated as a Whole' from less than 0.1% at year-end 2018 to around 2% at year-end 2019.

'TPs Calculated as a Whole' contributes a relatively large proportion (34%) of the overall TPs due to the significance of 'IL and UL Insurance' business under management within the UK's TPs. The proportion of 'TPs Calculated as a Whole' has increased marginally relative to year-end 2018. It should be noted that not all firms with 'IL and UL Insurance' business report the unit-linked liabilities within 'TPs Calculated as a Whole' and instead report it within the BEL figure.

The BEL makes up more than 40% of the TPs for every product group, including 64% of the total insurance market, while the RM ranges from only 0.4% of 'IL and UL Insurance' TPs to 5.0% of 'Other Life Insurance' TPs.

The table in Figure 16 shows the RM as a proportion of TPs for each Solvency II line of business as at year-end 2019.

FIGURE 16: RATIO OF RISK MARGIN TO TECHNICAL PROVISIONS BY PRODUCT GROUP

	RM/TP %
INSURANCE WITH PROFIT PARTICIPATION	1.9%
IL AND UL INSURANCE	0.4%
OTHER LIFE INSURANCE	5.0%
ACCEPTED REINSURANCE	1.5%
TOTAL	1.6%

The average ratio of Risk Margin to Technical Provisions is **1.6%**

The RM for 'IL and UL Insurance' is the smallest proportion of TPs, which could be due to the majority of investment risks being passed onto policyholders, thus leading to a lower RM.[15] 'Other Life Insurance' has the most significant RM at 5.0% of TPs. This category incorporates all other product types, including annuities and protection business, for which the RM is relatively high compared to the other product categories. This is due, in part, to the particularly long duration of annuity liabilities and the relatively small BEL for protection business.

[15] It is noted that for companies writing multiple lines of business, there may be an element of subjectivity in how they allocate the RM across the different lines of business.

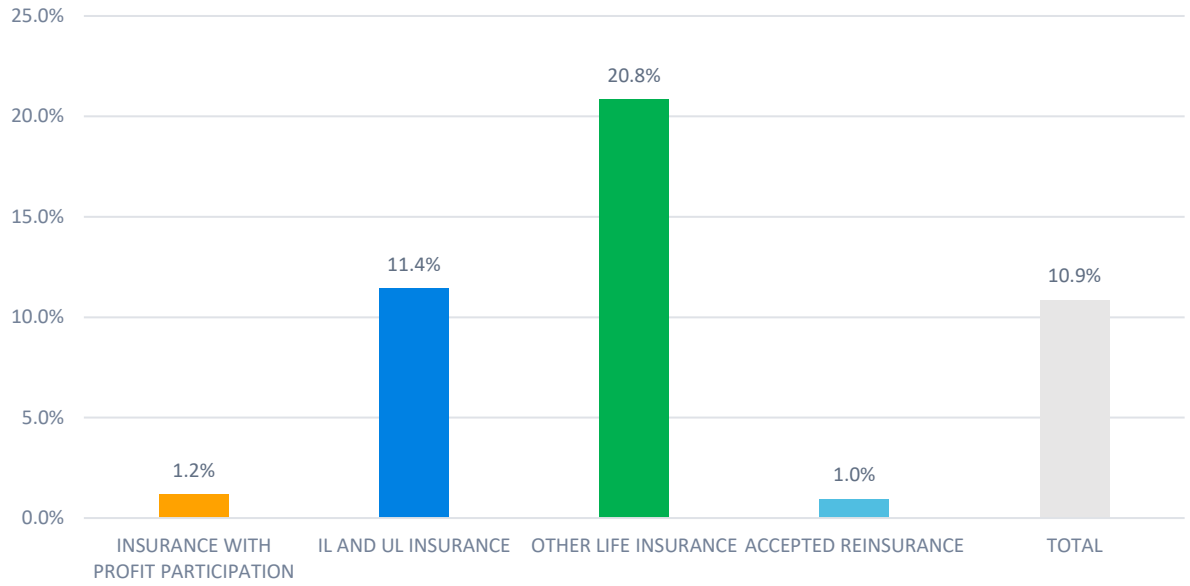
Across our sample of UK companies and across all lines of business, the RM is about 1.6% of TPs. This is very similar to the results at year-end 2018, where RM was about 1.7% of TPs. More generally, the breakdown of the BEL by product type has shown little change since the year-end 2018 SFCRs.

REINSURANCE

Reinsurance is widely used by UK life insurers, with reinsurance recoverables of 10.9% of life TPs across the 74 life insurers.

Figure 17 shows the reinsurance recoverables as a percentage of the TPs for each of the main Solvency II lines of business as at year-end 2019, alongside the total ceded percentage for UK life insurers as a whole.

FIGURE 17: PERCENTAGE OF TECHNICAL PROVISIONS WITH REINSURANCE



The line of business with the highest ceded level of reinsurance is 'Other Life Insurance' at 20.8%. This is almost double the second largest, which is 'IL and UL Insurance' at 11.4%, although due to the size of this market the value of total recoverables for 'IL and UL Insurance' products is actually much higher than for 'Other Life Insurance' (£135 billion against £78 billion). The smallest percentage is 1.0% for 'Accepted Reinsurance.'

