MILLIMAN RESEARCH REPORT

Analysis of life insurers' first set of Solvency and Financial Condition Reports

European and UK life insurers

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Stuart Reynolds, FIA
Eoin O'Byrne
Neil Christy

Milliman


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Introduction

Solvency II came into effect on 1 January 2016 and introduced a number of disclosure requirements for European insurers. Under the new requirements, the majority of European insurers were required to publish detailed Solvency and Financial Condition Reports (SFCRs) for the first time in May 2017.[1] The SFCRs contain a significant amount of information on the insurance companies, including details on business performance, risk profile, balance sheet and capital position amongst other things. Insurers are also required to publish a great deal of quantitative information in the public Quantitative Reporting Templates (QRTs) included within the SFCRs.

EUROPEAN MARKET COVERAGE

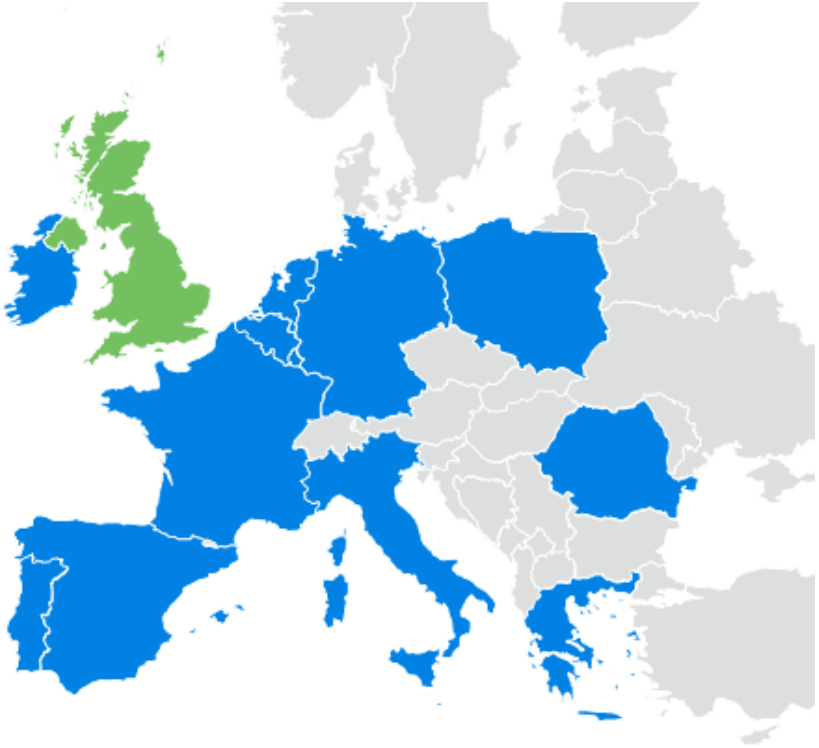
Our analysis of the European life insurance market covers 200 companies from 13 countries, representing approximately £422 billion (€475 billion) of Gross Written Premium (GWP) and approximately £4,175 billion (€4,700 billion) of gross Technical Provisions. The countries included in the analysis are:

- Belgium (BE)
- France (FR)
- Greece (GR)
- Germany (DE)
- Italy (IT)
- Ireland (IE)
- Luxembourg (LU)
- Netherlands (NL)
- Poland (PL)
- Portugal (PT)
- Spain (ES)
- Romania (RO)
- United Kingdom (UK)

The coverage in terms of market share varies by country. For some countries, such as the UK, Ireland and Luxembourg, the companies included in our sample represent over 90% of the market. For others, such as the Netherlands, Belgium and Romania, the coverage is slightly lower at 70% to 80% of the market. Our analysis is based on insurers that are primarily focussed on selling life insurance business and, as a result, some composite companies were excluded from the analysis. For this reason, market share is lower in some territories such as Italy. In some other territories, such as Portugal, market share is lower due to delays in the publication of the SFCRs.

[1] Group SFCRs were published in July 2017 and some insurers were required to publish their SFCRs earlier where they had a year-end reporting date between 30 June 2016 and 31 December 2016.

