

MILLIMAN RESEARCH REPORT

Analysis of life insurers' solvency and financial condition reports year-end 2021

European and UK life insurers

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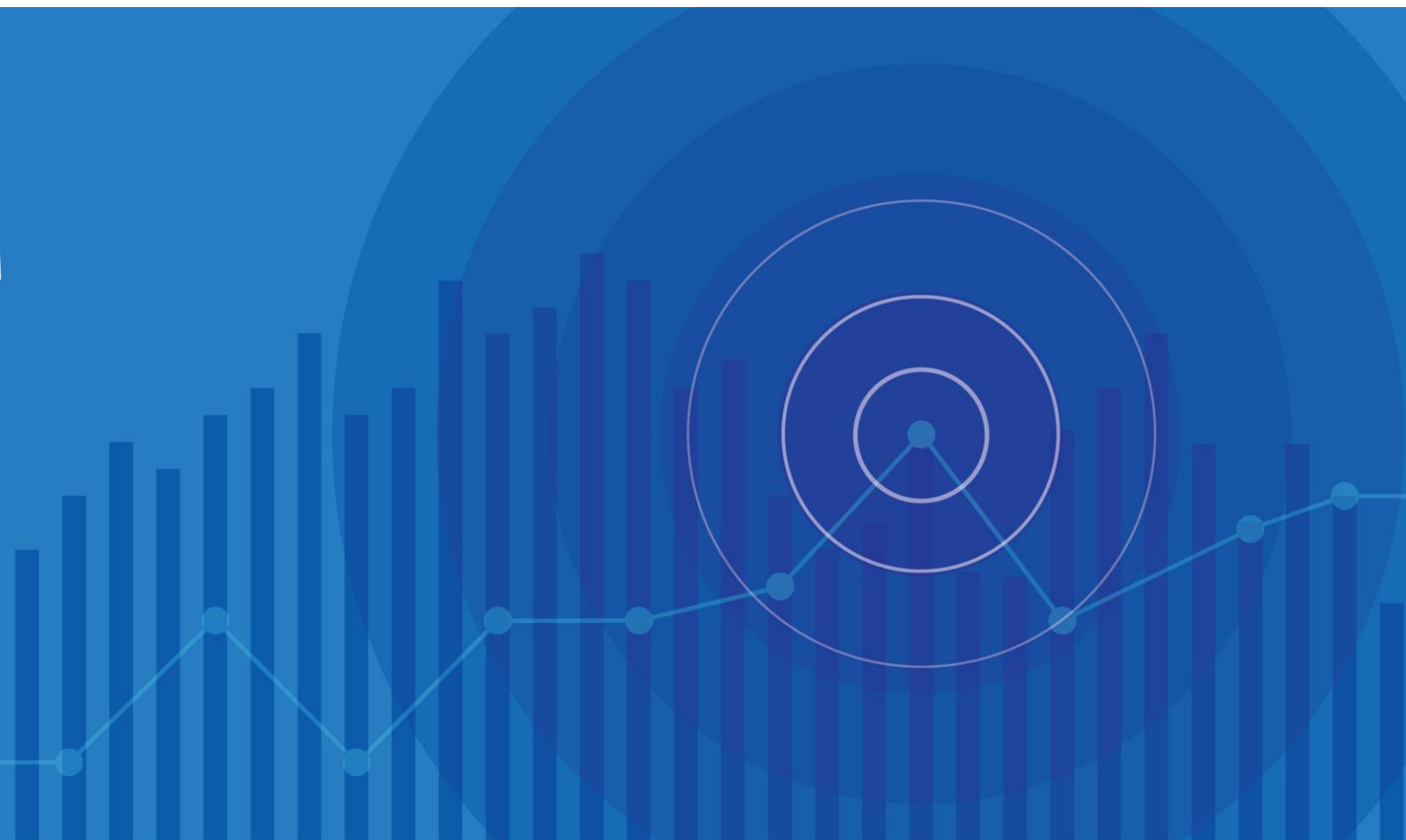


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Introduction

This report focuses on the solvency and financial condition reports (SFCRs) published in 2022 which refer to year-end 2021.¹ The SFCRs contain a significant amount of information on each of 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.

EUROPEAN MARKET COVERAGE

Our analysis of the European life insurance market covers 690 companies from 31 countries and 2 territories, representing approximately £725 billion (€861 billion²) of gross written premium (GWP) and approximately £7.769 trillion (€9.237 trillion) of gross technical provisions (TPs). This represents a 5% decrease in the number of companies and a 1% decrease in gross TPs³ relative to our year-end 2020 report on the SFCRs of life insurers. This analysis does, however, represent an 8% increase in the level of GWP relative to our previous report. This suggests that overall sales of life insurance were higher in 2021 when compared to 2020. This is supported by data published by European Insurance and Occupational Pensions Authority (EIOPA) and is likely driven primarily by firms recovering from the impacts of the COVID-19 pandemic during 2020.

The countries and territories included in the analysis are as follows, with some countries grouped into broad territories:

- | | | |
|--------------------------------|-------------------------------------|--------------------------------|
| ▪ Austria (AT) ^{ROE} | ▪ Gibraltar (GI) ^{ROE} | ▪ Malta (MT) ^{ROE} |
| ▪ Belgium (BE) | ▪ Greece (EL) ^{ROE} | ▪ Netherlands (NL) |
| ▪ Bulgaria (BG) ^{CEE} | ▪ Guernsey (GG) ^{ROE} | ▪ Norway (NO) ^{NOR} |
| ▪ Croatia (HR) ^{CEE} | ▪ Hungary (HU) ^{CEE} | ▪ Poland (PL) ^{CEE} |
| ▪ Cyprus (CY) ^{ROE} | ▪ Iceland (IS) ^{NOR} | ▪ Portugal (PT) ^{ROE} |
| ▪ Czechia (CZ) ^{CEE} | ▪ Ireland (IE) | ▪ Romania (RO) ^{CEE} |
| ▪ Denmark (DK) ^{NOR} | ▪ Italy (IT) | ▪ Slovakia (SK) ^{CEE} |
| ▪ Estonia (EE) ^{CEE} | ▪ Latvia (LV) ^{CEE} | ▪ Slovenia (SI) ^{CEE} |
| ▪ Finland (FI) ^{NOR} | ▪ Liechtenstein (LI) ^{ROE} | ▪ Spain (ES) |
| ▪ France (FR) | ▪ Lithuania (LT) ^{CEE} | ▪ Sweden (SE) ^{NOR} |
| ▪ Germany (DE) | ▪ Luxembourg (LU) | ▪ 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 by volume of TPs. The remainder of the nations are split into three categories: the Nordics (NOR), Central and Eastern Europe (CEE) and the Rest of Europe (ROE). NOR and CEE are well-defined geopolitical groupings while ROE includes the remaining nations and territories not captured within the other categories used in our analysis.

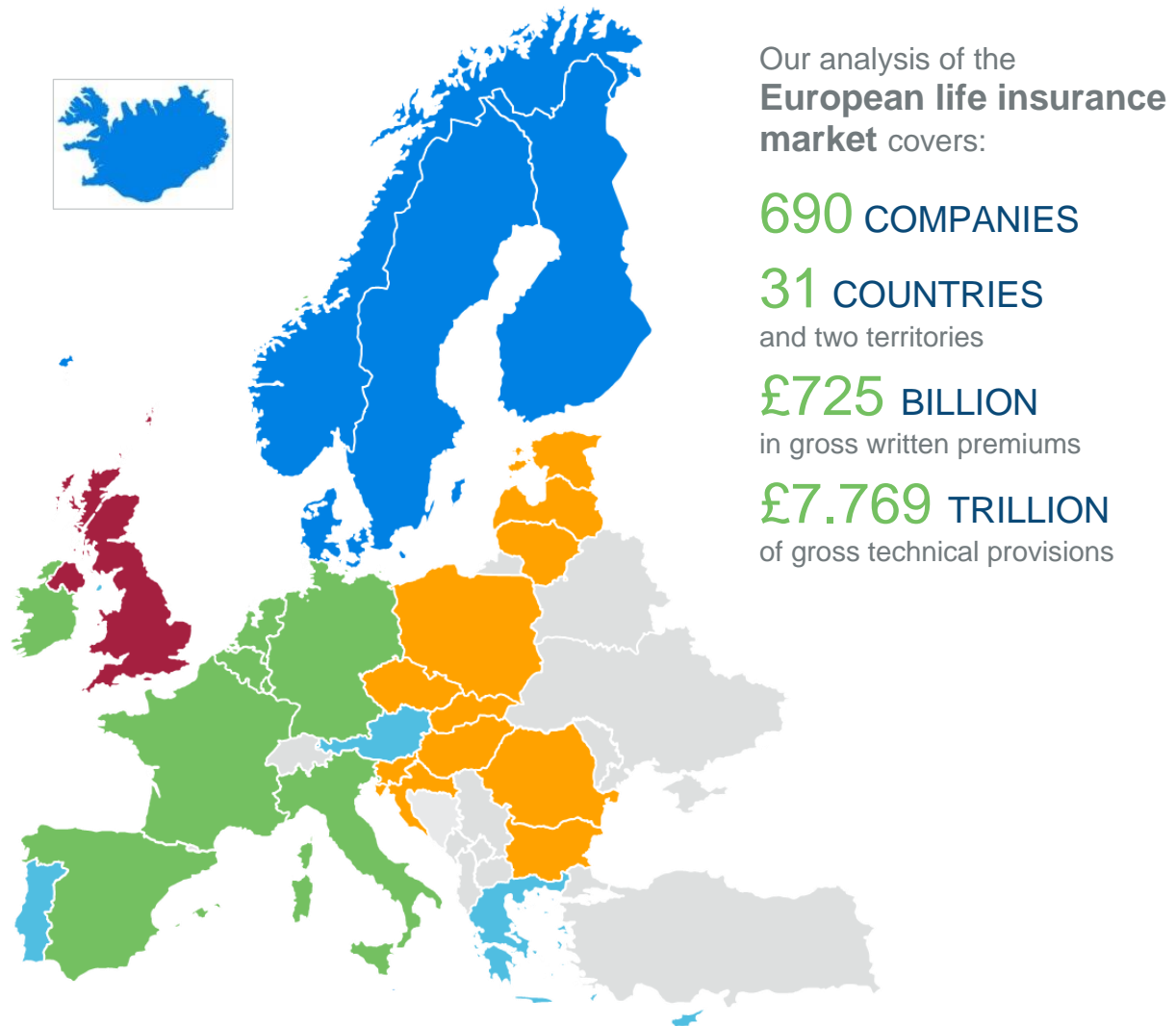
Figure 1 shows the geographical coverage of this report. The UK is highlighted in red and the remaining eight large European markets are shown in green. The remaining categories are shown as dark blue for the NOR, orange for CEE and light blue for the ROE.

¹ These SFCRs are referred to as the year-end 2021 SFCRs throughout this report as the reporting date for most companies included in the samples is 31 December 2021. There are a small number of companies included in the sample that had a reporting date other than 31 December 2021.

² GBP:EUR exchange rate of 1:1.19 for year-end 2021. An exchange rate of 1.12 is used for year-end 2020 figures. These figures are rounded to three significant figures.

³ Since the GBP:EUR exchange rate has increased from 1:1.12 to 1:1.19 since year-end 2020, the gross TPs as quoted in EUR have increased over the year, despite there being a decrease in the GBP figure.

FIGURE 1: EUROPEAN COUNTRIES INCLUDED IN THE ANALYSIS



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, 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 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>.

EIOPA REVIEW OF SOLVENCY II

In 2020, the European Commission (EC) issued a call for technical advice to the EIOPA on the review of the Solvency II Directive. The EC has adopted a comprehensive review of the Solvency II rules taking advice from the recommendations provided by the EIOPA.

One of the areas under review was the current supervisory reporting and public disclosure requirements, including the QRTs and the SFCR. At the time of publication, the EC has set out its proposals which are subject to further review and discussion by the European Council and Parliament. These changes, if accepted, will have an impact on future published SFCRs and on the data contained within them. The proposals put forward by the EC are broadly consistent with EIOPA's and are intended to ensure that the SFCR remains fit for purpose by all stakeholders that use the document. Some of the highlights from the proposals in relation to the SFCR are:

- To consider the needs of different stakeholders and the different levels of expertise of professional and non-professional readers, by splitting 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 other areas.
- An extension to the reporting deadline for solo SFCRs by four weeks from 14 weeks to 18 weeks, and for the group SFCRs by four weeks from 20 weeks to 24 weeks.
- Inclusion of the following sensitivities showing the impacts on the Own Funds, Solvency Capital Requirement (SCR) and SCR coverage ratio within the SFCR:
 - Equity markets $\pm 25\%$
 - Risk-free interest rates $\pm 50\text{bps}$
 - Credit spreads of fixed-income investments $\pm 50\text{bps}$
 - Property values $\pm 25\%$
- 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 with individual member states able to require the audit of additional items. The EC has stated that it would recommend exempting low-risk profile insurers from this requirement on proportionality grounds.
- Additional information included within the SFCR on topics such as: sustainability risks; environmental, social and governance (ESG) factors and climate change issues. There will also be more explicit reporting of the impact of long-term guarantee measures (LTGMs).
- The EC has further proposed that publication of a full SFCR would not be required by low-risk profile insurers each year and instead such firms would report a full SFCR every three years and a simplified disclosure for the other years.

Any changes to the European Solvency II regulations by the EC would not be applicable to the UK and consequently may not be adopted by the Prudential Regulation Authority (PRA) as part of the UK Solvency II regime. Therefore, diversions between the two regimes may arise in the future.

The changes are expected to come into effect by 2024 at the earliest, however, the exact date of implementation has yet to be confirmed and some of the proposed changes may be subject to transitional arrangements.

UK REVIEW OF SOLVENCY II

Since 1 January 2021, the UK insurance market is no longer regulated by EIOPA and has only been regulated by the PRA and the Financial Conduct Authority (FCA). Since the UK's exit from the European Union, the PRA has had the ability to make changes and design its own insurance regulatory regime.

This has led to some diversions between the European and UK Solvency II regimes, with further diversions likely to arise in the future between the UK and European markets adopting different amendments to their regimes.

One notable publication over the year has been a review of the current application of Solvency II in the UK by His Majesty's Treasury (HMT).⁴ This review and the subsequent PRA Quantitative Impact Study (QIS) focussed on a few key areas:

- Risk Margin – with a view to reducing the risk margin for long-term life insurers by around 60% to 70%
- Matching Adjustment – including a reassessment of the fundamental spread
- Increasing investment flexibility – increasing the ability of firms to invest in long-term assets
- Reducing reporting and administrative burdens

Following this initial review, the PRA explained which combinations of the above potential reforms it considered to be consistent with its statutory objectives, and which it did not. The PRA's view⁵ was that decisions on changes to the risk margin need to be considered parallel to decisions on the fundamental spread. Some of the highlights from the PRA's view on the review are:

- The risk margin should be reformed to deal with concerns that it is too sensitive to movements in interest rates and too high when interest rates are low. A modification of the current cost-of-capital approach to setting Risk Margin was the preferred approach.
- The current fundamental spread design does not appropriately reflect the risks retained by insurers. To adequately reflect the risks faced by insurers, the fundamental spread should include an explicit allowance for a credit risk premium
- The combination of the above reforms could reduce overall capital levels for life insurers by around 10% to 15%.

At the time of writing there have been no amendments to the UK Solvency II regime as a result of the HMT review, although there have been some changes to the UK Solvency II regime relating to the published yield curves and symmetric adjustment as well as minor changes to the QRTs.⁶ The exact date of future reforms resulting from the HMT review, should they take place, has yet to be confirmed. It is not expected that significant reforms would be implemented ahead of year-end 2022, however minor amendments could be made.