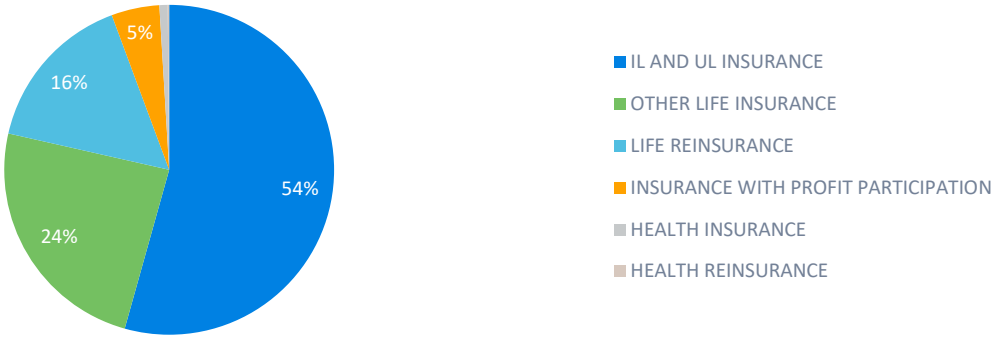
Overall, the UK Life industry has REINSURANCE RECOVERABLES of around **10.9%** of Total TPs

Overall, the industry has reinsurance recoverables of around 10.9% across all life TPs. This is an increase of 0.7% on the proportion as at year-end 2018 and suggests that there has been an overall increase in the proportion of UK life TPs that are reinsured relative to last year.

Analysis of premiums

Due to the long-term nature of life insurance business, the profile of the current book of business for many companies may be quite different from the products currently sold. The largest share of the market for the UK companies in our sample is 'IL and UL Insurance,' making up 54% of GWP in 2019.

FIGURE 18: SPLIT OF GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS



The rest of the GWP is made up of 24% 'Other Life Insurance,' 16% 'Life Reinsurance,' 5% 'Insurance With Profit Participation,' and less than 1% between 'Health Insurance' and 'Health Reinsurance.'

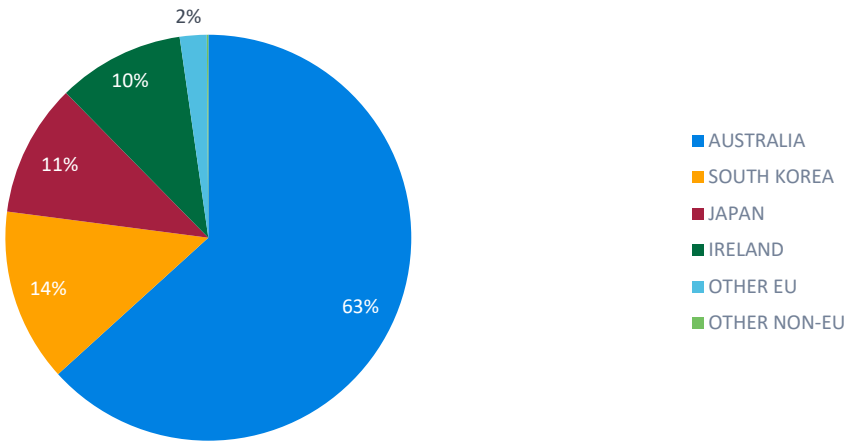
This split has changed since the year-end 2018 results, where 'IL and UL Insurance' accounted for 60%, 'Life Reinsurance' accounted for 18% and 'Other life Insurance' only accounted for 15% of GWP.

The total volume of GWP decreased, based on the companies in the sample, from £253 billion (€284 billion) during 2018 to £236 billion (€278 billion) during 2019. The decreases in GWP were primarily seen in the 'IL and UL Insurance' category, with large reductions in GWP relative to 2018 for BlackRock Life and UBS Asset Management Life, both of which hold predominantly 'IL and UL Insurance' business.

GROSS WRITTEN PREMIUMS for life insurance have REDUCED over the year

There are some insurers selling overseas through their UK companies. The chart in Figure 19 shows a rough breakdown of the cross-border sales by country for 2019.

FIGURE 19: CROSS-BORDER SALES BY COUNTRY BY GROSS WRITTEN PREMIUMS



Australia accounts for the majority of cross-border sales from the UK at 65%. The bulk of the remaining overseas sales are to South Korea (14%), Japan (11%) and Ireland (10%). The rest of the countries with cross-border sales from the UK have been grouped into 'Other EU' and 'Other Non-EU' categories, which accounts for around 2% and 0.1% of the total cross-border GWP, respectively.

One company, Pacific Life Re, dominated cross-border sales in 2019, making up 96.8% of the entire cross-border GWP from our sample, including all the business written into Australia, Japan and South Korea as well as the majority of the premiums written into Ireland.

Overall, the value of cross-border sales out of the UK in 2019 (£293 million) was less than a quarter of that seen in 2018 (£1.27 billion), which was already around half of that seen in 2017 (£2.43 billion).

The value of CROSS-BORDER SALES has reduced significantly over the year

This decline in cross-border sales is likely primarily due to the UK's exit from the EU and companies taking measures to ensure that they are able to continue their business interests in the case of changes to passporting arrangements. In particular, 2019 saw the transfer of Standard Life's non-UK business, which made up roughly two-thirds of the cross-border GWP in 2018, to Standard Life International, domiciled in Ireland.