FIGURE 1: EUROPEAN COUNTRIES INCLUDED IN THE ANALYSIS



UNDERLYING DATA

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

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

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

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

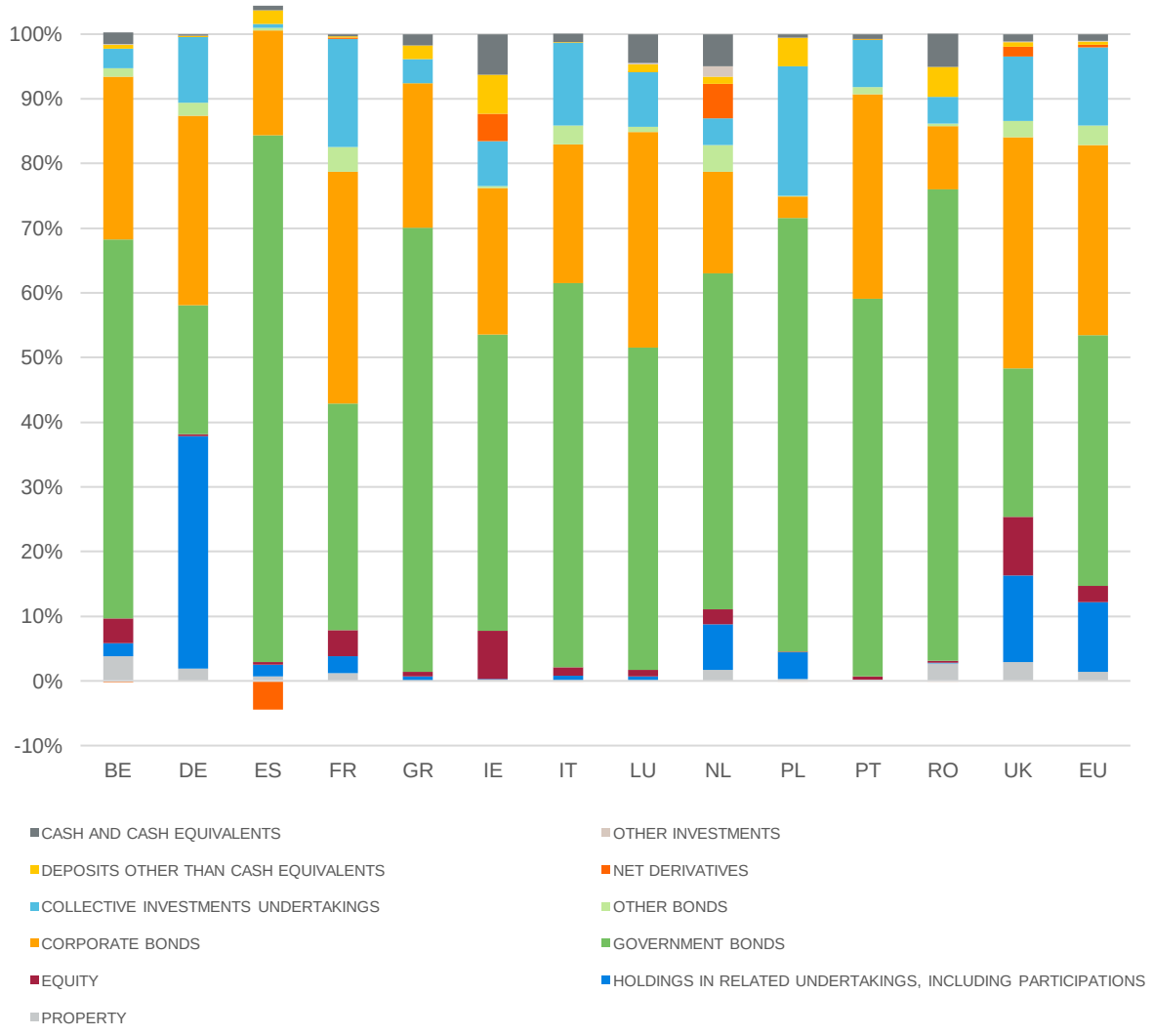
Analysis of European life insurers

Analysis of balance sheet

ASSETS

The chart in Figure 2 shows the split of financial investments held by life insurers across European countries, with the total EU figures represented in the last bar on the chart, labelled as 'EU.' This chart comprises financial investments classified as 'Investments (other than assets held for index-linked and unit-linked contracts)' and 'Cash and cash equivalents' on the Solvency II balance sheet.

FIGURE 2: SPLIT OF FINANCIAL INVESTMENTS 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 35% and 31% of total financial investments, respectively.

Holdings in related undertakings, including participations, make up over 11% of total financial investments, primarily due to large holdings in Germany (where this investment makes up about 36% of total financial investments) and the UK (where holdings in related undertakings account for 13% of total financial investments).