⁴ Review of Solvency II: Consultancy. HM Treasury. April 2022. Retrieved on September 15, 2022, from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1071899/20220328_Review_of_Solvency_II_Consultation.pdf

⁵ The PRA's statement on the 'Review of Solvency II' consultation published by HM Treasury. Bank of England. 28 April 2022. Retrieved on September 15, 2022, from <https://www.bankofengland.co.uk/prudential-regulation/publication/2022/april/pras-statement-on-the-review-of-solvency-ii-consultation-published-by-hm-treasury>

⁶ Christy, Neil. PS29/21 Review of Solvency II: Reporting (Phase 1). Milliman. Retrieved on September 15, 2022, from <https://uk.milliman.com/en-GB/insight/ps2921-review-of-solvency-ii-reporting-phase-1>

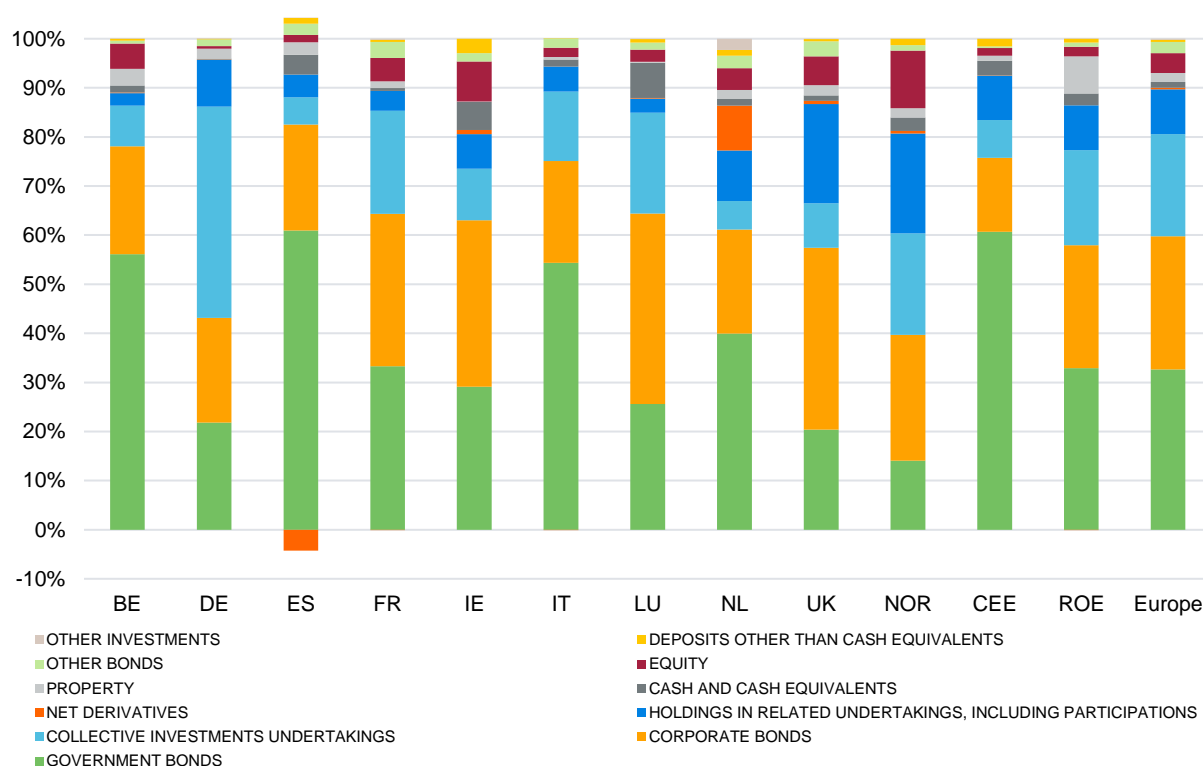
Section 1: Analysis of European life insurers

Analysis of balance sheet

ASSETS

Figure 2 shows the split of financial investments held by life insurers across European countries at year-end 2021, with the total figure for all countries and territories in our analysis represented in the final bar on the right-hand side of the chart, labelled as 'Europe.' This chart comprises financial investments classified as 'Investments (Other Than Assets Held for Index-linked and Unit-linked Contracts⁷)' and 'Cash and cash equivalents' on the Solvency II balance sheet.⁸

FIGURE 2: SPLIT OF NON-LINKED ASSETS ACROSS EUROPE



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 33% and 27% of total financial investments, respectively. These proportions are approximately the same as those observed at year-end 2020. 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 some countries in CEE (Hungary, Poland and Romania).

GOVERNMENT AND CORPORATE BONDS

account for **33% AND 27%**
of **all financial investments**, respectively

⁷ 'Assets held for Index-linked and Unit-linked Contracts' are excluded as this category provides limited insight into what underlying assets categories the investments are held in. In some jurisdictions this category is significant and leads to the remainder of the bar being quite difficult to read.

⁸ The liability side of derivatives is also included to give the net derivative position.

Investments in collective investment schemes is the next largest category, accounting for a further 21% of total financial investments. In particular, the level of holdings is due to large volumes in Germany (43%) as well as accounting for 21% of holdings in France, Luxembourg and the NOR.

Holdings in related undertakings, including participations, make up only 9% of total European financial investments, but make up a much higher percentage within the UK and the NOR (both 20%). The NOR percentage is driven by large holdings in related undertakings in the Danish market, accounting for 32% of all assets in Denmark.

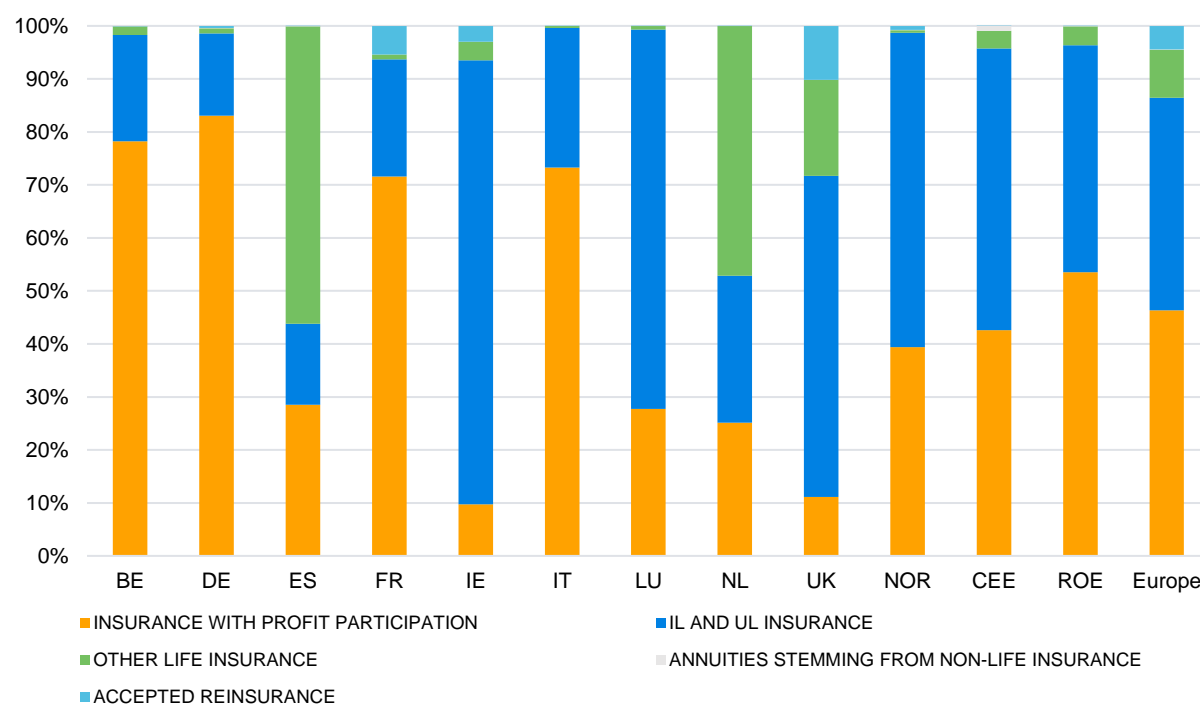
The derivatives shown in Figure 2 represent the net derivative position. Based on the companies in our sample, a few have net negative positions, meaning that on average the value of derivative liabilities is greater than the value of derivative assets on the Solvency II balance sheet. This is particularly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

The remaining asset classes such as cash and cash equivalents, equity, property and other smaller asset classes, only total around 10% of all assets held by European life insurers. There are some regions in our analysis which do make significant use of some of these asset classes including 28% of all assets in Swedish life insurers being invested in equities, while Gibraltar holds 42% of all its investments in cash and cash equivalents.

LIABILITIES

Figure 3 shows the split of TPs by line of business held by life insurers across European countries at year-end 2021.

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



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. The dominant lines of business in each of the nine largest markets as well as the NOR, CEE and ROE have remained unchanged relative to year-end 2020 results.

46% OF TOTAL TPs for European life insurers are 'Insurance with Profit Participation'

As a result of this dominance, these two lines of business represent the largest proportion of TPs across Europe on average. In aggregate, across our sample of European countries, 'Insurance with Profit Participation' makes up just under half of the total TPs for life insurers (46%). 'IL and UL Insurance' makes up the second-largest portion of TPs (40%).

'Other Life Insurance' (9%), 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.

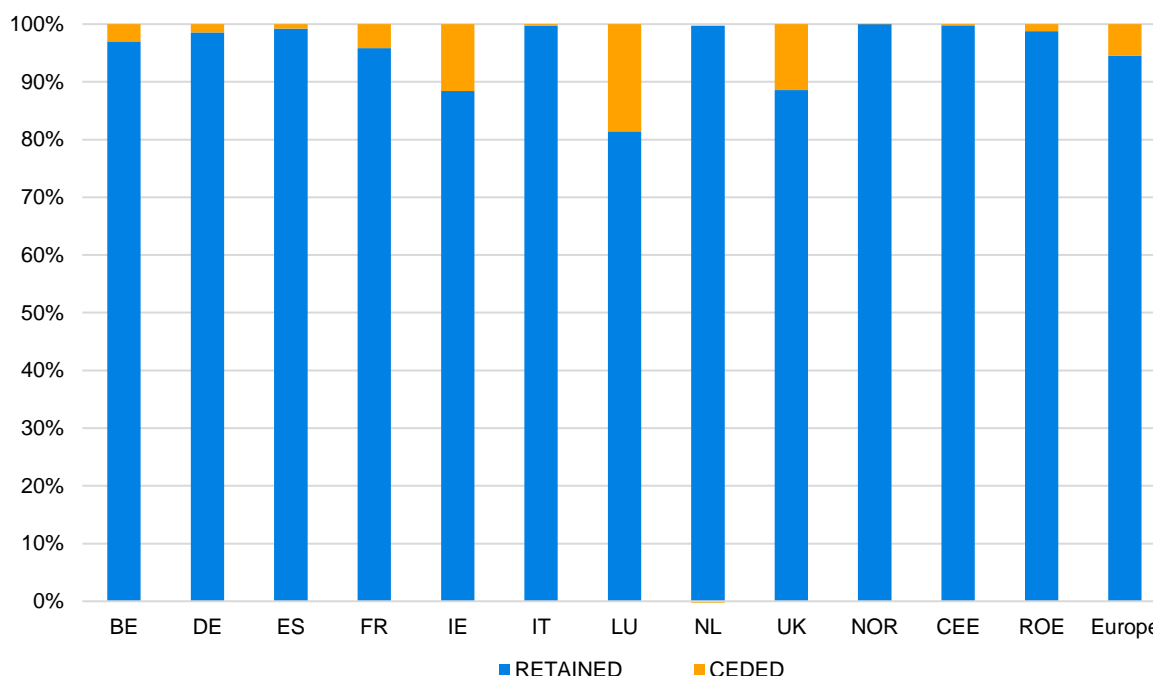
TPs in respect of 'Health Similar to Life Techniques' (HSLT) business have been excluded from Figure 3, as these lines of business are very small on average across the sample of companies considered in the analysis.

Since the previous set of SFCRs was published, the market shares 'Insurance with Profit Participation' has reduced by three percentage points while 'Other Life Insurance' has reduced by one percentage point. These reductions have been met by an increase in the proportion of 'IL and UL Insurance' of four percentage points. This suggests a shift away from selling new 'Insurance with Profit Participation' and 'Other Life Insurance' products towards 'IL and UL Insurance' products. This is a trend we have observed over the past few years of our analysis.

REINSURANCE

Figure 4 shows how the use of reinsurance varies across European countries at year-end 2021. 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



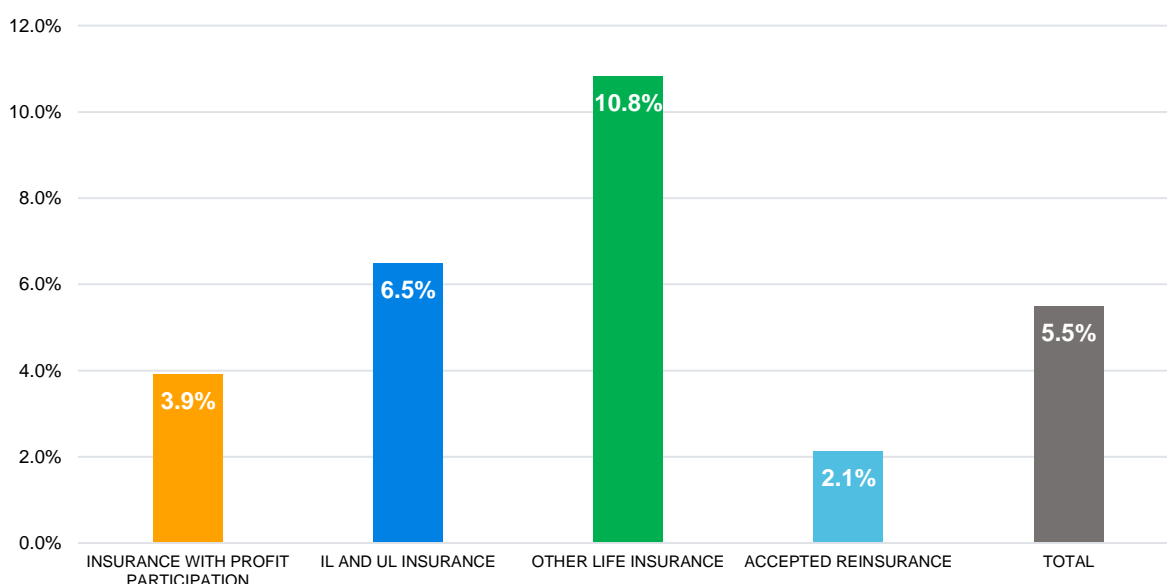
On average, about 5.5% of the BEL is reinsured across Europe based on the companies in our sample which also include reinsurers. This varies by country, with Luxembourg (18.6% of BEL reinsured), Ireland (11.6%) and the UK (11.4%) being the most reliant on reinsurance of the individual countries analysed. Overall, the percentage of the BEL that is reinsured has increased marginally since the last set of SFCRs were published, with 5.2% of the BEL reinsured across European life insurers at year-end 2020.

On average,
5.5% of the BEL of life insurers
 is REINSURED ACROSS EUROPE

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 risk margin (RM).

Figure 5 shows the proportion of each line of business that is reinsured by European life insurers at year-end 2021.

FIGURE 5: PERCENTAGE OF TECHNICAL PROVISIONS WITH REINSURANCE



The line of business with the highest ceded level of reinsurance is 'Other Life Insurance' at 10.8%. This is considerably higher than the second-largest ceded percentage, which is 'IL and UL Insurance' at 6.5%. 'Insurance With Profit Participation' and 'Accepted Reinsurance' reinsure 3.9% and 2.1%, respectively.

Overall, the European life insurance industry has life reinsurance recoverables of £419 billion (€498 billion) across all life TPs in our sample. The results suggest an increase in the proportion of life insurers BEL reinsured over the year, and in particular:

- Despite the slight decrease in the GBP amount of life TPs (reduction of 1%) over the year there was a 6% increase in the proportion life insurers BEL reinsured.
- Considering the EUR figures, the life reinsurance recoverables have increased from €444 billion to €498 billion, representing an increase of 12%, while the life TPs have increased from €8,750 billion to €9,237 billion, representing an increase of 6%.

Analysis of premiums

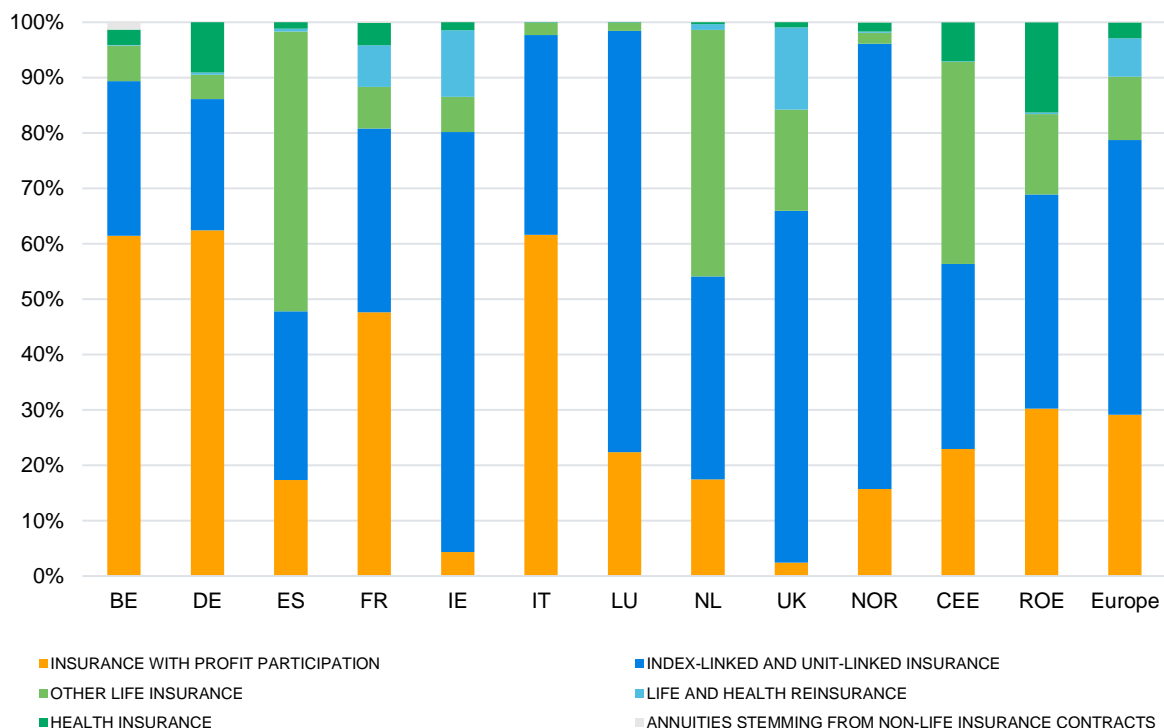
When considering premium volumes for 2021, we first looked at the figures quoted by EIOPA in their published insurance statistics.⁹ Comparing the life insurance GWP figures quoted by EIOPA in 2021 (£594 billion/€707 billion) to those for 2020 (£551 billion/€619 billion)¹⁰ we see that there has been an increase in both euro and GBP denominated premium levels relative to last year. The movement in euro (EUR) is larger due to the increase in the exchange rate of GBP:EUR over the year from 1.12 to 1.19. Comparing the EIOPA figures to our sample shows that around 84% of all life insurance GWP reported by EIOPA in 2021 is captured within our sample. This is a reduction when compared to our year-end 2020 analysis which covered around 90% of GWP reported by EIOPA.