Companies have been setting up companies in other EU states, notably Ireland, and using these as hubs for their EU business. There may be further reductions in the volume of cross-border sales out of the UK in the future as other companies makes this transition.

As a result of this reduction in cross-border sales out of the UK, the proportions of the sales have changed since the year-end 2018 SFCRs. In particular, the portion of cross-border sales relating to German business has fallen from 69% to negligible[16] while the proportion attributable to Australian business has increased from 14% to only 64%.

The data for Figure 19 was produced using QRT S.05.02.01. This QRT was not publicly disclosed by all firms covered in this report. Where QRT S.05.02.01 was not disclosed it has been assumed that the firm did not carry out any cross-border sales during 2019.

[16] This is predominantly due to the transfer of Standard Life's non-UK business to Standard Life International.

Analysis of own funds

The chart in Figure 20 shows the split of own funds by tier for all UK life companies in our sample as at year-end 2019.

FIGURE 20: SPLIT OF ELIGIBLE OWN FUNDS BY TIER

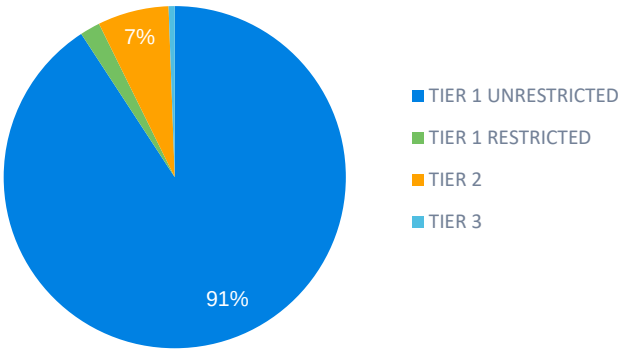


Figure 20 shows that the majority of capital for own funds is being held in the highest-quality tier 1 unrestricted capital. Overall, 91% of UK life insurers' own funds are being invested in this highest-quality capital.

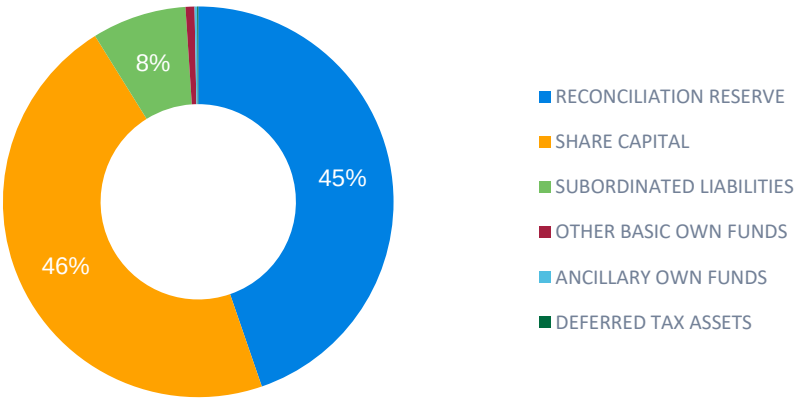
91% of own funds for UK life insurers is held in **Tier 1 Unrestricted** Capital

Tier 1 restricted capital and tier 2 capital make up 2% and 7% of the total own funds, respectively. Tier 2 is used by only some of the companies in the sample, with the five largest users of tier 2 capital accounting for more than 78% of the total. The types of companies that tend to invest in tier 2 capital are generally the largest companies in the market and also the mono-line annuity providers. Tier 2 capital is primarily made up of subordinated debt and preference shares.

There is a very small amount of tier 3 capital, which is less than 1% of the total. There was little change to the split of own funds when compared to the year-end 2018 SFCRs.

Figure 21 shows the components of the own funds as at year-end 2019.

FIGURE 21: COMPONENTS OF OWN FUNDS



Own funds within UK life insurers primarily consist of the ‘Reconciliation Reserve’ (45%) and ‘Share Capital' (46%). Own funds in ‘Subordinated Liabilities' contributes 8% of the total.

In the UK life market, ‘Deferred Tax Assets,’ ‘Ancillary Own Funds’ and ‘Other Basic Own Funds’ are all very small, making up less than 1% of the entire own funds when combined.

The breakdown of the components has changed slightly relative to the year-end 2018 SFCRs, where the ‘Reconciliation Reserve’ was larger than the ‘Share Capital.’ For the year-end 2019 SFCRs, the opposite is true, with this change being driven by new capital injections increasing the ‘Share Capital’ over the year.

The breakdown of the ‘Reconciliation Reserve’ is also available from the SFCRs and is shown in the chart in Figure 22. The ‘Reconciliation Reserve’ is constructed from the ‘Excess of Assets over Liabilities,’ with deductions made for ‘Own Shares,’ ‘Foreseeable Dividends,’ ‘Other Basic Own Fund Items’ and ‘Adjustments' (for restricted own funds items in respect of MA portfolios and ring-fenced funds).

FIGURE 22: BREAKDOWN OF THE RECONCILIATION RESERVE

The breakdown of the ‘Reconciliation Reserve' is very similar to that seen for the year-end 2018 SFCRs, including ‘Own Shares’ having no impact on the Reconciliation Reserve. The total value of ‘Excess Assets Over Liabilities’ increased over the year, with the other components showing similar proportional increases.