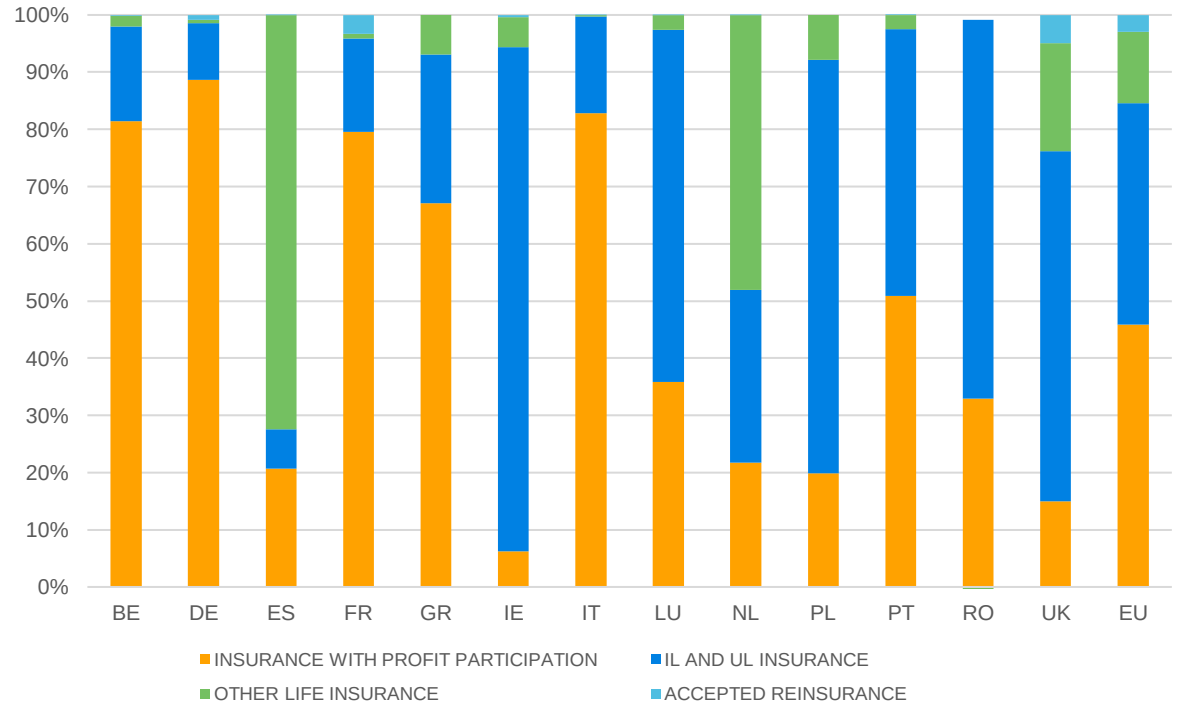
Investments in collective investment schemes make up a further 11% of total financial investments. This is due to large holdings of collective investment schemes by Polish (20%), French (17%), Italian (13%), UK (10%) and German (10%) life insurers.

The derivatives shown in Figure 2 represent the net derivative position. Based on the companies in our sample, Spanish life insurers have a net negative position, meaning that on average the value of derivative liabilities is greater than the value of derivative assets on the Solvency II balance sheet, although this is based on a small sample size.

LIABILITIES

The chart in Figure 3 shows the split of Technical Provisions (TPs) by line of business held by life insurers across European countries.

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



In aggregate, across our sample of European countries, Insurance With Profit Participation makes up almost half of the total TPs for life insurers (46%). Index-Linked (IL) and Unit-Linked (UL) Insurance makes up the second-largest portion of TPs at 39%. The TPs for Belgian, French, German and Italian markets are dominated by Insurance With Profit Participation, whereas in the markets of Ireland, Poland, Luxembourg, Romania and the UK the TPs are predominantly in respect of IL and UL Insurance business. As a result, these two lines of business represent the largest portion of TPs across Europe on average.

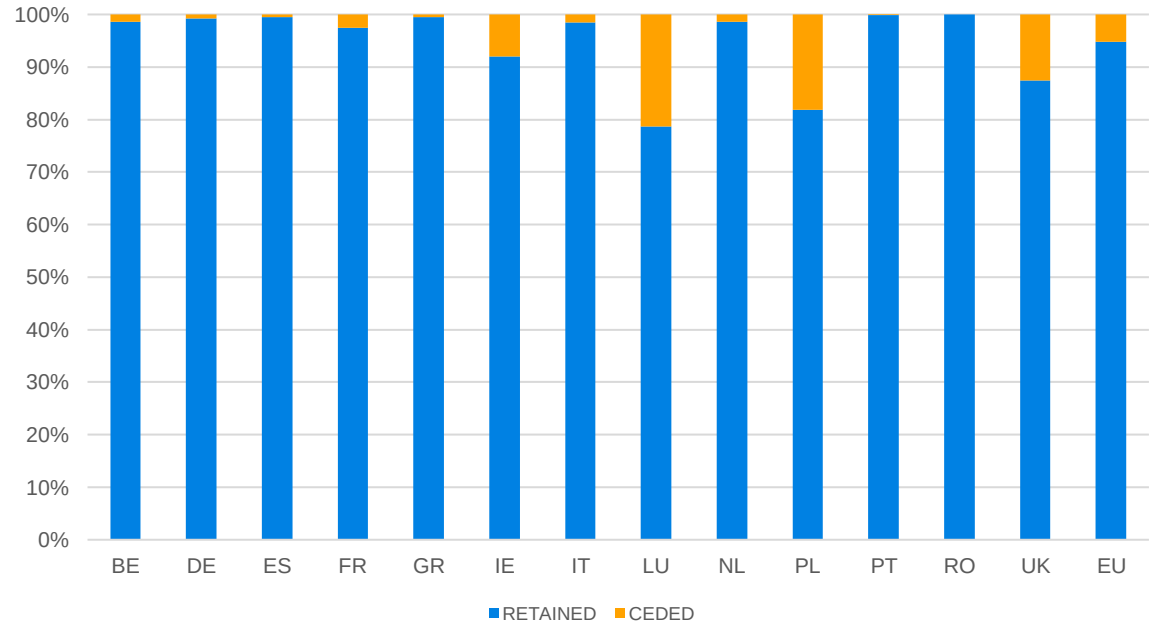
Other Life Insurance (13%), which includes predominantly traditional protection business and Accepted Reinsurance (3%), make up the bulk of the remaining TPs.