It is perhaps unsurprising that the overall volume of GWP increased in 2021 given that firms were recovering from the impacts of the COVID-19 pandemic on financial markets during 2020. However, some markets such as Germany and Italy saw an overall decrease in the life insurance GWP compared to 2020 in our analysis:

- In Germany, the decrease is driven predominantly by the decrease in GWP of one large life insurer. That decline compared to the previous year is due to the ongoing zero- and negative-interest rate environment, which led the insurer to deliberately refrain from certain single-premium business in 2021, leading to lower new business volumes.
- In Italy, this decrease is driven predominantly by three firms who were included in our analysis at year-end 2020 but not for year-end 2021 due to SFCR information being unavailable. This is a consequence of the sales of Aviva Vita and Lombarda Vita in April 2021, as well as Eurovita's 2021 QRTs being reported in the Group-level SFCR of Eurovita Holdings S.p.A. only and consequently reporting no solo SFCR information.

Figure 6 shows the split of GWP by line of business held by life insurers across European countries at year-end 2021 based on our analysis. 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



⁹ https://www.eiopa.europa.eu/tools-and-data/insurance-statistics_en

¹⁰ Note that due to the UK's exit from the EU, EIOPA's figures for 2020 and 2021 did not include information on the UK.

The split of premium volumes by line of business is slightly different from the split of TPs shown in Figure 3. On average across our entire sample, 'Insurance with Profit Participation' (29%) and 'IL and UL Insurance' (50%) make up the largest portions of premium volumes. This contrasts with the split of TPs where 'Insurance with Profit Participation' has the largest share of the market, followed by 'IL and UL Insurance'. This was also noted in our previous report, where it was suggested that 'IL and UL Insurance' was likely to increase its share of the market going forward due to higher premium volumes being sold in this category compared to 'Insurance with Profit Participation.' This conclusion aligns with the decrease in the proportion of TPs categorised as 'Insurance with Profit Participation', and the slight increase in 'IL and UL Insurance' since year-end 2020.

'INDEX-LINKED AND UNIT-LINKED INSURANCE' 50%

account for the largest volume of gross written premiums

When comparing to the year-end 2020 SFCRs, there has been a reduction in the proportion of GWP attributable to 'Insurance with Profit Participation' (32% at year-end 2020; 29% at year-end 2021), while there has been an increase in the proportion attributable to 'IL and UL Insurance' (45% at year-end 2020; 50% at year-end 2021). This is in line with what we are observing in the markets across Europe where many firms are promoting 'IL and UL Insurance' over 'Insurance with Profit Participation' due to the sustained low interest rate environment and the effect this has on the ability to declare future bonuses. Now that interest rates across Europe are beginning to rise again it will be interesting to observe if there are any changes to this trend in next year's analysis.

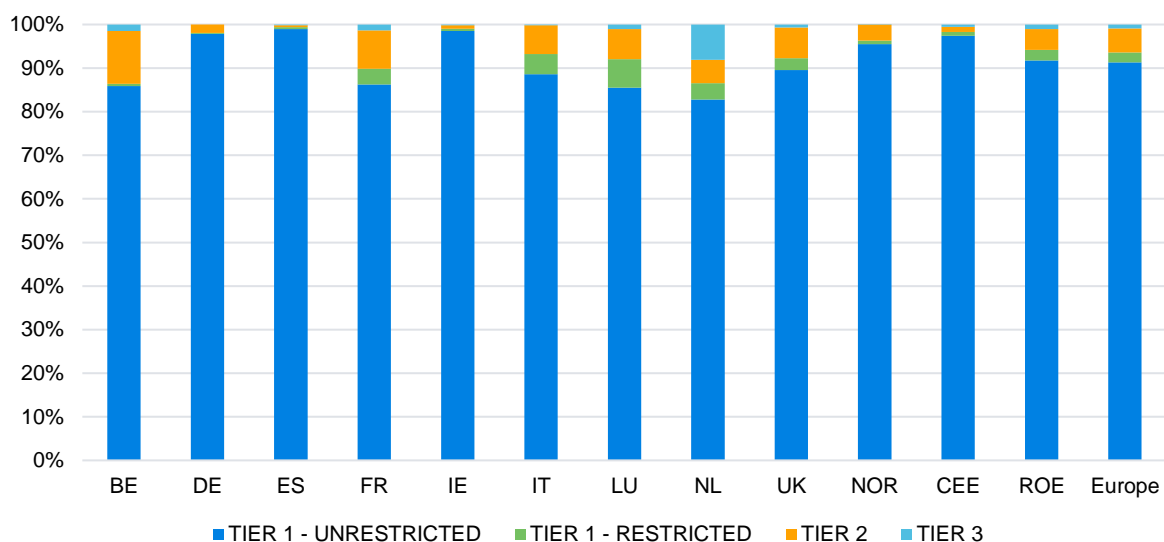
The Spanish and Dutch markets are outliers when looking at the split of GWP, with 'Other Life Insurance' making up the highest proportion in these countries—consistent with the results seen in our TP analysis. 'Other Life Insurance' has been the dominant line of business in Spain and the Netherlands in past years of our analysis and includes products such as annuities, term cover and protection where these have no profit sharing or linked elements.

Overall, the breakdown for each of the markets remains relatively consistent when compared to our year-end 2020 analysis of SFCRs.

Analysis of own funds

Figure 7 shows the split of own funds across European countries at year-end 2021.

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 proportion of tier 1 unrestricted own funds, with all countries reporting at least three quarters¹¹ of their own funds as tier 1 unrestricted.

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 and France have the highest proportion of tier 2 own funds when compared to other large European countries, with tier 2 own funds accounting for 12% of total own funds in Belgium and 9% in France. The tier 2 own funds are primarily in respect of hybrid debt and subordinated loans in these markets.

Tier 3 own funds are held predominantly in the Netherlands and France, which together account for 73% of all tier 3 own funds. Net deferred tax assets remain the main item categorised as tier 3 own funds.

Although it cannot be seen individually on the chart, Norway is an outlier when it comes to the breakdown of own funds by tier. Norwegian firms report 20% as tier 2, compared to the European average of 6%. Subordinated liabilities are the major driver of the high levels of tier 2 own funds in Norway.

There has been, overall, little to no change in the breakdown of own funds by tier when compared to year-end 2020 SFCRs, with an increase in the total absolute amount of own funds of around 2%. This is driven by an increase of 3% in tier 1 own funds (both restricted and unrestricted), due to it being the dominant form of capital in the reported own funds. The absolute amounts of tier 2 and tier 3 own funds have, however, decreased by 7% and 11%, respectively, since our year-end 2020 analysis. This could represent a reversal of the trend seen in previous years, however it is still too early to tell.

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

¹¹ The lowest proportion of tier 1 unrestricted own funds was observed in Norway (77%).

Analysis of solvency coverage

Figure 8 shows the weighted average solvency coverage ratios¹² 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	192%	437%	254%	241%	200%	245%	159%	200%	162%	259%	229%	237%	240%
RATIO OF ELIGIBLE OWN FUNDS TO MCR	389%	1001%	712%	522%	536%	523%	424%	434%	536%	867%	659%	706%	613%

Overall, the average solvency coverage ratios for European life insurers are more than double the Solvency II requirement, with the weighted averages significantly in excess of the required solvency coverage ratio of 100% in all the regions considered. The European average SCR coverage ratio is 240% based on the companies included in our sample (an increase from the 223% observed at year-end 2020). Almost all countries in our sample saw an increase in the weighted average solvency coverage in their market with the largest increases noted in Germany (+74% versus year-end 2020), Ireland (+32%), ROE (+19%) and France (+19%). In Germany, this large increase was predominantly driven by some of the largest firms seeing significant decreases in solvency capital requirements over the year relative to smaller decreases in, or even increases in, the firms' eligible own funds over the same period. The increase in Ireland is also driven by SCRs on average decreasing by more than own funds over the year. However, we do also note that the increase could be caused by differences in the sample for Ireland as not all companies that were included last year are included this year. For example, the addition of SCOR Life Ireland in this year's analysis has contributed +12% to the average solvency coverage in Ireland.¹³ The only regions that saw a decrease in SCR coverage ratio over the year were CEE (-11%) and Luxembourg (-8%). In CEE, this decrease was driven by a larger relative decrease in own funds relative to the level of SCR. There was an 11% decrease to own funds in CEE, while there was a 7% decrease in SCR. The countries that contributed most to the overall SCR coverage decrease for CEE were Czechia, Hungary and Poland.

The increase in solvency coverage between year-end 2020 and year-end 2021 is likely driven in part by the recovery of firms from the impacts of the COVID-19 pandemic in 2020. In fact, overall levels of capital have recovered to a higher level than seen immediately prior to the pandemic, with the European average SCR coverage ratio increasing from 232% at year-end 2019 to 240% at year-end 2021.

The average European SCR coverage ratio **240%**
for year-end 2021 is

The average MCR coverage ratio for year-end 2020 is 613%. This has moved similarly to the SCR coverage ratio over the year, increasing from 563%.

Figure 9 shows the distribution of the SCR coverage ratio by country at year-end 2021. The chart shows the maximum coverage ratio in green, the minimum in orange and the median in blue. The median is a different average measure from the weighted average solvency coverage used in Figure 8 and consequently the two values will not necessarily be the same for each jurisdiction.

¹² 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.

¹³ SCOR Life Ireland had previously not been included from our analysis at year-end 2020.

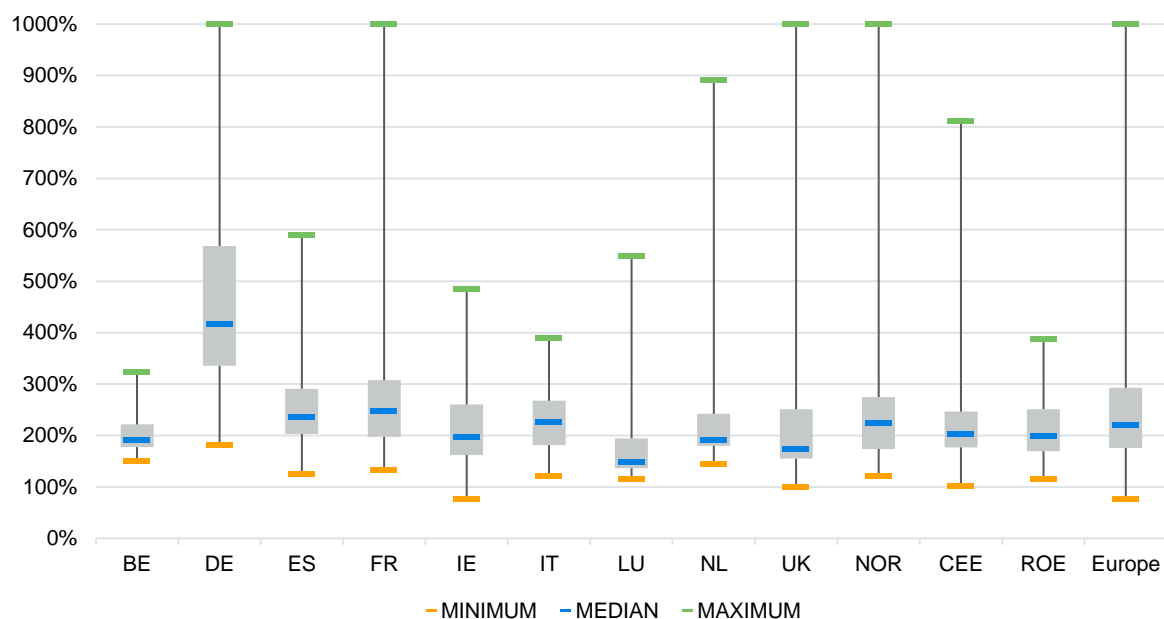
FIGURE 9: DISTRIBUTION OF SCR COVERAGE RATIO BY COUNTRY¹⁴

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, France and Germany, where the number of companies included in our analysis is high. The full ranges cannot be seen on the chart due to the SCR coverage ratios over 1,000% being excluded.

Germany has the highest median solvency coverage ratios in Europe at 417%. The second highest is Denmark at 271% (included in NOR), followed by France with the third highest at 248%.

Based on the life companies included in our analysis, there was one Irish insurer with an SCR coverage ratio below 100% at year-end 2021. This firm has seen its financial situation deteriorate in recent years due to a lack of new business, poor claims experience and lack of support from its parent company, resulting in a decline in both the SCR and MCR to levels below 100% at year-end 2021. The firm's board, after agreeing that there was a lack of options available to return its finances to Solvency II compliance, decided that its primary objective would be an orderly wind-up of its operations.

The second lowest SCR coverage ratio was 100% in respect of one company in the UK, which also reported 100% SCR coverage at year-end 2020. This is due to the company restricting own funds such that the company's own funds equal its SCR. All other firms in our analysis reported an excess of own funds over their SCR.

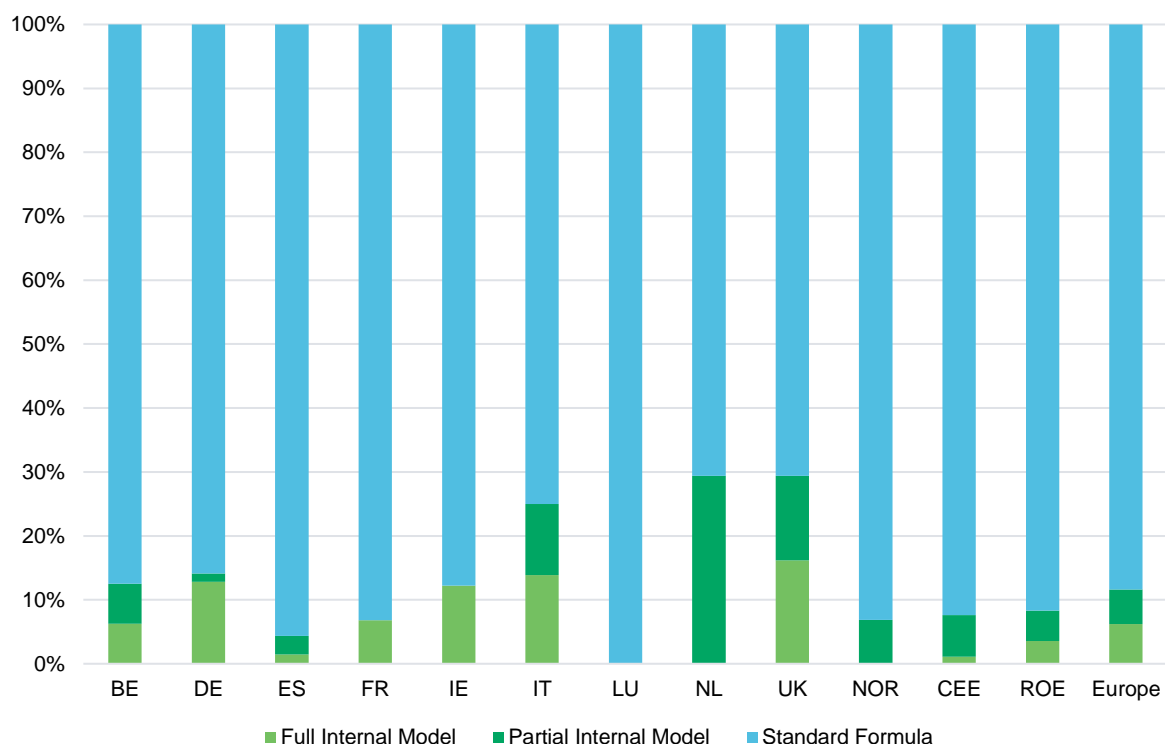
Figure 9 shows a maximum SCR coverage ratio of 1,000% in the markets where the highest solvency coverage is in excess of this. This means that the chart excludes nine companies that reported SCR coverage ratios in excess of 1,000% (four in the UK, three in Germany, one in France and one in Denmark). The highest of these companies was from the UK and it reported an SCR coverage ratio of 2,941%. It should be noted that the majority of firms with SCR coverage ratio over 1,000% are very small.