Analysis of solvency coverage

The weighted average SCR coverage ratio for our sample of UK life insurers from the year-end 2019 SFCRs was 157%, based on figures from companies' public QRTs. This is well in excess of the 100% coverage required, showing that many companies are choosing to hold excess capital to provide security and stability. This is, however, noticeably lower than the European average in our sample of 232%, suggesting that UK insurers on average hold less excess capital than their counterparts across Europe. The European average is being driven up by the high solvency coverage as a result of the high impact of the LTGMs in the German market. This is consistent with what was seen in the previous sets of SFCRs, where the average SCR coverage ratio for the UK was 154% and across Europe was 226%.

The weighted average MCR coverage ratio for UK life companies was 534%. This is a very high ratio and shows that the MCR is very small compared to the level of capital that insurers are actually holding. It is again lower than the European average of 582%.

The weighted average MCR as a percentage of the SCR was 28%. This indicates that for the average company, the linear MCR is calculated within the limits of 25% to 45% of the SCR, i.e., that the cap or floor is not biting for all companies, but that it is likely that the floor of 25% is biting for many companies. The weighted average MCR as a percentage of SCR has remained the same relative to the year-end 2018 SFCRs.

The table in Figure 23 compares the UK to the European average solvency coverage ratios.

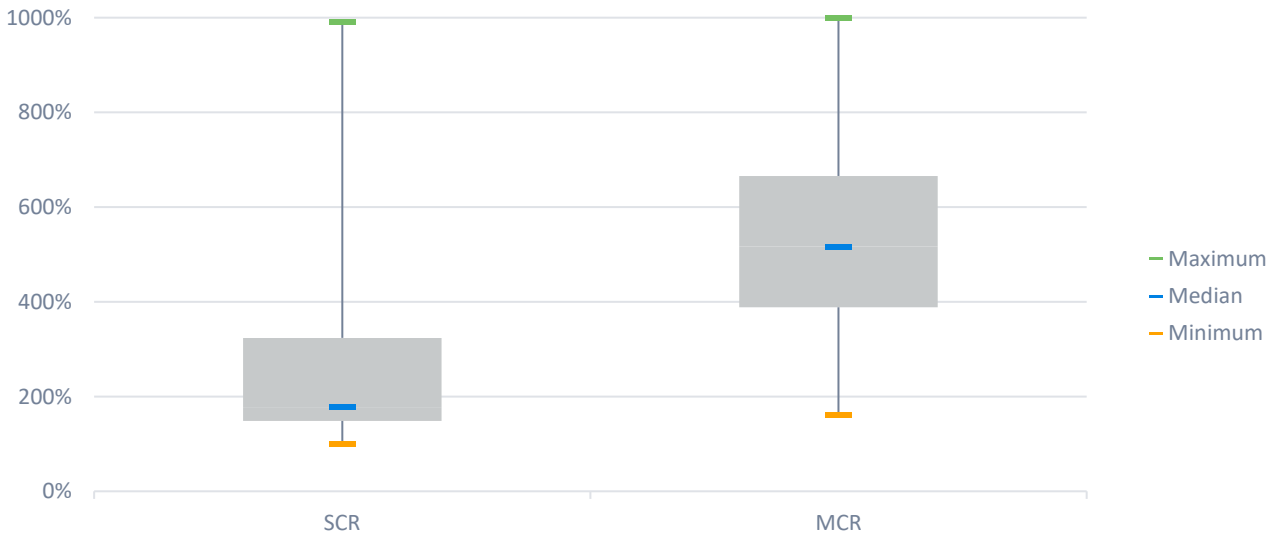
FIGURE 23: AVERAGE SCR AND MCR COVERAGE RATIOS

	UK AVERAGE	EUROPEAN AVERAGE
RATIO OF ELIGIBLE OWN FUNDS TO SCR	157%	232%
RATIO OF ELIGIBLE OWN FUNDS TO MCR	534%	582%
MCR AS A % OF THE SCR	28%	38%

THE WEIGHTED AVERAGE SCR COVERAGE RATIO
for UK life insurers was
157%
which is lower than the
EU Average of 232%

The distribution of the SCR and MCR ratios is shown in Figure 24.

FIGURE 24: DISTRIBUTION OF AVERAGE SCR AND MCR COVERAGE RATIOS



The SCR coverage ratios for UK life insurers are displayed in the box-and-whisker diagram in Figure 24. The solvency coverage has a broad spread ranging from 100% to 3,898% for the companies in the sample. It should be noted that the four companies with SCR coverage ratios of 1,000% or greater have been removed from the diagram to make it more readable. Half of the companies have an SCR coverage ratio that falls between 149% and 324%. This is a reasonably narrow range considering the overall spread of coverage ratios. It is also notable that the upper quartile makes up almost the entirety of the range. This range is also wider than for the year-end 2018 results, where half of all companies had an SCR coverage ratio between 146% and 255%.

The MCR coverage ratio has a range that is larger in size (162% to 7,351%) than the SCR coverage ratio; however, this has been limited to 1,000% to allow the chart to be readable. It has a higher maximum and minimum. Half of the companies have an MCR coverage ratio that falls between 389% and 666%, which is a larger interquartile range than shown by the SCRs.