The technical provisions in respect of Health Similar to Life Techniques business (HSLT) and Annuities Stemming from Non-life Insurance Contracts have been excluded from Figure 3 as these lines of business are very small on average across Europe, making up about 1% of total TPs.

REINSURANCE

The chart in Figure 4 shows how the use of reinsurance varies across European countries. 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% of the BEL is reinsured across Europe. This varies by country, with Luxembourg and Poland being the most reliant on reinsurance.

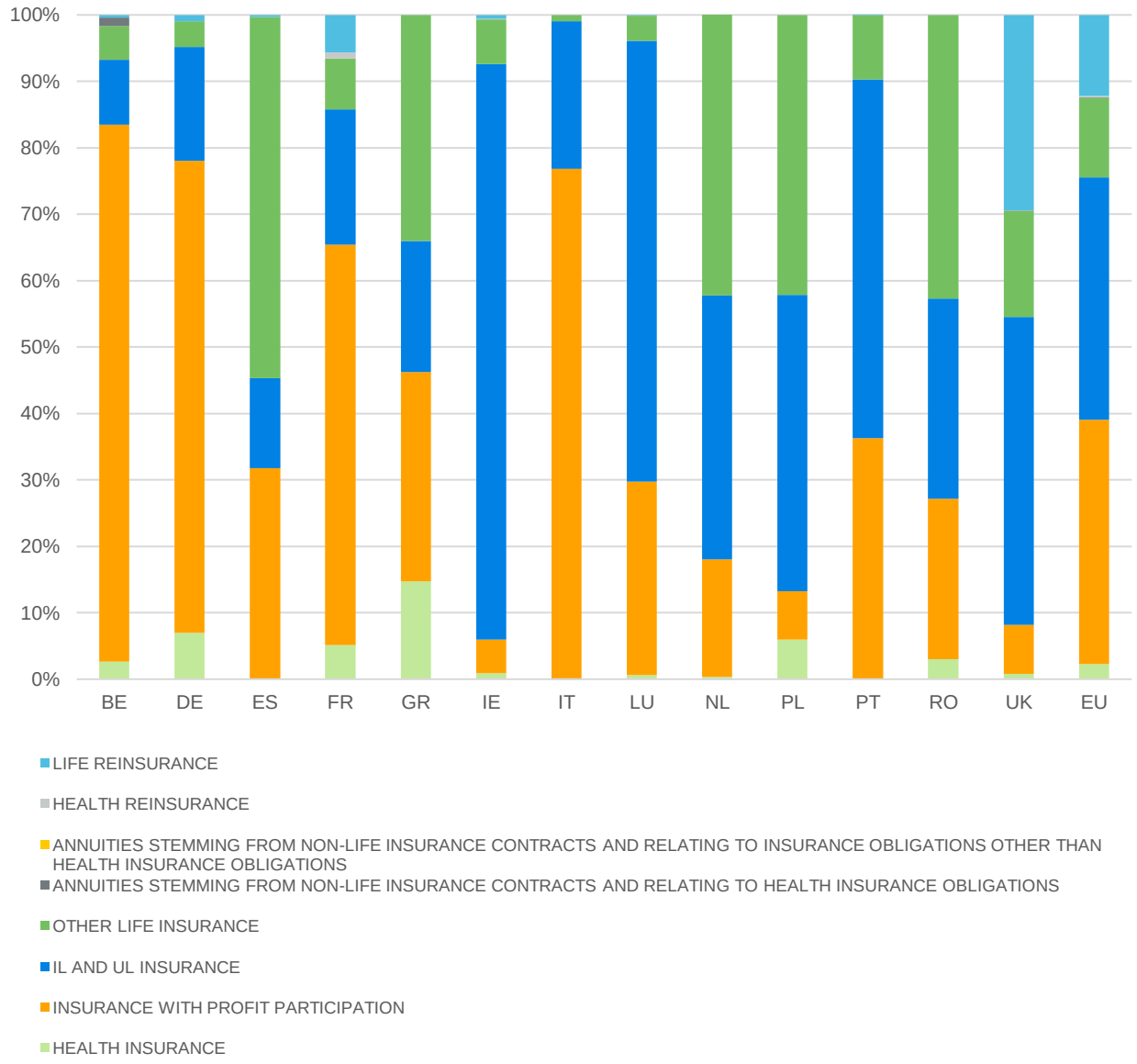
While the average European rate of ceded BEL is 5%, this varies by line of business. On average about 17% of the BEL for traditional life insurance products (Other Life Insurance) is reinsured. For IL and UL Insurance about 8% of the BEL is reinsured on average. This is primarily driven by the UK, German and Polish markets. Overall only about 3% of the BEL for Insurance With Profit Participation is reinsured on average, although it is notable that approximately 60% and 55% of Insurance With Profit Participation is ceded in Luxembourg and Ireland, respectively.