The range of the SCR coverage ratios is comparable to that seen in the 2020 year-end SFCRs despite an overall increase in the median solvency coverage from 211% to 221%, which we believe is partly because of firms recovering from the impacts of the COVID-19 pandemic on the European life insurance industry.

Figure 10 shows the relative uses of the Standard Formula, Partial Internal Model (PIM) and Full Internal Model (FIM) to calculate the SCR in the various jurisdictions considered in our analysis. Any firms making use of undertaking-specific parameters (USP) have been included with the Standard Formula companies. Standard Formula firms are shown in blue, PIM firms in dark green and FIM firms in light green.

¹⁴ 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, three in Germany, one in France and one in Denmark.

FIGURE 10: SPLIT OF CALCULATION METHOD FOR THE SCR BY COUNTRY



Use of FIMs has proved to be most popular in the UK, Italy, Germany and Ireland, with 16%, 14%, 13% and 12% of companies included in our sample respectively making use of this calculation method. Across Europe 6% of firms are using a FIM to calculate the SCR.

The Netherlands, the UK and Italy dominate approvals for PIMs. In the Netherlands 29% of all firms in our sample make use of a PIM despite no firms reporting the use of a FIM in that market. Across Europe 5% of firms are using a PIM to calculate the SCR.

Out of the 690 companies included in our analysis, 610 are companies that report under the Solvency II Standard Formula (88%). Of the remaining 80 companies (12%), 37 companies were using a PIM, while 43 companies were using FIMs.

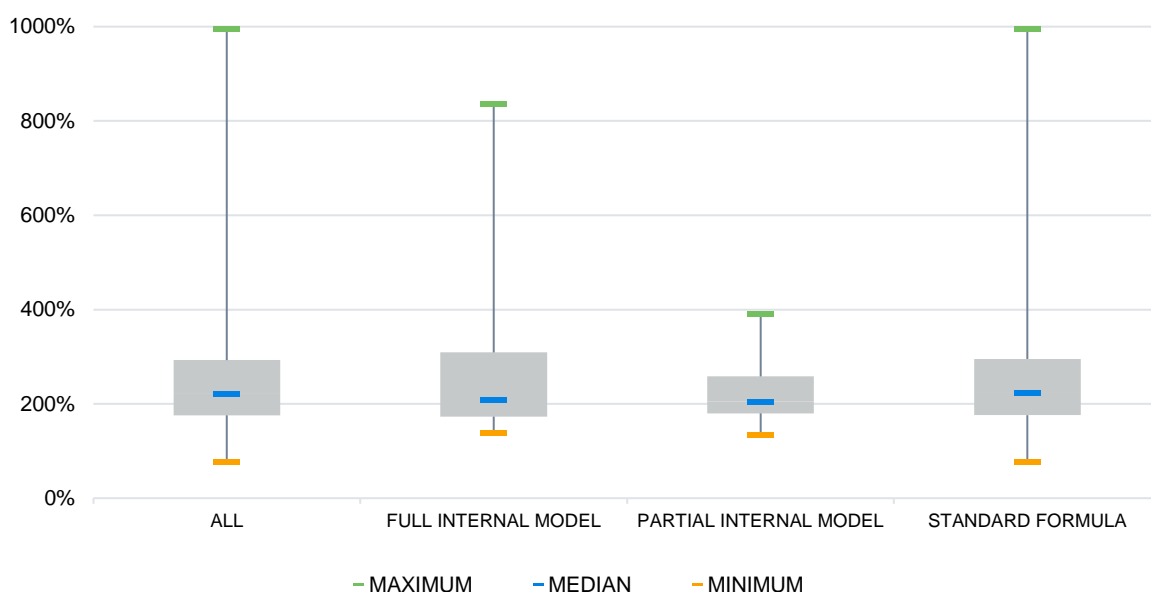
Most of the largest European markets report the use of some firms with PIM or FIM approval, except for Luxembourg where all firms report using the Standard Formula. The remaining European market of NOR, CEE and ROE generally report lower usage of PIMs and FIMs relative to the largest European markets.

Since our previous analysis at year-end 2020, we note five firms moving from using a PIM to using a FIM, four of which were in Germany and the other in Spain. This is common for firms seeking to use a FIM where they gain approval for a PIM prior to FIM approval to ease the regulatory burden of the Internal Model Approval Process (IMAP).

There were no instances of firms moving to the Standard Formula over the year when previously reporting using either a PIM or a FIM.

Figure 11a shows a split of the SCR coverage ratio distribution by SCR calculation type at year-end 2021. The chart shows the maximum coverage ratio in green, the minimum in orange and the median in blue.

FIGURE 11: DISTRIBUTION OF SCR COVERAGE RATIOS BY SCR CALCULATION METHOD AT YEAR-END 2021



In our year-end 2020 SFCR analysis, we observed that the PIM and FIM companies had tighter distributions when compared to Standard Formula. This broadly remains true at year-end 2021 with the key changes over the year being:

- A reduction in the range and interquartile range for PIM firm.
- An increase in the range and interquartile range for FIM firms. (The interquartile range is now slightly larger for FIM firms than for Standard Formula firms.)

These changes are predominantly driven by the five firms that switched methodology from PIM to FIM over the year. These five firms saw their SCRs reduced heavily by transitioning from a PIM to a FIM, while their own funds reduced by a lower relative amount. Consequently, these firms experienced an average increase in solvency coverage of around 200%, resulting in a wider distribution for FIM companies' SCR coverage ratios for year-end 2021. These firms moving out of the PIM category reduced the number of firms in this category and has resulted in a narrower range.

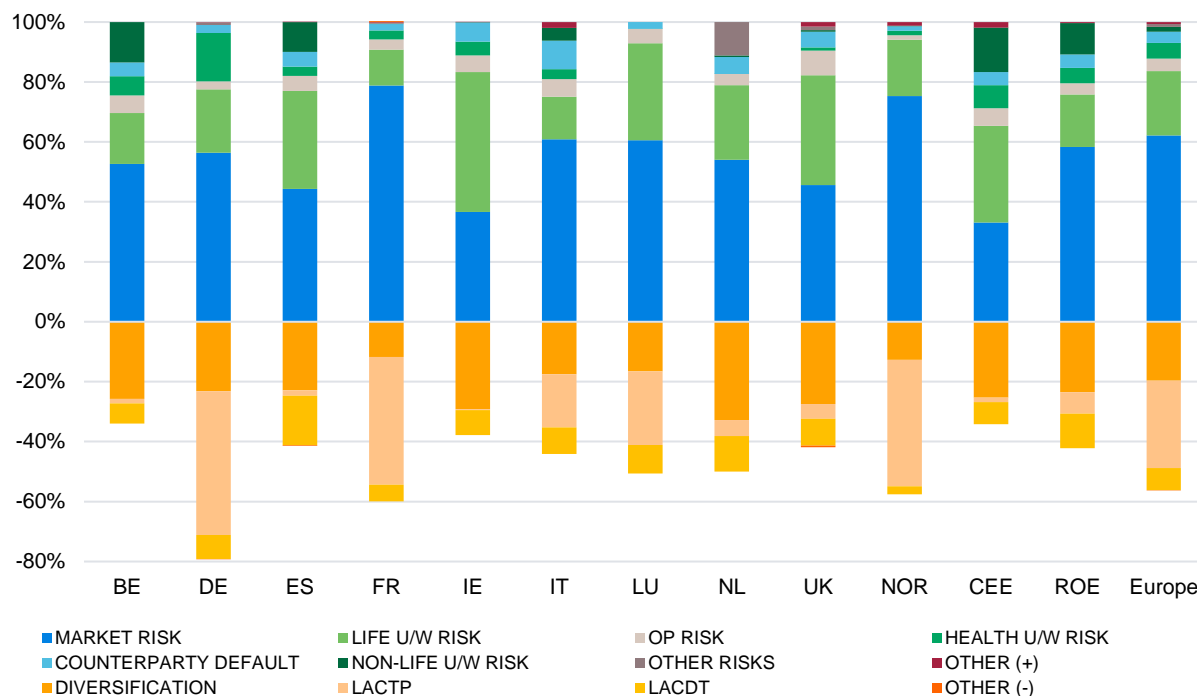
PIM and FIM firms continue to show narrow distributions and slightly lower median SCR coverage ratios than Standard Formula firms, however, it is difficult to draw any inferences from this. Figure 11 does suggest that capital may be more closely managed in companies with a PIM and also, somewhat, by those using 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 our conclusions drawn from previous SFCR results, albeit with a notable increase in the distribution of FIM firms this year.

As in Figure 9, SCR coverage ratios in excess of 1,000% have been excluded from the chart. Of the nine companies in the 2021 sample with solvency coverage ratios in excess of 1,000%, seven are classified as Standard Formula firms, one uses a PIM and the other uses a FIM. This differs from year-end 2020 where all firms reporting an SCR coverage ratio in excess of 1,000% used the Standard Formula.

Analysis of SCR

Figure 12 shows the breakdown of the SCR by risk module for companies across Europe at year-end 2021, with the European average represented in the last bar on the chart, labelled as 'Europe.'

FIGURE 12: BREAKDOWN OF SCR BY COUNTRY¹⁵



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 (62%) for life insurers. This is an increase in proportion from the 59% shown in the year-end 2020 SFCR analysis, however market risk has remained the risk accounting for the highest proportion of SCR.

Life underwriting risk makes up the second-largest portion (21%). The highest proportion of the undiversified SCR in Ireland is represented by life underwriting risk (47%), while for all other regions market risk is the largest proportion. Last year, the highest proportion of the undiversified SCR in the Netherlands was in respect of life underwriting risk (43%), while this year the proportion has dropped to 25%, due to a reclassification of risk type.¹⁶

The remainder of the undiversified SCR is mostly made up of health underwriting risk (5%), operational risk (4%) and counterparty default risk (4%). Non-life underwriting risk, other risks (including intangible asset risk and underwriting risk that has not been specified as life, non-life or health) and other positive adjustments make up the remainder, accounting for around 2%, 1% and 1%, respectively.

¹⁵ 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.

¹⁶ This significant decrease has been driven by the one large firm changing the categorization of its underwriting risks from reporting a life underwriting risk of approximately £4.5 billion last year, and subsequently reporting a figure of zero this year. This year the risk was reported more generically as underwriting risk which is not broken out into life, health and non-life risks. This method of categorisation was previously used by this firm in the year-end 2019 SFCR analysis and has resulted in a year-on-year fluctuation in the data we have analysed for this report. Underwriting risk which is not specified as life, health or non-life is categorised under our 'Other Risks' category.

In countries such as Spain, Belgium and countries in the CEE and ROE categories,¹⁷ 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 in respect of non-life underwriting risk relative to other regions, as a result. In last year's analysis, Ireland also showed a greater proportion of non-life underwriting risk (6%).

The diversification of risk results in a reduction of 20% of the undiversified SCR on average across Europe, unchanged from the level of diversification seen at year-end 2020. This is diversification between the risk modules and not within the risk modules (which most companies do not disclose in their SFCRs). The amount of benefit varies widely by country, with diversification benefits 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,¹⁸ resulting in a reduction of 33%. Other markets with high levels of diversification include Ireland (29%), the UK (27%), Belgium (26%) and CEE (25%).

In addition to diversification benefits, there are two additional adjustments available to companies after 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 LACTP¹⁹ and the LACDT result in further reductions of 29% and 7%, respectively. These are broadly unchanged from the results at year-end 2020 where LACTP resulted in a 25% reduction to the undiversified SCR and LACDT a 7% reduction. LACTP is largest in Denmark²⁰ with a 69% reduction (this is reflective of Danish life insurance TPs being around 50% of the total 'Insurance With Profit Participation' business as well as a few large Danish firms holding almost exclusively this type of business and receiving a significant benefit from LACTP). LACDT is largest in Spain with a 17% reduction.

The countries with the highest exposure to market risk are France (79%), Italy (61%), Luxembourg (61%) and Germany (56%). Three of these countries, France, Italy and Germany, are also the countries with the largest proportions of TPs in respect of 'Insurance with Profit Participation', making up 72%, 73% and 83% of TPs respectively. This is somewhat unsurprising, as the investment guarantees associated with these contracts can 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 48% reduction for Germany, 43% for France, and 18% 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 12.

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

¹⁷ 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 Guernsey in ROE.

¹⁸ Figure 12 appears to show figures of 0% for both health underwriting risk and non-life underwriting risk. However, there is a large figure of 11% for other risks. This relates to the more generic underwriting risk described in footnote 18, which covers life, health and non-life underwriting risks, and overall boosts the level of diversification within the market.

¹⁹ Some companies reported their other risk modules after the risk-mitigation generated by their LACTP. Where this has happened, we have assumed that the LACTP is offsetting the market risk module and adjusted it to be pre-LACTP. This method of reporting is common in certain markets including France.

²⁰ Included within the NOR. The second highest LACTP is found in Malta, which is included in the ROE.

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 are discussed in this report are:

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

We have not included any analysis on the transitional measure on interest rates due to the very small uptake of this LTGM across Europe.

Figure 13 shows the breakdown of the SCR coverage ratio by the different LTGM and non-LTGM components (at year-end 2021) for each of the regions analysed in this report. The total across all companies in our sample is also shown.

FIGURE 13: BREAKDOWN OF SCR COVERAGE RATIO BY LONG-TERM GUARANTEE MEASURE

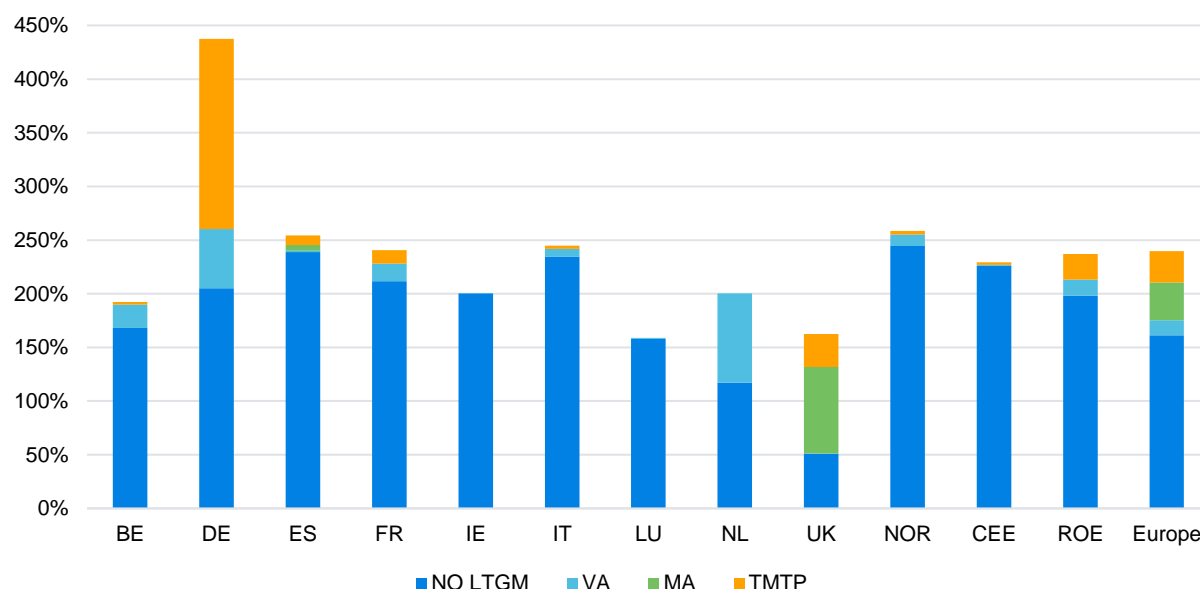


Figure 13 shows that different countries place different levels of reliance on the various LTGMs. The VA is the most widely used measure, used by 52% of all companies in our sample, including having some impact on

all of the largest markets shown on the chart. It has the largest impact in the Netherlands, where it increased the SCR coverage ratio by 83 percentage points on average. Since last year's analysis, we have seen a fall in the benefit arising from the VA on European life insurer's solvency coverage ratios to 14 percentage points (17 percentage points at year-end 2020).

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). As part of the Solvency II 2020 Review, EIOPA proposed that future adoption of the VA could be subject to supervisory approval in all jurisdictions.

Approval to use the VA 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 (55 percentage points), Belgium (22 percentage points), Norway (23 percentage points) and Austria (21 percentage points).

70% of German companies in our report apply the **TMTP**

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 an adjustment to the Solvency II yield curve as with the non-dynamic VA, but with allowance for variation under stress i.e., the size of the VA applied will vary across the different SCR stresses. The DVA is not currently permitted in all jurisdictions in our analysis nor is it reported separately to the non-dynamic VA and as such as not been separated out in our analysis.