The distribution of the SCR coverage ratios has not changed significantly since the year-end 2018 SFCRs; however, the range of MCR coverage ratios shows a significantly larger range (162% to 7,351%) relative to the year-end 2018 results (122% to 2,076%).

A number of UK life insurers use either PIMs or FIMs. Of the 74 insurers in our analysis, there are 10 PIM users and 11 FIM users, with the remaining 53 using the Standard Formula (SF). This reflects an increase in the usage of FIM relative to year-end 2018 where there were seven firms using a FIM. All of the new firms using a FIM at year-end 2019 had a PIM in place at year-end 2018.[17] There were also an additional two PIMs authorised by year-end 2019.[18]

The table in Figure 25 shows the average SCR coverage ratio for companies aggregated by their SCR methodologies (SF, PIM and FIM) as at year-end 2019.

FIGURE 25: AVERAGE SCR FOR STANDARD FORMULA, PARTIAL INTERNAL MODEL AND FULL INTERNAL MODEL FIRMS

	SCR COVERAGE RATIO
SF FIRMS	157%
PIM FIRMS	165%
FIM FIRMS	145%

Of our sample of **UK Life Firms:**

53 use the **STANDARD FORMULA**

10 use a **PARTIAL INTERNAL MODEL**

11 use a **FULL INTERNAL MODEL**

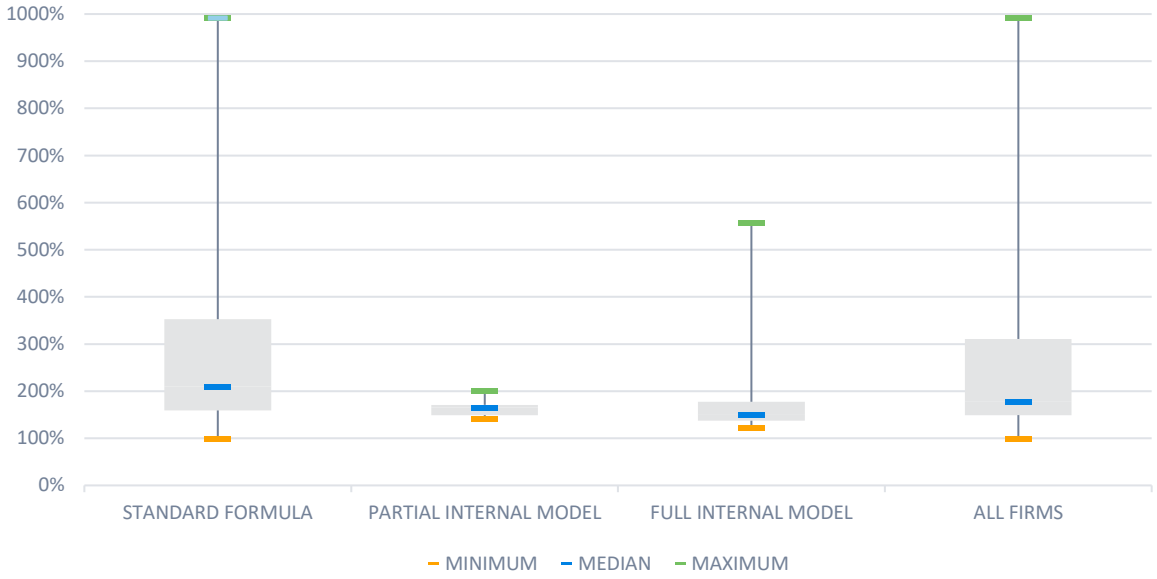
The weighted average SCR coverage ratio for companies using a PIM is the highest at 165%, followed by those using the SF at 157%. The lowest weighted average solvency coverage ratio is for companies using a FIM at 145%. This is similar to the results seen at year-end 2018 where companies using a PIM had the highest solvency coverage ratio at 155%, followed by firms using the SF at 154%, and firms using a FIM again have the lowest solvency coverage ratio with 149%.

The distribution of the SCR coverage ratios for each of the three different methodologies shows greater differences between them. The chart in Figure 26 shows the distributions as at year-end 2019.

[17] The firms in our sample with a PIM at year-end 2018 that had a FIM authorised by year-end 2019 were Just, Prudential Assurance Company, Prudential Pensions and Standard Life Assurance.

[18] The firms in our sample with a PIM authorised during 2019 were Canada Life and Royal London Mutual Insurance Society.

FIGURE 26: DISTRIBUTION OF SCR FOR INTERNAL MODEL FIRMS VERSUS STANDARD FORMULA[19]



The SCRs for internal model firms, PIM firms in particular, have a smaller range than the Standard Formula firms. Many of the companies using a PIM or FIM in our sample tend to be part of a group and the result suggests that companies within a group manage their capital more actively and do not hold significant surplus capital at the subsidiary level. Other FIM firms in our sample tend to be more specialized in the products they offer and business they sell, e.g., mono-line annuity companies. These are not necessarily a group and so may not manage capital as actively, but the specialist nature of the companies may make it more appropriate for them to use a FIM compared to the Standard Formula that is supposed to represent a 'typical' insurer.