The impact of reinsurance on BEL may not always give the full impact of reinsurance. 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.

Analysis of premiums

The chart in Figure 5 shows the split of GWP by line of business held by life insurers across European countries. GWP includes premiums payable on in-force business and on any new sales over the reporting period.

FIGURE 5: SPLIT OF GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS ACROSS EUROPE

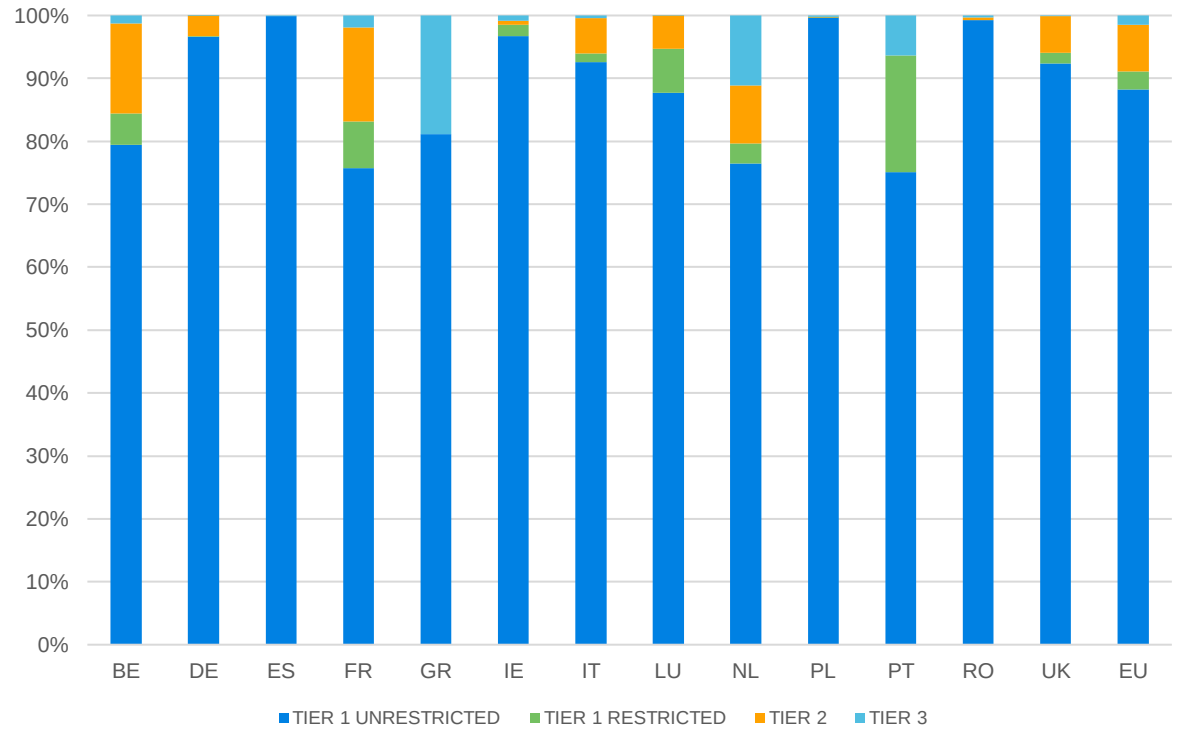


The split of premium volumes by line of business is broadly consistent with the split of TPs by line of business shown in Figure 3 above. On average across our entire sample, Insurance With Profit Participation (36%) and IL and UL Insurance (36%) make up the largest portion of premium volumes.

Analysis of Own Funds

The chart in Figure 6 shows the split of Own Funds across European countries.