The TMTP is currently being used by 48% of the countries in our sample. The SCR coverage ratio in Germany is 177 percentage points higher on average due to the use of the TMTP, the highest impact of any country from any LTGM measure in our sample. 69% of the German companies in our report apply the TMTP, with some showing very large benefits from its use. The large impact of the TMTP in Germany can be primarily attributed to the Solvency I regime in Germany using a book value accounting method and the rates of interest used in the valuation of the liabilities being relatively high when compared to the current Solvency II discount curve.

The other countries that receive significant benefits from using the TMTP are Portugal (39 percentage points), Slovakia (36 percentage points), the UK (31 percentage points) and Austria (28 percentage points). Across Europe the TMTP contributes 29 percentage points to European life insurers' SCR coverage ratios.

The MA is the least frequently used LTGM, with impacts arising only from insurers in the UK and Spain. It contributes 80 percentage points to the UK and five percentage points to Spain for each country's SCR coverage ratio based on the companies in our sample. Despite the low number of markets utilising the MA, across Europe the MA contributes 35 percentage points to European life insurer's SCR coverage ratios. This is driven by the significant benefit arising in the UK which is the largest market by TPs in our analysis.

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

When comparing the results in this report to the previous SFCR report, in aggregate there has been a decrease of two percentage points in the benefit received for using the LTGMs across European life insurers. These decreases are likely due to the following:

- VA benefit has been overall reduced when compared to year-end 2020 with different impacts seen across the various European markets. For example:
 - Increases in the VA rates for some currencies including Danish krone (+26bps), Polish złoty (+13bps), Czech koruna (+11bps), Hungarian forint (+6bps), Romanian leu (+4bps) and Norwegian krone (+2bps).
 - Decreases in the VA rates for some currencies including Bulgarian lev (-9bps), British pound sterling (-8bps), Icelandic króna (-8bps), Swiss franc²¹ (-5bps), euro (-4bps), Swedish krona (-2bps) and Croatian kuna (-2bps).

The reduced VA rates present in the euro and pound sterling markets have likely led to the overall reduction in the VA benefit due to the size of the markets reporting in these currencies.

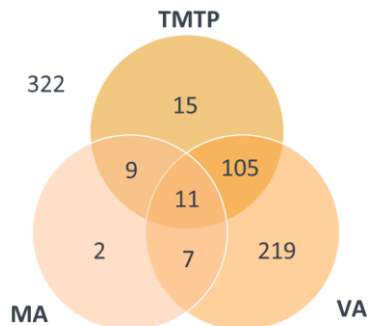
- MA benefit has increased over the year, up by four percentage points when compared with year-end 2020. This is mainly driven by the increased impact arising from the UK increasing from a 73 percentage points benefit in 2020 to 80 percentage points in 2021.
- The TMTP benefits reduce by one-sixteenth each year as they run off, although on some occasions, recalculations of the measure, where required, have led to increases in the TMTP benefit in a number of jurisdictions. Since our previous analysis, the TMTP benefit has increased in Germany (+13%), CEE (+2%), Italy (+1%) and the UK (+0.2%). However, these increases were not material enough to cause an overall increase in the level of TMTP benefit relative to the year-end 2020 SFCRs, with the overall benefit reducing by three percentage points over the year.

Of the companies in our sample, 342 are using the VA, 29 are using the MA (of which 19 are in the UK) and 140 are using the TMTP at year-end 2021. Some companies use different combinations of the LTGMs as shown in

²¹ Although Switzerland is not included in our analysis as it does not report under Solvency II, the Swiss franc has been included as it is the reporting currency used by a number of firms in Liechtenstein.

the Venn diagram in Figure 14. Of the European life companies in our sample, 322 did not use any of the LTGM at year-end 2021.

FIGURE 14: NUMBER OF COMPANIES USING LONG-TERM GUARANTEE MEASURES



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

342 used the **VOLATILITY ADJUSTMENT**

29 used the **MATCHING ADJUSTMENT**

140 used the **TMTP**

The number of firms in our sample using each of the LTGMs has decreased over the year. At year-end 2020, 354 firms were using the VA, 30 firms were using the MA and 147 firms were using the TMTP. There was also a reduction in the number of firms not using any LTGMs (336 firms at year-end 2020). The reductions are reflective of the smaller overall sample size which is driven by availability of data in Solvency II Wire at the time of analysis and also reflects the general trend of consolidation across Europe.

Conclusion

There has been an overall increase in the level of firms' SCR coverage ratio relative to last year however there has not been a significant amount of change in the individual items of European life insurers' balance sheets.

European life insurers continue to favour government and corporate bonds as investment categories, investing approximately 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) continuing to be dominated by 'Insurance with Profit Participation' business, while the market in other countries (such as Ireland, Luxembourg and the UK) continue to be 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 2021 SFCRs, with an average SCR coverage ratio of 240%. This represents an improvement on the year-end 2020 SFCRs, which had an average SCR coverage ratio of 223%. Given the impacts of the COVID-19 pandemic in 2020, there was a slight fall in solvency during this period of uncertainty, reducing SCR coverage ratios at year-end 2020. On average, firms have in fact returned to a higher solvency level than was seen prior to the pandemic, with average European solvency at year-end 2019 being 232%.

GWPs have also returned to similar volumes as seen prior to the COVID-19 pandemic, with total GWP across Europe totalling £725 billion in 2021 (£670 billion in 2020 and £705 billion in 2019).

Own funds are predominantly comprised of 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. There has been overall no change in the breakdown of own funds into the different tiers, however the absolute amounts of tier 2 and tier 3 have decreased while tier 1 unrestricted and tier 1 restricted have increased.

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 2020 primarily as a result of the reduction in VA benefit and the run-off of TMTP benefits over the year. The TMTP benefits will continue to run-off as we move further through the 16-year transitional period.



The average European SCR coverage ratio has **IMPROVED** over the year **from 223% to 240%**

Section 2: Analysis of UK life insurers

UK MARKET COVERAGE

Our analysis for 2021 is based on 68 life insurance companies authorised in the UK (69 for 2020).²² 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 68 companies in the UK section of our report represent approximately £227 billion (€270 billion) of GWP and approximately £2.223 trillion (€2.643 trillion) of gross life TPs, which is estimated to represent the majority of gross TPs in the UK. This represents a small reduction in the number of solo firms (69) but an overall increase in the GWP (£209 billion) and gross life TPs (£2.101 trillion) versus year-end 2020.

Appendix 1 contains a list of all the UK life insurance companies included in our analysis at year-end 2021. This list looks at solo SFCRs only and some companies within the list operate within the same insurance groups as other companies within the list.

Our analysis of the UK life insurance market covers:

68 LIFE INSURERS

£227 BILLION
of gross written premiums

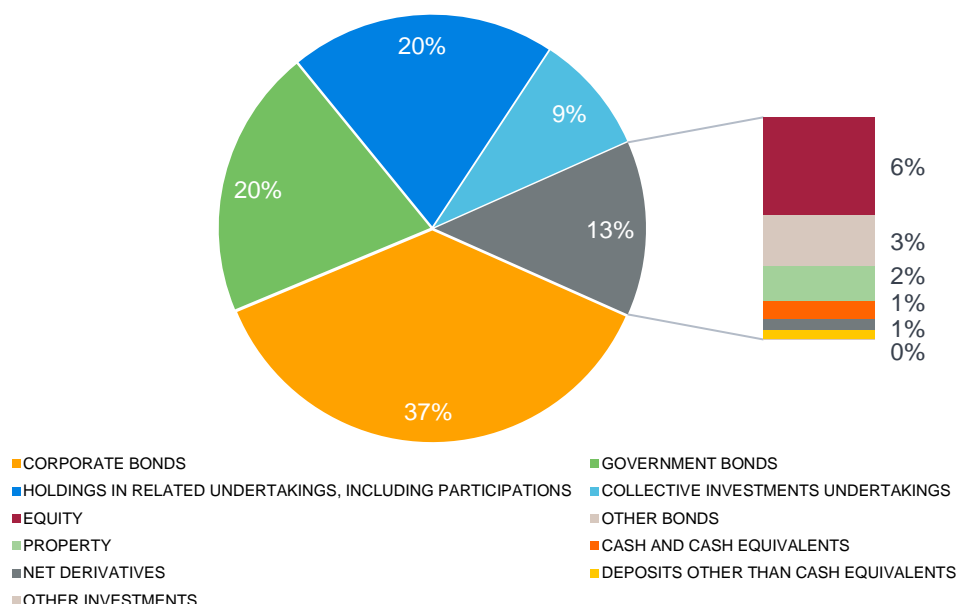
£2.223 TRILLION
of gross technical provisions

Analysis of balance sheet

ASSETS

The asset side of the balance sheet for the average UK life company at year-end 2021 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 15.

FIGURE 15: SPLIT OF NON-LINKED²³ FINANCIAL INVESTMENTS BY ASSET CLASS²⁴



²² 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 some smaller companies not being included based on availability of their SFCRs at the time of writing either this year or last year

²³ Does not include 'Assets held for Index-Linked and Unit-Linked Contracts.'

²⁴ Chart breakdown adds up to 99% due to rounding.

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 (37%) over government bonds (20%). Other sizeable investment categories are holdings in related undertakings (20%) and collectives (9%). The final 13% of investments is spread across a number of smaller asset categories, including equity (6%), other bonds (3%), property (2%), cash and cash equivalents (91%), net derivatives (1%), deposits other than cash equivalents (>1%) and other investments (>1%).

Holdings in related undertakings come almost entirely from four of the largest insurance groups: Phoenix,²⁵ M&G,²⁶ Aviva²⁷ and Royal London, which combined make up 96% 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 overall level of holdings in related undertakings (20% this year compared to 17% last year), with only small changes in the proportion of other asset classes. There has, however, been a notable decline over the year in the absolute level of corporate bonds (£276 billion last year compared to £264 billion this year) and equities (£54 billion last year compared to £42 billion this year). These categories account for the majority of the decline in total asset holdings by UK life insurers over the year (£722 billion last year compared to £713 billion this year).

LIABILITIES

Figure 16 shows the breakdown of the total UK life insurers' TPs between the Solvency II lines of business, gross of reinsurance, at year-end 2021.

FIGURE 16: SPLIT OF TOTAL UK LIFE INSURERS TECHNICAL PROVISIONS BY PRODUCT GROUPS

The UK life insurance market is dominated by **INDEX-LINKED AND UNIT-LINKED INSURANCE**, accounting for

61% OF TECHNICAL PROVISIONS

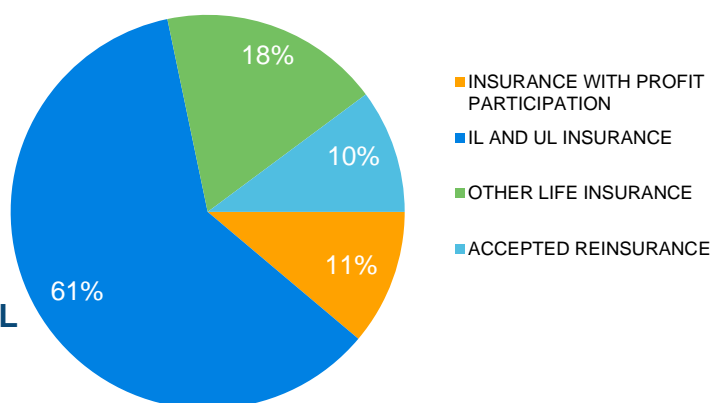


Figure 16 shows that the majority of UK life insurers' TPs are made up of 'IL and UL Insurance' (61%). 'Other Life Insurance,' 'Insurance with Profit Participation' and 'Accepted Reinsurance' are the other significant product classes, at 18%, 11% and 10%, respectively. 'Annuities (Stemming from Non-Life Insurance Contracts)' accounts for around 0.01% of the total TPs and is not shown on the chart due to its size.

Overall, the total value of life TPs in our sample has grown from £2.101 trillion at year-end 2020 to £2.223 trillion at year-end 2021 with the majority of this growth coming from an increase in 'IL and UL Insurance' TPs (increasing from 58% to 61% in proportion over the year). There have been small absolute increases in the other categories over the year with the exception of 'Insurance with Profit Participation' which has fallen in both proportion and absolute amounts.

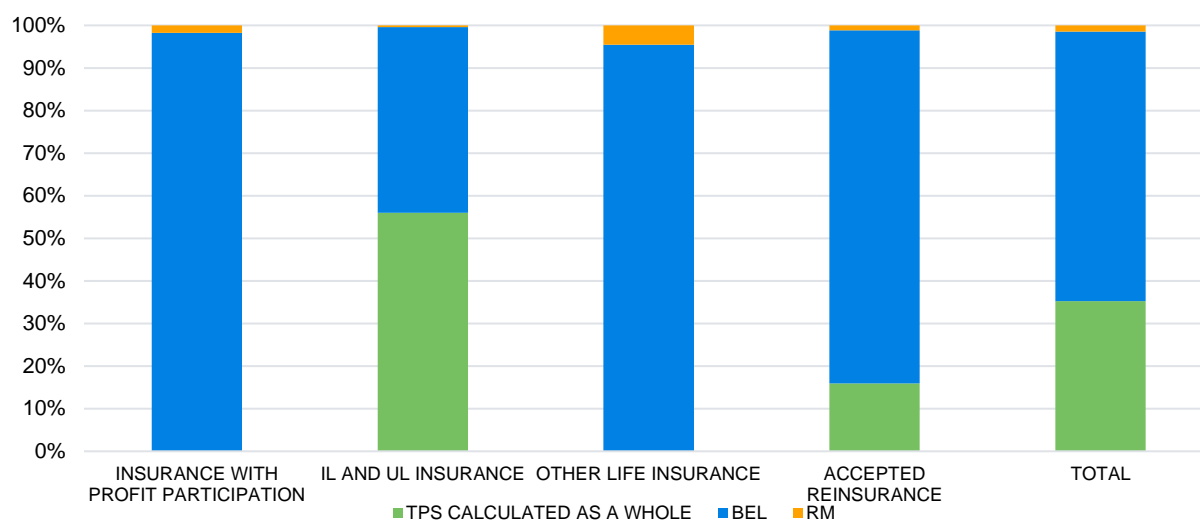
The TPs can be broken down further. A breakdown of the TPs for BEL, RM and 'TPs Calculated as a Whole' is shown in Figure 17, split by the Solvency II lines of business.

²⁵ Phoenix Group includes the acquisitions of Standard Life, ReAssure and Old Mutual Wealth Life & Pensions, but does not include the recent acquisition of Sun Life Assurance Company of Canada as this was announced post year-end 2021.

²⁶ M&G Group includes Prudential Pensions and the Prudential Assurance Society.

²⁷ Aviva Group contains Aviva Life & Pensions, Aviva Investors Pensions and Aviva International Insurance.

FIGURE 17: 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 56% and 16% of TPs, respectively. These represent similar proportions as those at year-end 2020. The 'TPs Calculated as a Whole' under the 'Accepted Reinsurance' category is a result of eleven providers all with significant volumes of reinsured 'IL and UL Insurance' business, with the majority of firms using this category to denote the unit-linked liabilities.

'TPs Calculated as a Whole' contributes a relatively large proportion (35%) of the overall TPs due to the significance of 'IL and UL Insurance' business within the UK's TPs. The proportion of 'TPs Calculated as a Whole' has increased marginally relative to year-end 2020. 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 some companies report it within the BEL figure.

The BEL makes up more than 40% of the TPs for every product group, including 63% of the total insurance market, while the RM ranges from only 0.4% of 'IL and UL Insurance' TPs to 4.5% of 'Other Life Insurance' TPs. Although it has been excluded due to its size, 'Annuities (Stemming from Non-Life Insurance Contracts)' show a RM of 10.6%.

Figure 18 shows the RM as a proportion of TPs for each Solvency II line of business at year-end 2021.

FIGURE 18: RATIO OF RISK MARGIN TO TECHNICAL PROVISIONS BY PRODUCT GROUP

	RM/TP %
INSURANCE WITH PROFIT PARTICIPATION	1.8%
IL AND UL INSURANCE	0.4%
OTHER LIFE INSURANCE	4.5%
ANNUITIES (STEMMING FROM NON-LIFE)	10.6%
ACCEPTED REINSURANC	1.1%
TOTAL	1.4%

The average ratio of **Risk Margin**
to **Technical Provisions** is
1.4%

The RM for 'IL and UL Insurance' is the smallest proportion of TPs, which could be due to the majority of risks being passed onto policyholders as well as some firms making use of a short contract boundary, thus leading to a lower RM.²⁸ 'Annuities (Stemming from Non-Life Insurance Contracts)' has the most significant RM at 10.6% of TPs, followed by 'Other Life Insurance' at 4.5%. These categories incorporate 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.

²⁸ 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 1.4% of TPs. This is a decrease on the results at year-end 2020 which showed a RM of 1.7%. More generally, the breakdown of the BEL by product type has shown little change since the year-end 2020 SFCRs.