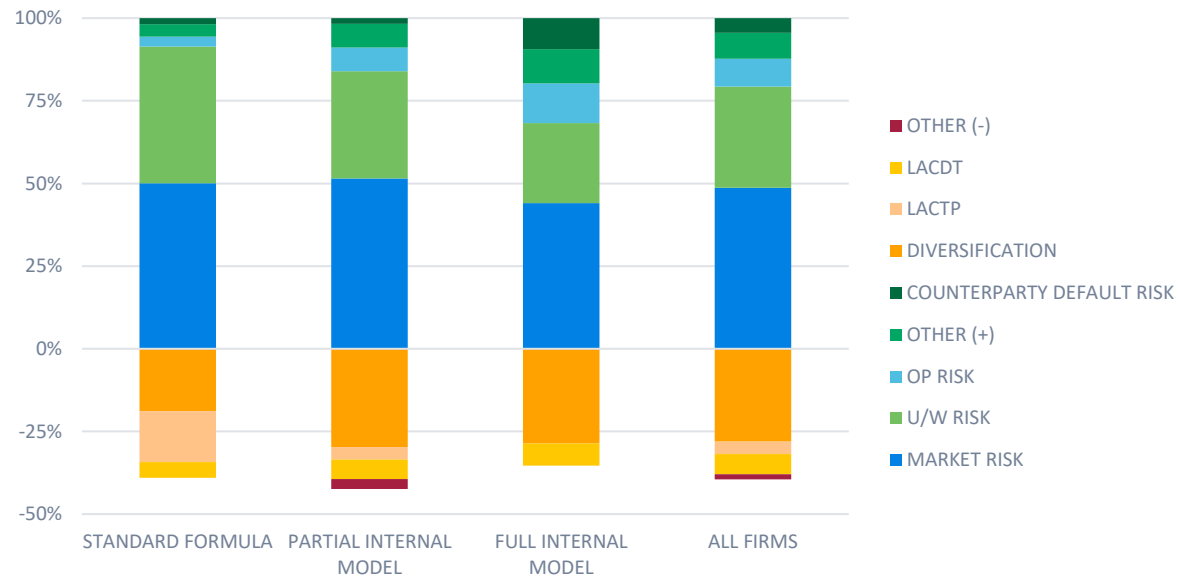
The distribution of the SCR coverage ratios is reasonably similar to that seen in the year-end 2018 SFCRs.

[19] The scale has been amended to only reach 1,000% coverage ratio because when the highest values, which are in excess of a 1,000% coverage ratio, are included, they make the rest of the chart more difficult to read. This limit on the scale only excludes four Standard Formula firms (Churchill Insurance, Liverpool Victoria Life Company, Old Mutual Wealth Life Assurance and Trafalgar Insurance).

Analysis of SCR

We analysed the various SCR components for companies using the SF, a PIM or a FIM, along with the sample of companies as a whole, in order to calculate the average contribution to the SCR for each sub-module as at year-end 2019. For firms using a PIM or FIM, we have mapped the capital requirements to the Standard Formula risks where possible.

FIGURE 27: AVERAGE SCR BREAKDOWN OF SCR BY SF, PIM AND FIM[20]



MARKET RISK is the largest risk to UK life insurers, **contributing 49%** of the undiversified SCR

Figure 27 shows that life insurers in the UK are primarily exposed to market risk, contributing 50% of the undiversified SCR for SF firms, 52% for PIM firms and 44% for FIM firms. Market risk contributes 49% to the undiversified SCR on average across all companies included in our sample.

Underwriting risk for UK life insurers contributes 41%, 32% and 24% of the undiversified SCR for SF, PIM and FIM firms, respectively, with the vast majority coming from life underwriting risk. The remainder of the underwriting risk comes from health underwriting risk from health insurance provided by UK life insurers and non-life underwriting risk from the composite reinsurers which have a majority of life insurance business. Underwriting risk contributes 31% to the undiversified SCR on average across all firms in our sample.

Counterparty default risk is the only other risk that contributes to the basic solvency capital requirement (BSCR). It makes up only 2%, 2% and 9% of the undiversified SCR for SF, PIM and FIM firms, respectively, implying that it is not as significant as either market risk or underwriting risk.

Operational risk only contributes 3% to the undiversified SCR for SF firms, but adds 7% and 12%, respectively, to PIM and FIM firms. This result is not unexpected, as operational risk is often included within internal models when companies decide that the factor-based approach prescribed by the SF does not appropriately reflect their risk exposures.

[20] The amounts within this figure are as a percentage of the total of the capital requirement for each risk module including operational risk (the undiversified SCR). Each element has been calculated as the sum across the companies for a specific SCR calculation method.

The diversification benefit for the UK life insurance market is large, giving a reduction of 19% of the undiversified SCR for SF firms, 30% for PIM firms and 29% for FIM firms. This is the diversification between the risk modules[21] and not between the various sub-modules within the risk modules. The higher diversification benefits for PIM and FIM firms suggest a departure from the SF method of aggregation, thus increasing the ability of the different risks to offset one another.

In addition to diversification benefits, adjustments are made for LACTP and LACDT. The published results show that UK insurers are utilising the LACTP adjustment, resulting in an average reduction of 4% of the undiversified SCR across all firms. There are only 23 insurers using the adjustment, with two insurers (Royal London Mutual Insurance Society and Wesleyan Assurance Society) accounting for around 62% of the entire LACTP of UK life insurers between them. Only three insurers using the LACTP adjustment do not use the SF and instead use a PIM. The LACTP gives a reduction of 15% to SF firms and 4% to the undiversified SCR for PIM firms. There is a small change relative to the year-end 2018 SFCRs where LACTP generated an 18% reduction to SF firms SCR and only a 1% reduction for PIM firms. This change is driven by an overall reduction in the level of LACTP over the year alongside the approval of Royal London Mutual Insurance Society's PIM over the course of 2019.