FIGURE 6: SPLIT OF OWN FUNDS ACROSS EUROPE



The majority of Own Funds (88%) held by EU insurers in our sample are classified as Tier 1 unrestricted Own Funds. This is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II. Whilst the split of Own Funds varies by country, in general the majority of European insurers have a very high portion of Tier 1 unrestricted Own Funds.

Tier 1 restricted Own Funds make up 3% of Own Funds on average across Europe. Tier 2 Own Funds make up 7% of total Own Funds and Tier 3 Own Funds make up just 1% of total Own Funds on average.

Analysis of solvency coverage

The table in Figure 7 shows the weighted average solvency coverage ratios[2] for the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR) across European countries.

FIGURE 7: SOLVENCY COVERAGE RATIOS BY COUNTRY

	BE	DE	ES	FR	GR	IE	IT	LU	NL	PL	PT	RO	UK	EU
RATIO OF ELIGIBLE OWN FUNDS TO SCR	188%	328%	206%	172%	228%	184%	215%	178%	163%	327%	226%	289%	153%	187%
RATIO OF ELIGIBLE OWN FUNDS TO MCR	385%	759%	458%	331%	533%	515%	471%	485%	349%	1165%	473%	513%	562%	488%

Overall, the average solvency coverage ratios for European life insurers are very healthy, with the weighted averages significantly in excess of the required solvency coverage ratio of 100%. The European average SCR coverage ratio is 187%, based on the companies included in our sample, and the average MCR coverage ratio is 488%.

The chart in Figure 8 shows the distribution of the SCR coverage ratio by country. Note that the distribution shows the median SCR coverage ratio as a white line in the middle of the distribution. The weighted average SCR coverage ratio is also shown, which is comparable to the percentages shown in Figure 7 above.

FIGURE 8: DISTRIBUTION OF SCR COVERAGE RATIO BY COUNTRY[3]

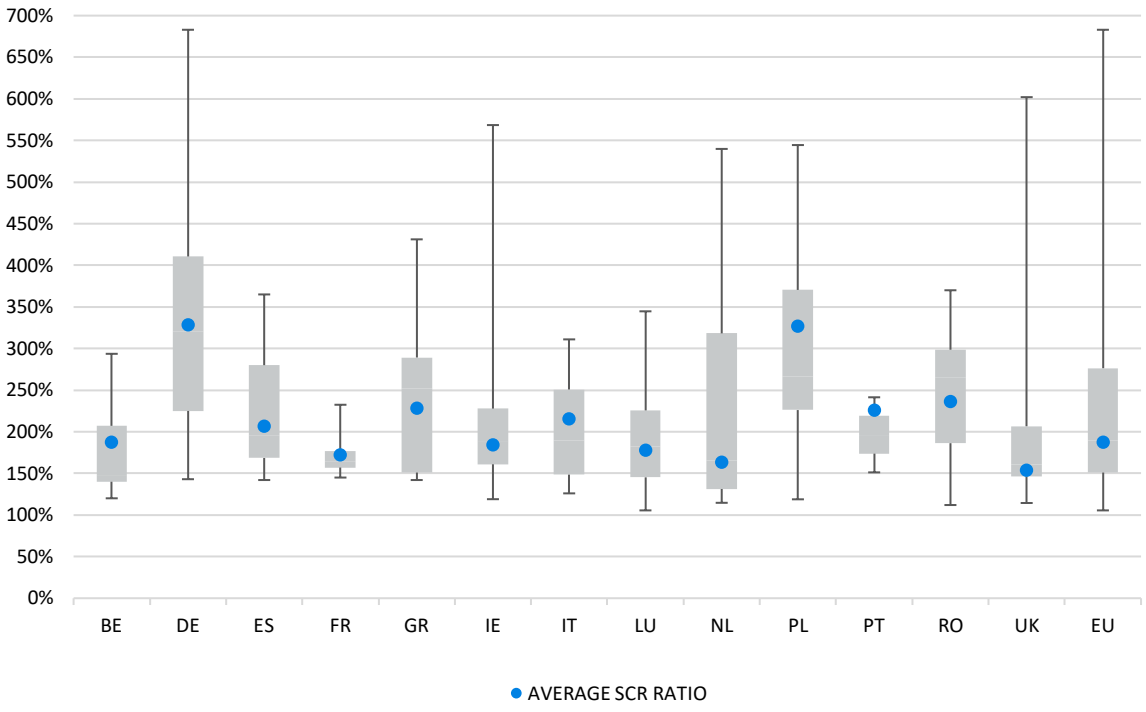


Figure 8 shows that, for most countries, the distribution of SCR coverage ratios is quite wide, although this does depend on the number of life insurers included in the analysis for each country. German, Greek, Polish and Romanian insurers have the highest median solvency coverage ratios across Europe.

[2] The weighted average solvency coverage ratios have been calculated as the sum of the Own Funds of the life insurers in each country divided by the sum of the SCR or MCR of the life insurers in each country.