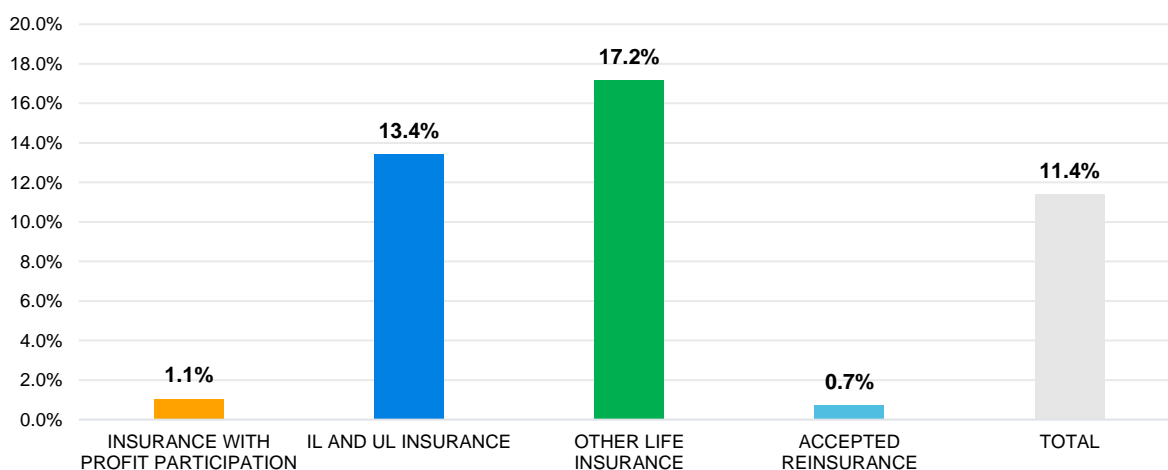
The RM is one of the key areas under review as part of the UK Review of Solvency II with the general expectation being that the absolute size of the RM would reduce for most firms under any future changes to the RM calculation. Under a scenario where a lambda parameter²⁹ of 0.975 with no floor was introduced alongside a reduction to the cost of capital to 5%, we estimate that the RM of UK life insurers would reduce by around a third across the industry.

REINSURANCE

Reinsurance is widely used by UK life insurers, with reinsurance recoverables of £254 billion (€302 billion) i.e., 11.4% of life TPs across the 68 life insurers in the sample.

Figure 19 shows the reinsurance recoverables as a percentage of the TPs for each of the main Solvency II lines of business at year-end 2021, alongside the total ceded percentage for UK life insurers as a whole.

FIGURE 19: PERCENTAGE OF TECHNICAL PROVISIONS WITH REINSURANCE



The line of business with the highest ceded level of reinsurance is 'Other Life Insurance' at 17.2%. This is around 4% higher than the second largest, which is 'IL and UL Insurance' at 13.4%, although due to the size of this market the value of total recoverables for 'IL and UL Insurance' products is much higher than for 'Other Life Insurance' (£181 billion against £69 billion). The smallest percentage is 0.7% for 'Accepted Reinsurance' which would be in respect of reinsurance which is then reinsured again.

Overall, the UK Life industry has **REINSURANCE RECOVERABLES** of around **11.4%** of Total TPs

Reinsurance for 'IL and UL Insurance' in the UK can often in respect of policyholders of one company investing in the unit-linked funds of other firms which has been established as a reinsurance arrangement.

The results for 'Annuities (Stemming from Non-Life Insurance Contracts)' have not been shown in Figure 19 for readability, however, 54.1% of all liabilities have corresponding reinsurance recoverables. This suggests that most firms reinsure the risks associated to these liabilities, which is perhaps unsurprising given their small absolute value and that the liabilities can often be quite different from a firm's other business.

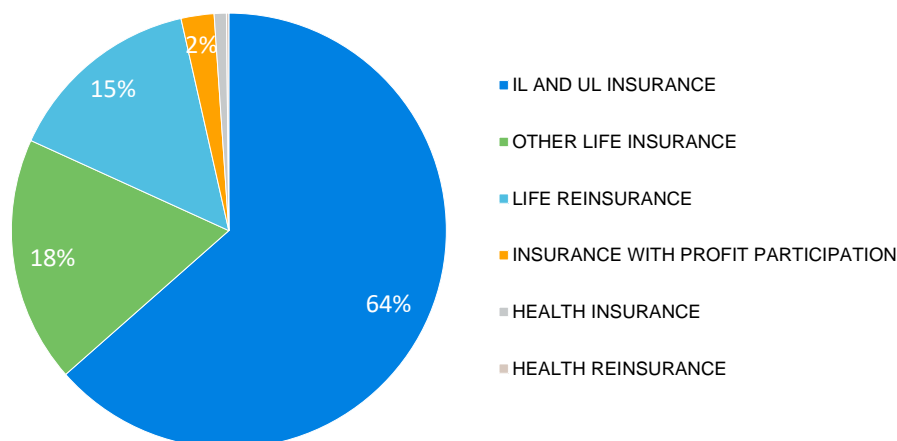
Overall, the industry has reinsurance recoverables of around 11.4% across all life TPs. This is an increase of 0.3% on the proportion at year-end 2020 and suggests that there has been a small increase in the proportion of UK life TPs that are reinsured relative to last year.

²⁹ The lambda factor is a method of tapering the risks projected under the RM calculation. This method has been assessed by EIOPA and the PRA with options for the potential parameters which will define this approach under discussion. See the Milliman [paper](#) on the PRA exercise for more details on this approach.

Analysis of premiums

Due to the long-term nature of the 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 64% of GWP in 2021. This is aligned with the significant growth we have seen in 'IL and UL Insurance' over the year.

FIGURE 20: SPLIT OF GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS



The rest of the GWP is made up of 18% 'Other Life Insurance,' 15% 'Life Reinsurance,' 2% 'Insurance with Profit Participation,' and just over 1% between 'Health Insurance' and 'Health Reinsurance.'

The most notable difference when comparing the GWP in 2021 to the reported TPs at year-end 2021 is that only 2% of GWP is written in respect of 'Insurance with Profit Participation' while this line of business represents 11% of total life TPs. This reflects the declining popularity of this type of business in the UK—there was an 8% reduction in the volume of GWP in respect of 'Insurance with Profit Participation' for 2021 when compared to 2020. However, this decline is significantly lower than the decline seen over the previous year, where the reduction in the volume of GWP in respect of 'Insurance with Profits Participation' was 46%.

This ranking of the GWP by line of business has remained the same since the year-end 2020 results, with 'IL and UL Insurance' increasing by four percentage points from 60%, 'Other Life Insurance' decreasing by three percentage points from 21%, and 'Insurance with Profit Participation' decreasing by one percentage point from 3% of the total GWP.

The total volume of GWP increased by 9%, based on the companies in the sample, from £209 billion (€235 billion) during 2020 to £227 billion (€270 billion) during 2021.

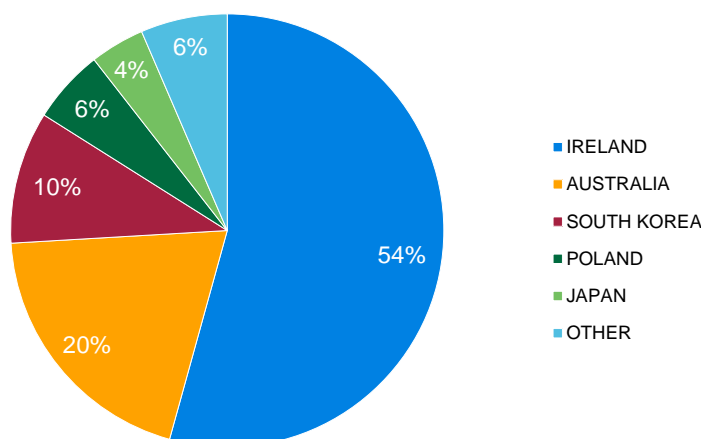
While most lines of business showed an increase in GWP over the year, the largest absolute increase was seen in the 'IL and UL Insurance' category increasing by around £20 billion.

There are still a few insurers selling to overseas markets through their UK companies. Figure 21 shows a rough breakdown of the cross-border sales by country for 2021.



GROSS WRITTEN
PREMIUMS
for life insurance have
INCREASED
over the year

FIGURE 21: CROSS-BORDER SALES BY COUNTRY BY GROSS WRITTEN PREMIUMS



Ireland accounts for the majority of cross-border sales from the UK at 54%. The bulk of the remaining overseas sales are to Australia (20%), South Korea (10%), Poland (6%) and Japan (4%). The rest of the countries with cross-border sales from the UK have been categorised as 'Other,' which accounts for around 6% of the total cross-border GWP.

This represents a significant change from what we have seen in previous years, where Australia has accounted for the majority of cross-border sales from the UK. This has been as a result of Pacific Life Re dominating cross-border sales in previous years, with Australia being their largest target market outside the UK.

However, in 2021, despite Pacific Life Re experiencing similar levels of cross-border sales to Australia, South Korea, Ireland and Japan, Prudential emerged as another company experiencing high cross-border sales, contributing 56% of the entire cross-border GWP from our sample.³⁰ These cross-border sales are predominantly made up of business written into Ireland (£463 billion).

Overall, the value of cross-border sales out of the UK in 2021 (£926 million) was approximately 167% higher than that seen in 2020 (£347 million). This is, of course, heavily influenced by the new sales being reported by Prudential. Excluding Prudential, cross-border sales were approximately 12% higher than in 2020 (£389 million). However, the levels of cross-border sales are still significantly lower than they were in the prior years, with the totals in 2018 and 2017 being £1.27 billion and £2.43 billion, respectively.

This decline in cross-border sales relative to 2017 is primarily due to the UK's exit from the EU and companies taking measures to ensure that they can continue their business interests in the case of changes to passporting arrangements. Companies have been setting up companies in other EU states, notably Ireland and Luxembourg, 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 the remaining companies make this transition with Pacific Life Re noting that the plan is to sell most new business through branches of their company in Bermuda in the future.³¹ However, the launch of new cross-order business from the UK by Prudential may suggest a change in this trend.

The data for Figure 21 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 2021.



The value of
**CROSS-BORDER
SALES**
has
increased
over the year

³⁰ The emergence of Prudential is due to reporting of the relevant QRT at year-end 2021. We understand that cross-border sales from Prudential may increase further with the launch of Future+ in Europe, a smoothed retail investment product that Prudential anticipates having strong demand. This QRT was not reported in previous years due to the lack of cross-border business.

³¹ Pacific Life Re [News Update](#)

Analysis of own funds

Figure 22 shows the split of own funds by tier for all UK life companies in our sample at year-end 2021.

FIGURE 22: SPLIT OF ELIGIBLE OWN FUNDS BY TIER³²

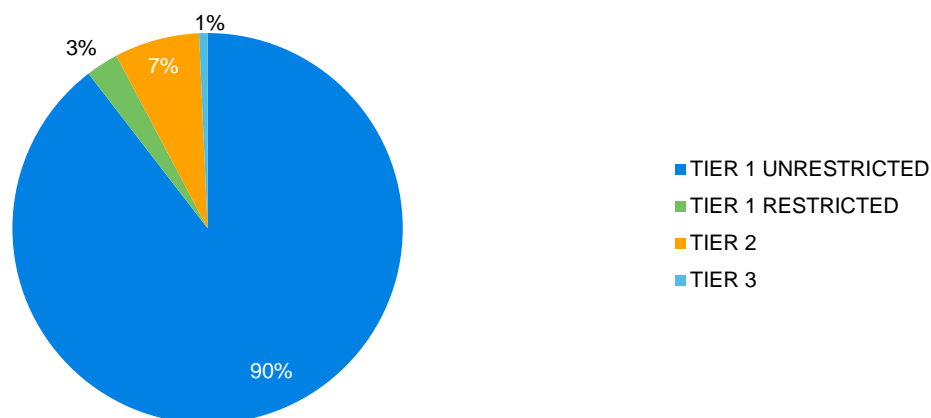


Figure 22 shows that the majority of capital for own funds is being held in the highest quality, tier 1 unrestricted capital. Overall, 90% of UK life insurers' own funds are being invested in this highest quality capital.

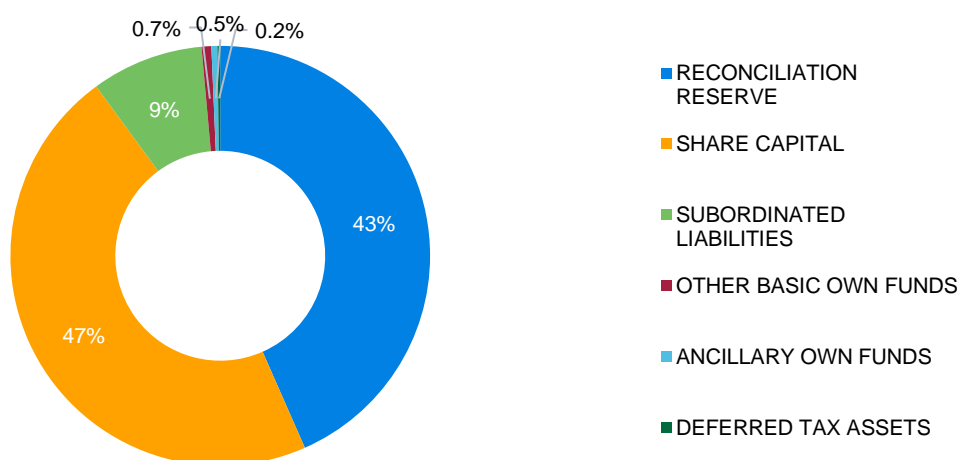
Tier 1 restricted capital and tier 2 capital make up 3% and 7% of the total own funds, respectively. Tier 2 is used by only some of the companies in the sample, with the five largest users³³ of tier 2 capital accounting for more than 80% of the total. The types of companies that tend to invest in tier 2 capital are generally the largest companies in the market and 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 accounts for less than 1% of the total. Overall, there was little change in the split of own funds when compared to the year-end 2020 SFCRs.

Figure 23 shows the components of the own funds at year-end 2021.

90% of own funds for UK life insurers is held in **Tier 1 Unrestricted** Capital

FIGURE 23: COMPONENTS OF OWN FUNDS



³² Chart breakdown adds up to 101% due to rounding.

³³ The five largest users of tier 2 own funds are Scottish Widows, Pensions Insurance Corporation, Royal London, Rothesay Life and Aviva Life & Pensions.

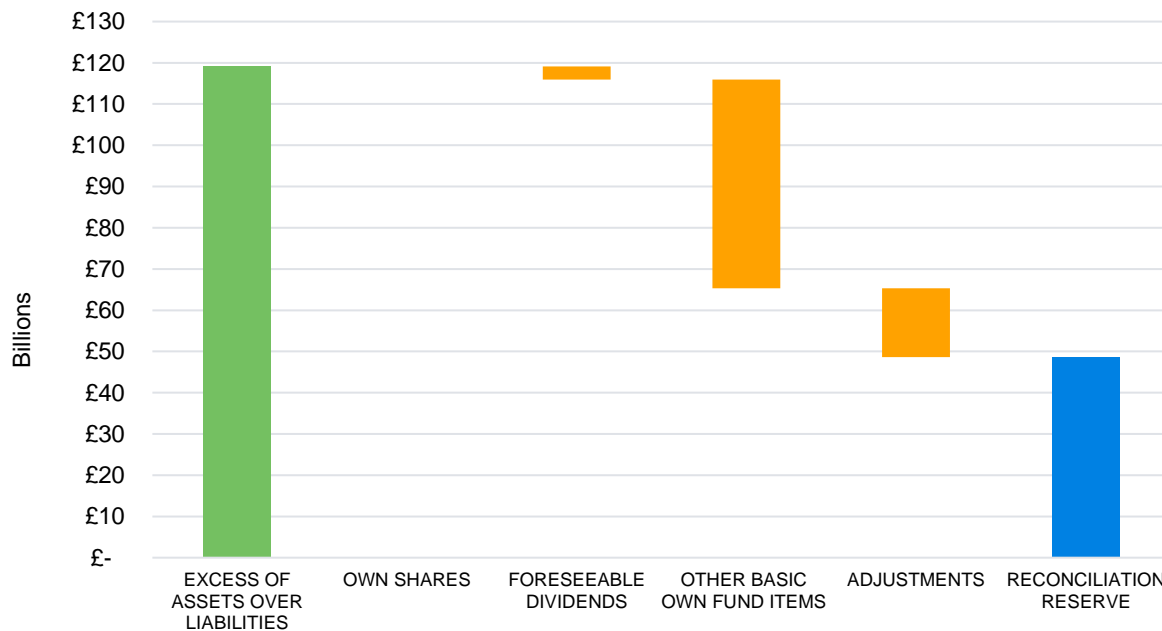
Own funds within UK life insurers primarily consist of the 'Reconciliation Reserve' (43%) and 'Share Capital' (47%). Own funds in 'Subordinated Liabilities' contributes 9% of the total. The majority of the 'Subordinated Liabilities' for UK life insurers are categorised as tier 2 capital which accounts for a comparable proportion of the own funds (7% as noted above). The remaining subordinated liabilities are generally categorised as tier 3 or tier 1 restricted capital. Almost three quarters of the 'Subordinated Liabilities' held by UK life insurers comes from only four firms.³⁴ As expected, the firms reporting significant usage of 'Subordinated Liabilities' also report notable levels of tier 2 own funds.