There are 49 companies using the LACDT adjustment, which allows a reduction of the undiversified SCR for the SF, PIM and FIM firms of 5%, 6% and 7%, respectively.

Other adjustments have been split into net increases and net decreases to the SCR. Net increases, 'Other (+)'[22] contributes 8% of the undiversified SCR across all companies, while net decreases, 'Other (-)' gives a reduction of 2% of the undiversified SCR across all companies.

[21] Excluding the operational risk module for SF firms which is not diversified with the other risk modules. The operational risk for PIM and FIM firms may be diversified with the other risk modules.

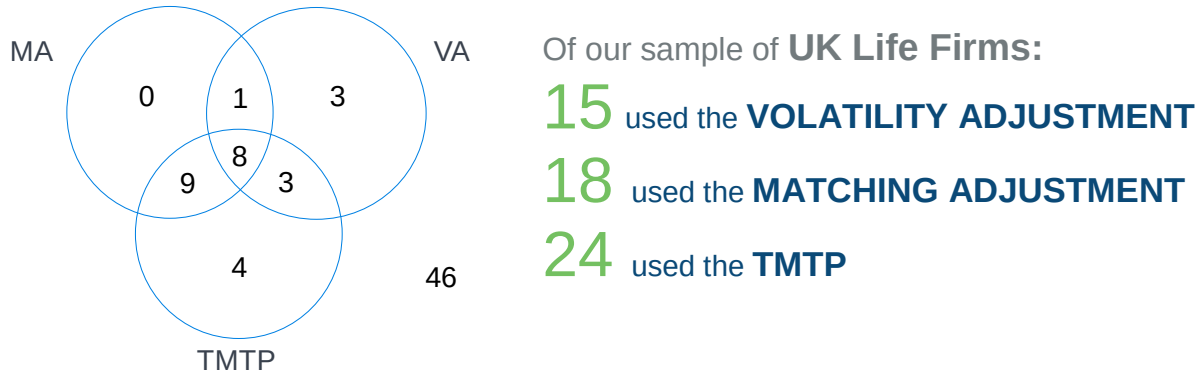
[22] 'Other (+)' includes risks from internal model firms that did not map clearly onto the risk modules of the standard formula.

Long-term guarantee measures

A significant number of UK life insurers use the LTGMs included in the analysis for this report.

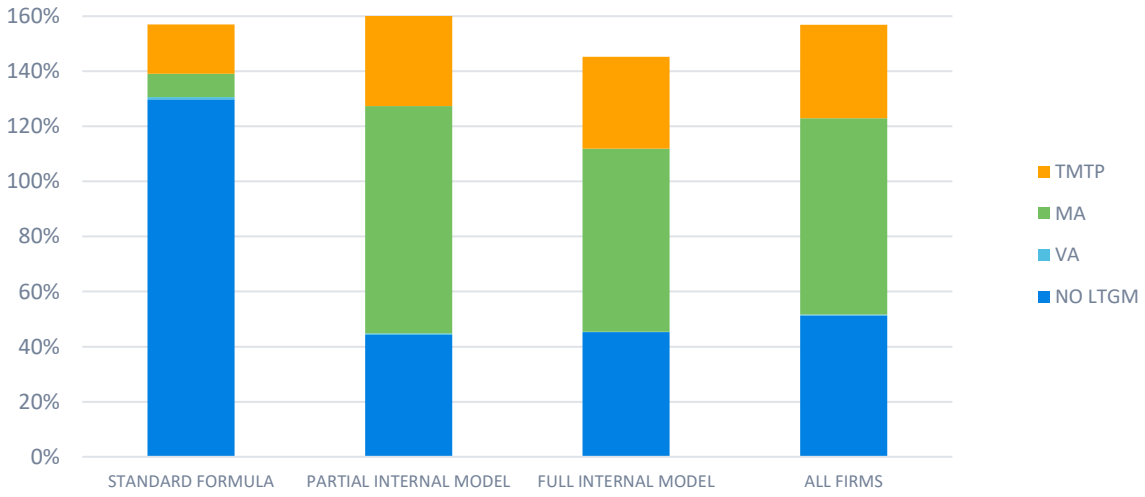
Of the companies in our sample, 14 are using the VA, 17 are using the MA and 22 are using the TMTP as at year-end 2019, with some companies using combinations of the LTGMs as shown in the Venn diagram in Figure 28. Of the UK life companies in our sample, 39 did not use any of the LTGMs. There have been minimal changes in LTGM usage over the year.

FIGURE 28: NUMBER OF COMPANIES USING LONG-TERM GUARANTEE MEASURES



The chart in Figure 29 shows the breakdown of the SCR coverage ratio by each LTGM and the result if no LTGMs were applied as at year-end 2019. The breakdown is shown for SF, PIM and FIM firms, alongside the total across all companies.