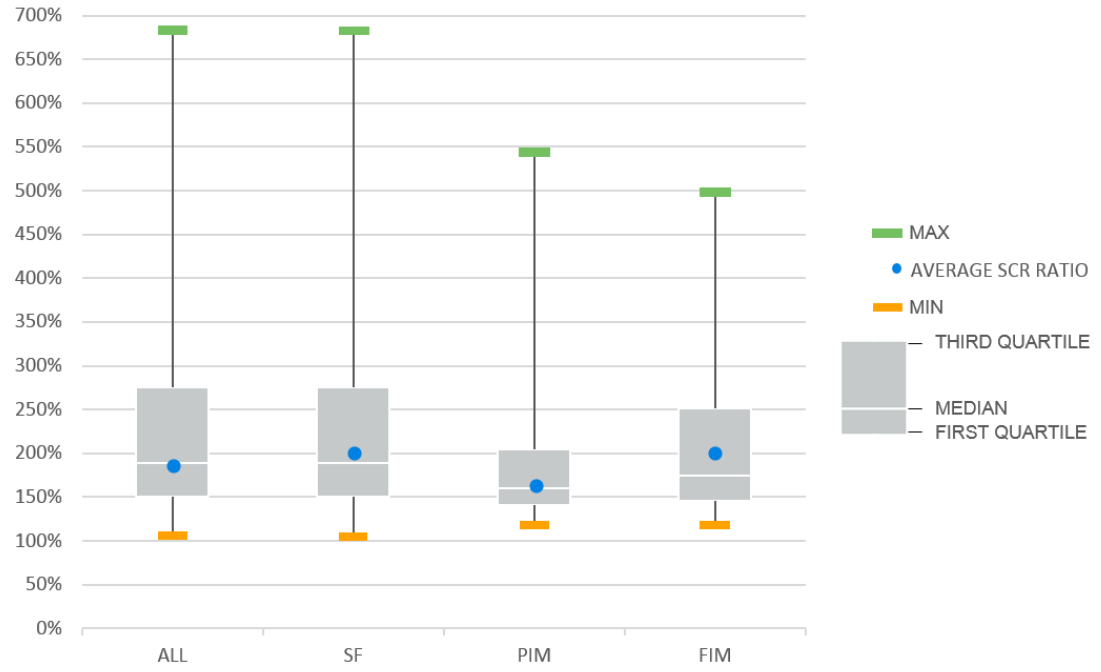
[3] Note that we excluded one UK company from the data underlying Figure 8 as it was an outlier with a SCR coverage ratio of 1,256%.

Based on the life companies included in our analysis, there were no insurers with a SCR coverage ratio below 100% in the first set of SFCRs. The average distribution at a European level shows a minimum SCR coverage ratio of life insurers of 106% (Luxembourg). Figure 8 shows a maximum SCR coverage ratio of 683% (Germany), but this excludes one UK firm that reported a SCR coverage ratio of 1,256%.

The majority (79%) of companies included in our analysis are companies that report under the Solvency II Standard Formula. Of the remaining 21%, 2% were Standard Formula companies using Undertaking Specific Parameters (USPs), 12% were using a Partial Internal Model (PIM) and 7% were using Full Internal Models (FIMs).

The chart in Figure 9 shows a split of the SCR coverage ratio distribution by SCR calculation type (with the USP companies included with the Standard Formula companies). Note that the distribution shows the median SCR coverage ratio as a white line in the middle of the distribution. The weighted average SCR coverage ratio is also shown.