In the UK life market, 'Deferred Tax Assets,' 'Ancillary Own Funds' and 'Other Basic Own Funds' are all very small, making up under 2% of the entire own funds collectively.

The breakdown of the components has changed slightly relative to the year-end 2020 SFCRs, where the 'Reconciliation Reserve' was greater than the 'Share Capital.' For the year-end 2021 SFCRs, the opposite is true, reverting to the profile previously seen at year-end 2019.

The breakdown of the 'Reconciliation Reserve' is also available from the SFCRs and is shown in the chart in Figure 24. 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 24: BREAKDOWN OF THE RECONCILIATION RESERVE



The breakdown of the 'Reconciliation Reserve' is very similar to that seen for the year-end 2020 SFCRs, including 'Own Shares' having no impact on the Reconciliation Reserve. The total value of 'Excess Assets Over Liabilities' decreased by 1.7% over the year, and the Reconciliation Reserve itself fell by 9.8%. The latter part has been driven by an increase in the 'Foreseeable Dividends.' The increase to 'Foreseeable Dividends' is around 850% relative to year-end 2020 (only £334 million of foreseeable dividends were included at year-end 2020 compared to only £3.170 billion at year-end 2021). This is likely driven by firms returning to regular dividend payments following a recovery from the market uncertainty caused by the COVID-19 pandemic which suppressed dividends in 2020.

³⁴ The four firms with high levels of 'Subordinated Liabilities' are Pension Insurance Corporation, Rothesay Life, Scottish Widows and Royal London.

Analysis of solvency coverage

The weighted average SCR coverage ratio for our sample of UK life insurers from the year-end 2021 SFCRs was 162%, based on figures from companies' public QRTs. This is well in excess of the 100% coverage required, showing that most 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 240%, suggesting that UK insurers on average hold less excess capital, in percentage terms, than their counterparts across Europe.

The European average is being driven up by the high solvency coverage because of the high impact of the LTGMs in the German market. This is consistent with what was seen in the previous set of SFCRs, where the average SCR coverage ratio for the UK was 153% and across Europe was 223%.

Figure 25 compares the UK to the European average solvency coverage ratios.

FIGURE 25: AVERAGE SCR AND MCR COVERAGE RATIOS

	UK AVERAGE	EUROPEAN AVERAGE
RATIO OF ELIGIBLE OWN FUNDS TO SCR	162%	240%
RATIO OF ELIGIBLE OWN FUNDS TO MCR	536%	613%
MCR AS A % OF THE SCR	28%	37%

THE WEIGHTED AVERAGE SCR COVERAGE RATIO

for UK life insurers was

162%

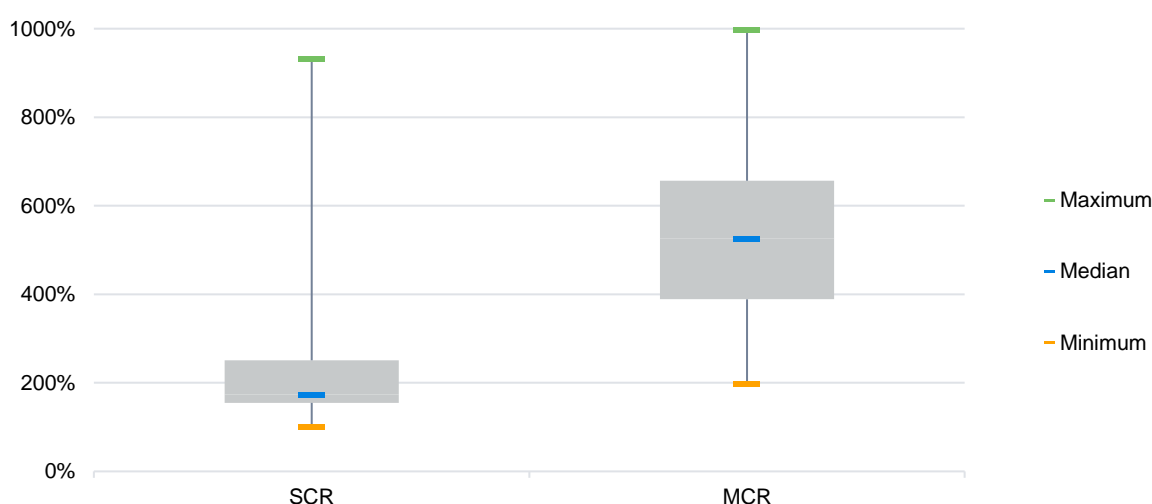
which is lower than the
EU Average of **240%**

The weighted average MCR coverage ratio for UK life companies was 536%. 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 613%.

The weighted average MCR as a percentage of the SCR was 28% for the UK. 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 similar to that seen at year-end 2020.

The distribution of the SCR and MCR ratios is shown in Figure 26.

FIGURE 26: 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 26. The solvency coverage has a range covering 100% to 2,941% 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 155% and 251% (the interquartile range of the distribution). This is a reasonably narrow range considering the overall spread of coverage ratios. However, it is also notable that the upper quartile makes up almost the entirety of the range (173% to 251%). The interquartile range is also narrower than seen in the year-end 2020 results, where half of all companies had an SCR coverage ratio between 150% and 267%.

The MCR coverage ratio has a range that is narrower in size than the SCR coverage ratio (199% to 2,070%). However, this has been limited to 1,000% in the chart for readability. It has a higher minimum and a lower maximum³⁵ than the range for SCR coverage ratios. Half of the companies have an MCR coverage ratio that falls between 389% and 656%, which is a larger interquartile range than shown by the SCRs, suggesting more variability amongst firms in the MCR coverage ratio than the SCR coverage ratio. This is likely driven by the majority of firms managing their business with respect to the SCR and making business decisions based on the impact on the SCR coverage ratio.

The distribution of the SCR coverage ratios has not changed significantly since the year-end 2020 SFCRs with the biggest difference being the maximum SCR ratio growing significantly from 1,663% to 2,941%. The company with the highest solvency coverage at year-end 2020 was Churchill Insurance, while the company with the highest at year-end 2021 was Standard Life Pension Funds. Standard Life Pensions Funds saw a large reduction to an already very low SCR over the year, hence the large increase to their SCR coverage ratio.

The minimum SCR coverage ratio was 100% at both year-end 2021 and year-end 2020 with both being reported by the same firm³⁶.

The range of MCR coverage ratios shows a similar range relative to the year-end 2020 results (131% to 1,909%). Out of the 68 firms included in our analysis at year-end 2021, eight firms report an MCR that is higher than the SCR, i.e., the MCR is the biting constraint on their solvency requirements. In all instances this occurs where the SCR is very small and has decreased below the absolute minimum capital requirement (AMCR) of £3.1 million (€3.7 million).

Several UK life insurers use either PIMs or FIMs. Of the 68 insurers in our analysis, there are nine PIM users and 11 FIM users, with the remaining 48 using the Standard Formula (SF). This reflects no change in the number of firms using PIMs and FIMs in our sample relative to year-end 2020.

The table in Figure 27 shows the average SCR coverage ratio for companies aggregated by their SCR methodologies (SF, PIM and FIM) at year-end 2021.

FIGURE 27: AVERAGE SCR FOR STANDARD FORMULA, PARTIAL INTERNAL MODEL AND FULL INTERNAL MODEL FIRMS

	SCR COVERAGE RATIO
SF FIRMS	149%
PIM FIRMS	173%
FIM FIRMS	155%

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

48 use the **STANDARD FORMULA**

9 use a **PARTIAL INTERNAL MODEL**

11 use a **FULL INTERNAL MODEL**

The weighted average SCR coverage ratio for companies using the SF is 149%, while the ratio for PIM and FIM firms is 173% and 155%, respectively. This is in contrast to the results seen at year-end 2020, where companies using a FIM had the lowest solvency coverage ratio at 145%, and companies using the SF or a PIM both averaged 159%. The increases to the SCR coverage ratios of PIM and FIM firms has been driven by a large decrease to the SCRs of these firms, but a lower relative decrease in the own funds. The decrease in the SCRs

³⁵ This is because the firm with the highest SCR coverage ratio had an SCR lower than the absolute minimum floor on the MCR, hence their MCR coverage ratio was lower than their SCR coverage ratio.

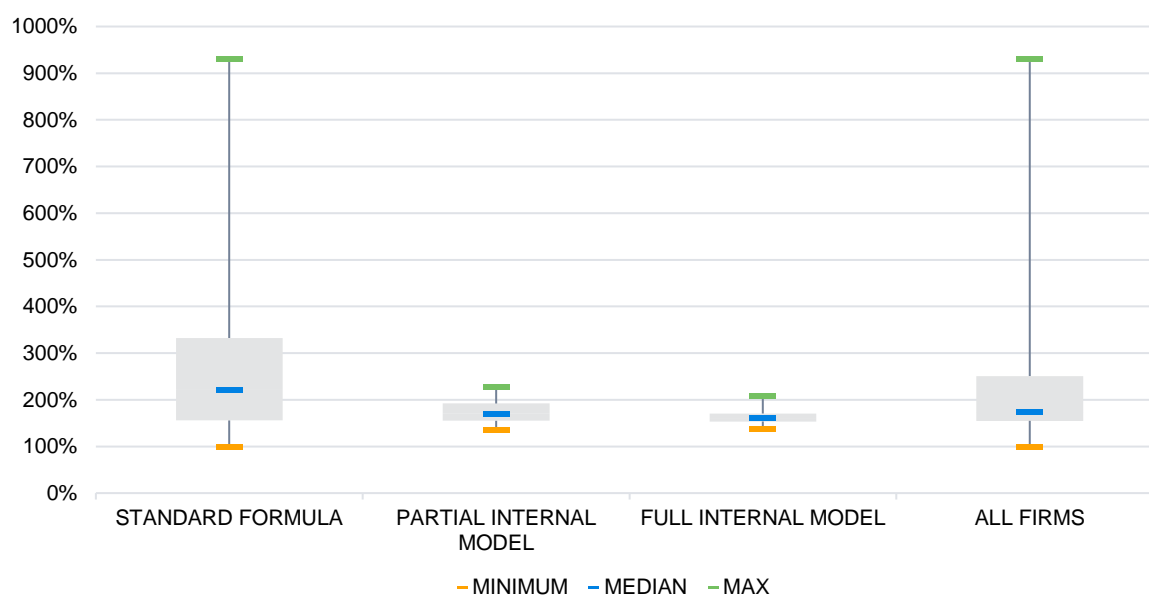
³⁶ This is due to Exeter Friendly Society restricting own funds such that the company's own funds equal its SCR.

has been driven by notable reductions in the level of market risk, which is likely in part due to recoveries after the market disruption at year-end 2020 arising from the COVID-19 pandemic.

For firms using the SF, however, there has been a slight overall increase to the total SCR, while there has been a decrease to total own funds, causing the 10 percentage point reduction in average SCR coverage.

The distribution of the SCR coverage ratios for each of the three different methodologies shows greater differences between them. Figure 28 shows the distributions at year-end 2021.

FIGURE 28: DISTRIBUTION OF SCR FOR INTERNAL MODEL FIRMS VERSUS STANDARD FORMULA³⁷



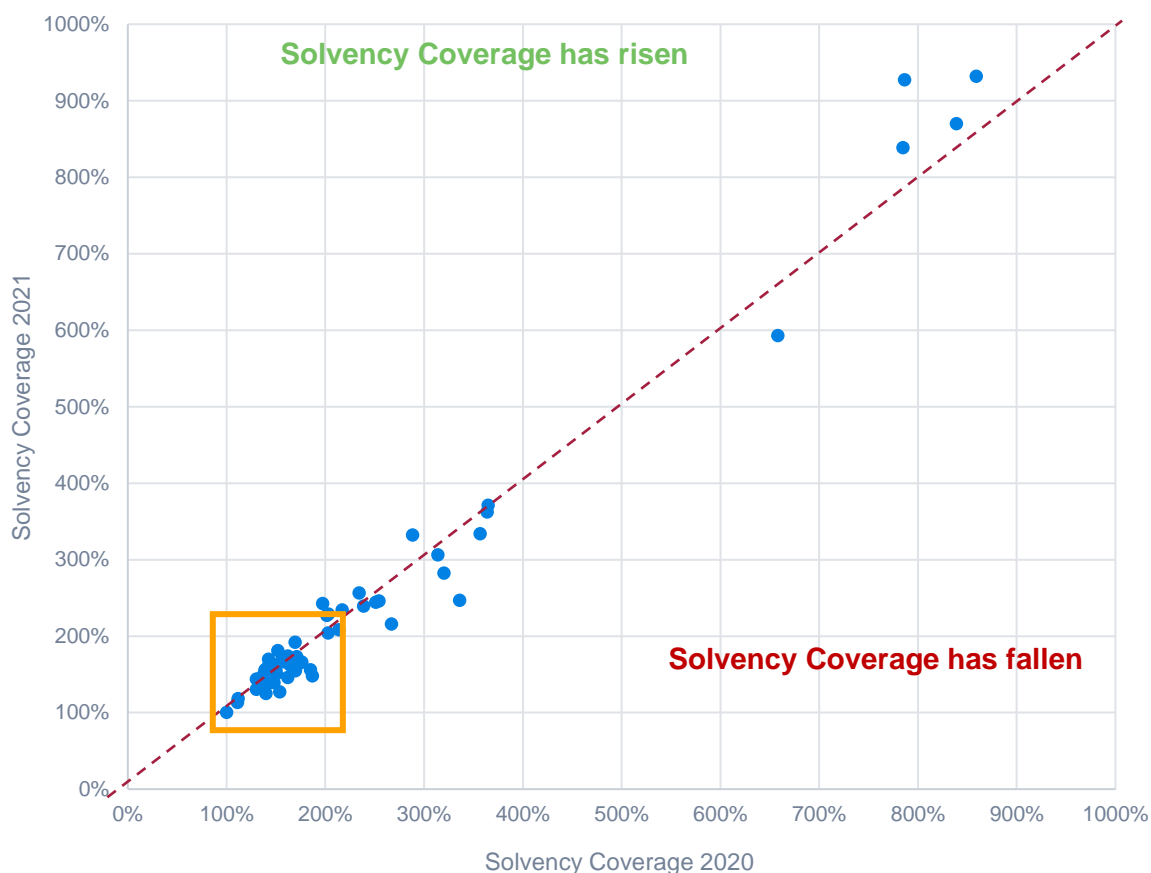
The SCRs for internal model firms have typically shown a smaller range than the Standard Formula firms. Many of the companies using a PIM or FIM in our sample tend to be part of a group and the result suggests that companies within a group manage their capital more actively and do not hold significant surplus capital at the subsidiary level. This could also be driven by the small number of internal model firms (20 firms) in our sample.

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 2020 SFCRs, with the exception of a large change in the range of SCR coverage shown for FIM firms. This appears to differ greatly from our analysis last year, however, this is driven by Standard Life Pension Funds which, as mentioned above, experienced a very large increase in SCR coverage over the year (548% in 2020 compared with 2,941% this year) and have hence been removed from the graph to aid readability. The second highest SCR coverage for FIM firms has remained fairly stable over the year, decreasing slightly from 214% to 208% (Legal and General Assurance (Pensions Management) in both years).

This similar distribution of SCR coverage in comparison to last year is further evidenced in Figure 29 below, which shows a plot of the solvency coverage reported at year-end 2021 versus that reported for year-end 2020.

³⁷ The scale has been amended to only reach 1,000% coverage ratio for readability. This limit on the scale only excludes two Standard Formula firms (Churchill Insurance and Liverpool Victoria Life Company) and one FIM firm (Standard Life Pensions Funds).

FIGURE 29: COMPARISON OF SCR COVERAGE (YEAR-END 2021 VS YEAR-END 2020)³⁸

Each blue dot represents one firm in the analysis plotted to show its year-end 2020 SCR coverage ratio on the x-axis and its year-end 2021 SCR coverage ratio on the y-axis. The blue dots above the red dotted line represent firms reporting a higher SCR coverage ratio at year-end 2021 than at year-end 2020, while those that fall below the red dotted line represent firms reporting a lower SCR coverage ratio at year-end 2021 than at year-end 2020. The red dotted line represents the point of 'no change' i.e., dots that fall exactly on the line show no change in their SCR coverage ratio between year-end 2021 and year-end 2020.

Most of the dots fall on or reasonably close to the 'no change' line, which suggest the majority of firms did not see a significant movement in their SCR coverage ratio over the year. In particular, a number of firms are clustered in and around the 150% mark (highlighted by the yellow box) showcasing that many firms look to be managing their SCR coverage ratio at this sort of level.