FIGURE 29: BREAKDOWN OF SCR COVERAGE RATIO BY LONG-TERM GUARANTEE MEASURE



The general picture seen in Figure 29 is that companies using PIMs and FIMs have similarly high levels of reliance on LTGMs and this drives the results for all firms, as, in general, the companies using PIMs and FIMs tend to be the largest companies. Companies using the SF in general have the least reliance on LTGMs.

The MA makes up the largest proportion of the SCR coverage ratios for FIM and PIM firms, on average accounting for 71 percentage points in total SCR coverage ratio for companies in the UK. This is highest for the PIM firms at 82 percentage points. A number of the companies using a FIM and PIM are the mono-line annuity providers, which is why the benefit of the MA is so material.

The TMTP is the next-largest LTGM, adding on average 34% to the solvency coverage ratio across all companies. The TMTP has proven to be popular in the UK, especially amongst annuity providers, primarily because of the relatively high RM for annuity business compared to other business. On average, the level of benefit provided by the TMTP has remained relative stable over the year, which suggests that although the TMTP runs off over time, the required biennial recalculation of the TMTP has increased the benefit of this LTGM to some firms.

The VA has the lowest impact across all categories, with only very small impacts on SF or PIM firms. On average, it contributes around 0.4% to the SCR coverage ratio across all companies. This is similar to the VA impact shown in the year-end 2018 SFCR results.

The solvency coverage ratio without the LTGM has increased from 47% at year-end 2018 to 51% at year-end 2019. In particular, Standard Formula firms have an average solvency coverage ratio of 130% at year-end 2019 excluding any LTGM, increasing from 11% at year-end 2018.

Conclusion

UK life insurers disclosed healthy results in the year-end 2019 SFCRs, with an average SCR coverage ratio of 156%. No insurers in this report had a coverage ratio of less than 100%, but some had extremely high ratios, depending on a wide range of factors. The matching adjustment (MA) and the transitional measures on technical provisions (TMTP) continue to be popular in the UK, leading to significant increases in the SCR coverage ratio for some companies. Usage of the volatility adjustment (VA) remains very low in the UK, comparative to other European countries.

UK life insurers have an Average SCR Coverage Ratio of **157%**

The analysis of the SFCRs shows that there has been little change to UK life insurers balance sheets relative to year end 2018.

'IL and UL Insurance' business continues to be the dominant product grouping for UK life insurers, when measured by volume of TPs, reinsurance ceded and gross written premiums.

The volume of gross written premiums sold by UK life insurers on a cross-border basis into other countries has decreased significantly over the year, most likely in preparation for the UK exiting the EU.

The most significant risks to UK life insurers continue to be market risk and underwriting risk, which is consistent with what is being seen across Europe. LACTP and LACDT both benefit a number of UK companies when calculating their SCR.

Own funds are primarily invested in tier 1 unrestricted own funds (over 90%), which is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II. Lower levels of capital are primarily only held by the largest companies.

Appendix 1: UK life companies included in the analysis

1. Aberdeen Asset Management Life & Pensions
2. AEGON Scottish Equitable
3. AIG Life
4. Assurant Life
5. Aviva International Insurance
6. Aviva Investors Pensions
7. Aviva Life & Pensions UK
8. BlackRock Life
9. Canada Life
10. Churchill Insurance Company
11. Countrywide Assured
12. Covéa Life
13. Dentists' and General Mutual Benefit Society
14. Dentists' Provident Society
15. Ecclesiastical Life
16. Equitable Life Assurance Society
17. Exeter Friendly Society
18. Family Assurance Friendly Society
19. FIL Life Insurance
20. Forester Life
21. Hodge Life Assurance Company
22. Holloway Friendly
23. HSBC Life (UK)
24. Inceptum Insurance Company
25. Independent Order of Odd Fellows Manchester Unity Friendly Society
26. IntegraLife UK
27. Invesco Perpetual Life
28. JPMorgan Life
29. Just Retirement
30. Kingston Unity Friendly Society
31. Legal & General Assurance (Pensions Management)
32. Legal & General Assurance Society
33. Liverpool Victoria Friendly Society
34. Liverpool Victoria Life Company
35. London General Life Company
36. Managed Pension Funds
37. Mobius Life
38. National Deposit Friendly Society
39. Old Mutual Wealth Life & Pensions
40. Old Mutual Wealth Life Assurance
41. Omnilife Insurance Company
42. Pacific Life Re
43. Partnership Life Assurance Company
44. Pension Insurance Corporation
45. Phoenix Life
46. Phoenix Life Assurance
47. Police Mutual Assurance Society
48. Prudential Pensions
49. ReAssure
50. Rothesay Life
51. Schroder Pensions Management
52. Scottish Friendly Assurance Society
53. Scottish Widows
54. Sheffield Mutual Friendly Society
55. St James's Place UK
56. Standard Life Assurance
57. Standard Life Pension Funds
58. Suffolk Life Annuities
59. Sun Life Assurance Company of Canada (UK)
60. The Ancient Order of Foresters Friendly Society
61. The National Farmers Union Mutual Insurance Society
62. The Prudential Assurance Company
63. The Rechabite Friendly Society
64. The Royal London Mutual Insurance Society
65. The Shepherds Friendly Society
66. Threadneedle Pensions
67. Trafalgar Insurance
68. Transport Friendly Society
69. UBS Asset Management Life
70. Unum
71. Utmost Life & Pensions
72. Vitality Life
73. Wesleyan Assurance
74. Zurich Assurance

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