In comparison to changes observed last year, the solvency coverage has remained much more stable. The maximum absolute change in SCR coverage between 2020 and 2021 was 141% (514% between 2019 and 2020) and the average absolute change between 2020 and 2021 was 20% (44% between 2019 and 2020).³⁹

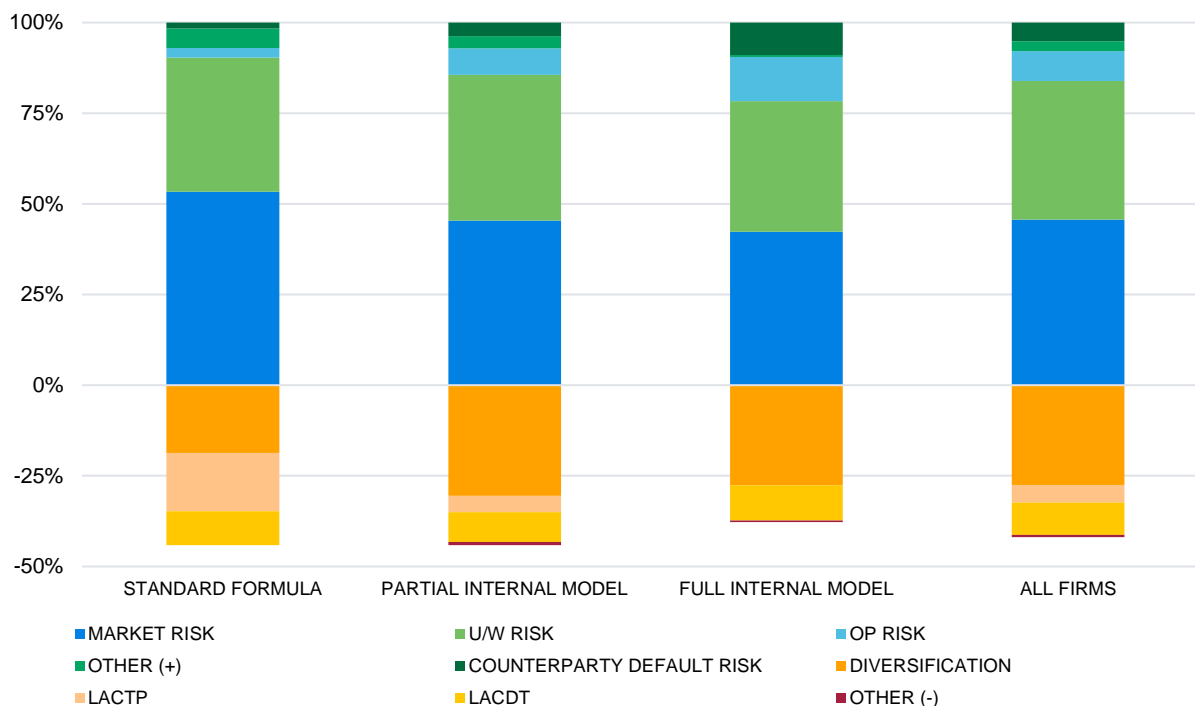
³⁸ The chart excludes coverage ratios more than 1,000% for readability. The chart also excludes any firms which were only included in our sample at year-end 2021 or at year-end 2020 but not at both.

³⁹ These figures only consider companies shown on the chart i.e., they exclude any companies with a coverage ratio in excess of 1,000% in either year as well as only comparing companies that were in both years' analysis. This excludes a few large movements where the change in SCR coverage ratio is high, but the absolute change in SCR and own funds is very small.

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, to calculate the average contribution to the SCR for each sub-module at year-end 2021. For firms using a PIM or FIM, we have mapped the capital requirements to the Standard Formula risks, where possible.

FIGURE 30: AVERAGE SCR BREAKDOWN OF SCR BY SF, PIM AND FIM⁴⁰



MARKET RISK is the largest risk to UK life insurers, contributing **46%** of the undiversified SCR

Figure 30 shows that life insurers in the UK are primarily exposed to market risk, contributing 53% of the undiversified SCR for SF firms, 45% for PIM firms and 42% for FIM firms. Market risk contributes 46% to the undiversified SCR on average across all companies included in our sample.

Underwriting risk for UK life insurers contributes 37%, 40% and 36% 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 firms included in this analysis (which have a majority of life insurance business). Underwriting risk contributes 38% to the undiversified SCR on average across all firms in our sample (with 37 percentage points coming from life underwriting risk).

Counterparty default risk is the only other risk that contributes to the basic solvency capital requirement (BSCR). It makes up only 2%, 4% 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

⁴⁰ 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.

appropriately reflect their risk exposures. It may also reflect that other risks such as market or underwriting risks are smaller relative to Standard Formula firms, due to closer management of these risks, different calibration of the stresses or diversification under the PIM/FIM. A similar argument could be provided for why counterparty default risk is higher for FIM and PIM firms when compared to SF firms.

The diversification benefit for the UK life insurance market is large, giving a reduction of 19% of the undiversified SCR for SF firms, 31% for PIM firms and 28% for FIM firms. This is the diversification between the risk modules in building up the BSCR⁴¹ 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 5% of the undiversified SCR across all firms. There are only 21 insurers using the adjustment, with four insurers (Royal London Mutual Insurance Society, Wesleyan Assurance Society, ReAssure and Liverpool Victoria Friendly Society) accounting for approximately 90% of the entire LACTP of UK life insurers between them. Only two insurers using the LACTP adjustment do not use the SF, both using a PIM.⁴² The LACTP gives a reduction of 16% to SF firms (14% at year-end 2020) and 4% to the undiversified SCR for PIM firms (4% at year-end 2020). The reduction as a result of LACTP is lower than shown for individual firms as this impact is shown across the full set of companies in our analysis, i.e., including firms that do not make use of the adjustment and so in effect have a reduction from a LACTP of 0%.

There are 45 companies using the LACDT adjustment, approximately two-thirds of the firms in our sample, which allows a reduction of 9% of the undiversified SCR for the UK life insurance industry. The LACDT gives a reduction from the undiversified SCR of 9% to SF firms (6% at year-end 2020), 8% to PIM firms (6% at year-end 2020) and 10% to FIM firms (6% at year-end 2020) reflecting an increase to LACDT across the market. This is likely driven in part by the expected increase to the corporation tax rate for large firms from 19% to 25% in April 2023.

Other adjustments have been split into net increases and net decreases to the SCR. Net increases, 'Other (+)'⁴³ contributes 3% of the undiversified SCR across all companies, while net decreases, 'Other (-)' gives a reduction of 0.6% of the undiversified SCR across all companies. Other adjustments include capital add-ons already set, adjustments due to ring-fenced funds and additional capital requirements for the business.

⁴¹ The BSCR in our analysis excludes operational risk. The operational risk module for SF firms is not diversified with the other risk modules, however, the operational risk for PIM and FIM firms may be diversified with the other risk modules. We have excluded the operational risk from our calculations of BSCR for all firms for consistency.

⁴² The PIM firms using LACTP are Royal London Mutual Insurance Society and AEGON Scottish equitable.

⁴³ 'Other (+)' includes risks from internal model firms that did not map clearly onto the risk modules of the standard formula.

Analysis of MCR

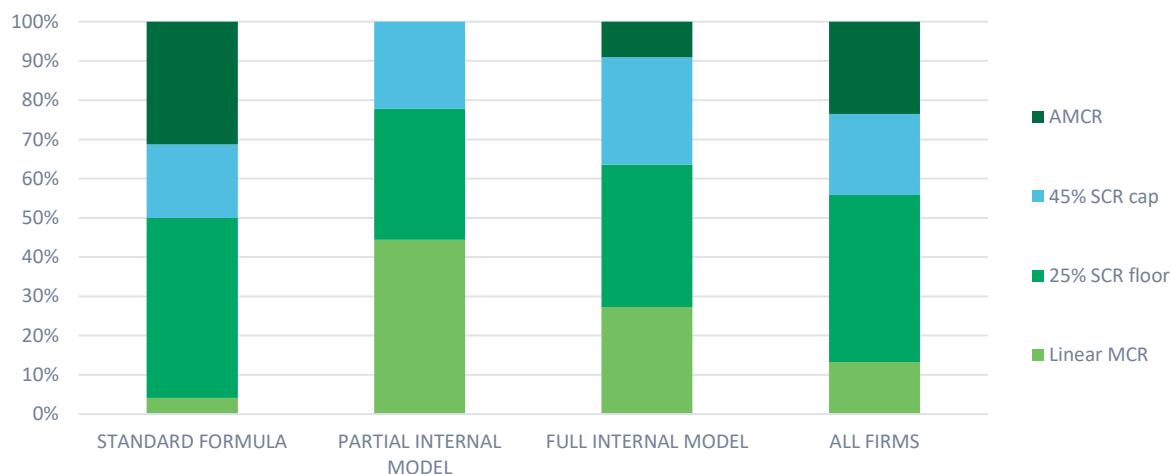
The MCR is the ultimate level of supervisory intervention, where this is breached the regulator will intervene and has the power to restrict the activities of the firm. The calculation of the MCR is formulaic and carried out in a similar way for all firms (regardless of whether the firm uses the SF, a PIM or FIM to calculate its SCR).

The MCR is calculated using a linear formula (Linear MCR), subject to a cap and a floor with two conditions. These restrictions are:

- A cap of 45% of the SCR
- A floor of 25% of the SCR
- An absolute minimum capital requirement (AMCR) of £3.1 million (€3.7 million) for life insurers⁴⁴

Figure 31 below shows what proportion of firms see each of the conditions for the MCR calculation bite.

FIGURE 31: BITING CONDITION OF THE MCR



Despite feeling like the key part of the calculation, the Linear MCR bites for very few firms (13% of all firms), however this proportion is notably higher for PIM (44%) and FIM (27%) firms.

The most common biting condition is the 25% floor which bites for 43% of all firms. The 45% cap meanwhile bites for 21% of all firms. The majority of firms where the 45% cap bites have significant proportions of their business as 'IL and UL Insurance.'

The AMCR bites for 24% of all firms, including 31% of all SF firms. This is equivalent to 16 firms in our sample and generally occurs when the absolute value of the SCR is small. Of the 16 firms whose MCR biting constraint is the AMCR, eight firms also have an MCR which is in excess of the SCR, i.e., the MCR is the overall biting constraint for the firms' capital requirements.

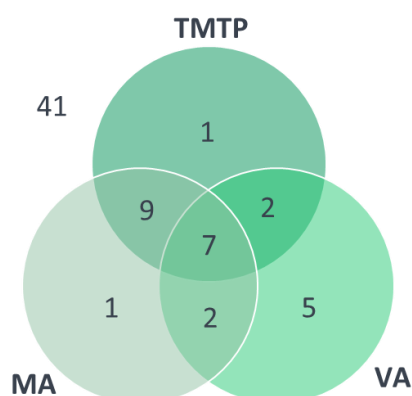
⁴⁴ The amount is prescribed by the Solvency II regulation and varies depending on the type of business the firms writes.

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, 16 are using the VA, 19 are using the MA and 19 are using the TMTP at year-end 2021, with some companies using combinations of the LTGMs as shown in the Venn diagram in Figure 31. Of the UK life companies in our sample, 41 did not use any of the LTGMs.

FIGURE 32: NUMBER OF COMPANIES USING LONG-TERM GUARANTEE MEASURES



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

16 used the **VOLATILITY ADJUSTMENT**

19 used the **MATCHING ADJUSTMENT**

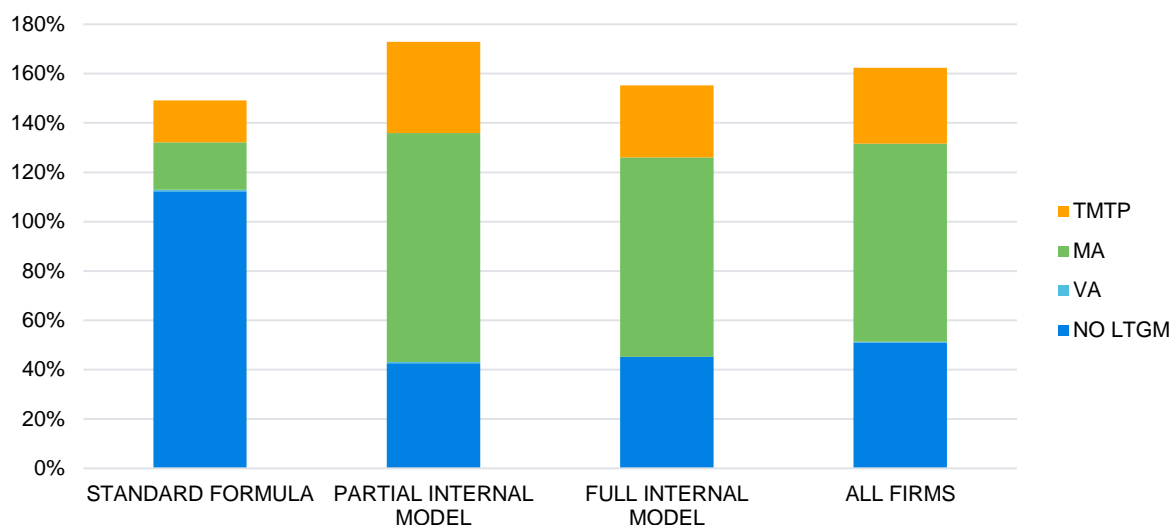
19 used the **TMTP**

There has not been significant movement in the use of LTGMs in the UK, however we do note the following changes over the year as a result of PRA approvals:

- Countrywide Assured began to use the VA following the implementation of a refinement to its investment approach for assets backing some of its non-linked policies.
- Omnilife began to use the VA on their sterling denominated annuity business.
- Royal London Mutual Insurance Society began to use the MA in relation to non-profit annuity liabilities in their Main Fund.
- Zurich Assurance began to use the VA on their UK non-linked, non-profit business.

Figure 33 shows the breakdown of the SCR coverage ratio by each LTGM and the result if no LTGMs were applied at year-end 2021. The breakdown is shown for SF, PIM and FIM firms, alongside the total across all companies.

FIGURE 33: BREAKDOWN OF SCR COVERAGE RATIO BY LONG-TERM GUARANTEE MEASURE



The general picture seen in Figure 33 is that companies using PIMs and FIMs have similarly high levels of reliance on LTGMs, and this drives the aggregate result 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 lower levels of reliance on LTGMs.

The MA makes up the largest proportion of the SCR coverage ratios for FIM and PIM firms, on average accounting for 80 percentage points of the total SCR coverage ratio for life insurers in the UK. This is highest for the PIM firms at 93 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 MA is one of the key areas under review as part of the UK Review of Solvency II and so the relative size of the MA benefit could change in the future.

The TMTP is the next-largest LTGM, adding on average 31% 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. The level of benefit provided by the TMTP has remained broadly the same over the year (at just under 31%), which suggests that although the TMTP is designed to run off over time, the required biennial recalculation of the TMTP has increased the benefit of this LTGM to some firms. Firms that make use of the TMTP will likely need to recalculate this following any change implemented as a result of the UK Review of Solvency II, in particular given that the RM and MA changes being proposed likely to have a knock on impact on the size of the TMTP.

The VA has the lowest impact across all categories, with an impact of less than 1% on SF, PIM and FIM firms. On average, it contributes around 0.3% to the SCR coverage ratio across all companies. This is similar to the VA impact shown in the year-end 2020 SFCR results despite the increased number of firms holding VA approval.

The solvency coverage ratio without the LTGM has increased marginally from 49% at year-end 2020 to 51% at year-end 2021. This is mainly driven by a seven percentage point increase in pre-LTGM solvency coverage ratios for PIM firms, increasing from 36% at year-end 2020 to 43% at year-end 2021. Standard Formula firms, on average, remain solvent without the application of the LTGMs, maintaining an average solvency coverage ratio of 112% at year-end 2021 (119% at year-end 2020). Similarly, FIM firms have seen their pre-LTGM solvency ratios fall over the year from 49% at year-end 2020 to 45% at year-end 2021.

Conclusion

UK life insurers disclosed healthy results in the year-end 2021 SFCRs, with an average SCR coverage ratio of 162%. No UK 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, while usage of the volatility adjustment (VA) is growing, with three companies gaining approval of its use from the PRA during the year. The LTGMs lead to significant increases in the SCR coverage ratio for some companies.

The analysis of the SFCRs shows that there has been little change to UK life insurers balance sheets relative to year-end 2020.

'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 continued a trend observed in past years. 'Insurance with Profit Participation' continues to decline when measured by volume of TPs and gross written premiums.

The volume of gross written premiums sold by UK life insurers has increased over the year, most likely as a result of firms recovering from the impacts of the COVID-19 pandemic in 2020.

Own funds are primarily invested in tier 1 unrestricted own funds (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 and mono-line annuity providers.

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 significantly when calculating their SCR.

UK life insurers have
an **Average**
SCR Coverage Ratio of
162%



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Appendix 1: UK life companies included in the analysis

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