FIGURE 9: DISTRIBUTION OF SCR COVERAGE RATIOS BY SCR CALCULATION METHOD

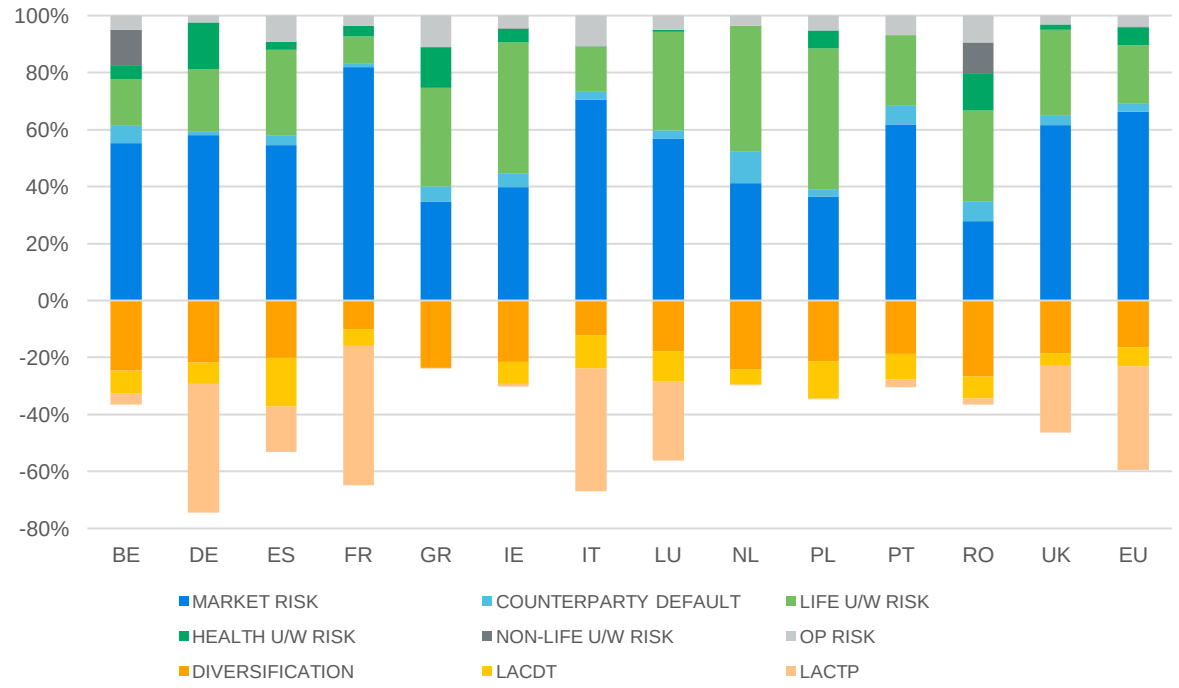


In general the distributions are broadly similar, with the PIM and FIM companies having slightly tighter distributions and slightly lower median SCR coverage ratios than the Standard Formula companies. It is difficult to draw any inferences from this but Figure 9 suggests that capital is more closely managed in companies with a PIM or 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.

Analysis of SCR

The chart in Figure 10 shows the breakdown of the SCR by risk module for Standard Formula (SF) companies across Europe,[4] with the EU average represented in the last bar on the chart labelled as 'EU.'

FIGURE 10: BREAKDOWN OF SCR BY COUNTRY[5]



On average across the EU, Market Risk makes up the highest proportion of the Undiversified SCR (66%) for life insurers. Life Underwriting Risk makes up the second-largest portion (21%). The remainder of the Undiversified SCR is split across Health Underwriting Risk (6%), Operational Risk (4%), Counterparty Default Risk (3%) and Non-life Underwriting Risk (0.5%). There is little or no intangible asset risk on European life insurers' balance sheets on average.

Both Belgium and Romania show some Non-life Underwriting Risk in the breakdown. For the Belgian market, this is due to the fact that all of the major players sell a mixture of life and non-life insurance. Our analysis includes Belgian insurers that are primarily focussed on life insurance but Non-life Underwriting Risk still accounts for 20% of the Undiversified SCR for these companies. Our analysis of the Romanian market also includes insurers selling a mix of life and non-life insurance.

The diversification of risk results in a reduction of 16% of the Undiversified SCR on average across Europe. This is diversification between the risk sub-modules and not within the risk modules. The amount of benefit varies widely by country, with diversification benefit highest where there is a wider spread of risk exposure. For example, Romania has the highest diversification benefit, reflecting the fact that insurers in Romania have a wide range of risk exposures across Market Risk, Life Underwriting Risk, Health Underwriting Risk and Non-life Underwriting Risk, resulting in a reduction of 27%. This is closely followed by Belgium (25%), Greece (24%), the Netherlands (24%) and Germany (22%).

The Loss Absorbing Capacity of Technical Provisions (LACTP) and the Loss Absorbing Capacity of Deferred Tax (LACDT) result in further reductions of 36% and 7%, respectively.

[4] Eighty percent of companies included in our analysis were using the Standard Formula, with 2% using the Standard Formula combined with undertaking-specific parameters (USPs). The companies using USPs are included in the analysis of Standard Formula companies.

[5] 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 firms within the region.

It's not surprising that the countries most exposed to Market Risk (Belgium, Germany, France, Italy) are some of the countries with the largest portion of TPs in respect of Insurance With Profit Participation. The investment guarantees associated with these contracts result in a high exposure to Market Risk. These countries also benefit from significant reductions as a proportion of the Undiversified SCR reflecting the LACTPs associated with Insurance With Profit Participation business. The LACTP in Belgium is lower than the other countries with high levels of Insurance With Profit Participation business.

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.

Long-term guarantee measures

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

- Matching Adjustment (MA)
- Volatility Adjustment (VA)
- Transitional Measures on Technical Provisions (TMTP)

The chart in Figure 11 shows the breakdown of the SCR coverage ratio by the different LTGM and the non-LTGM components for each of the 13 countries we have looked at. The total across all firms in our sample is also shown.

FIGURE 11: BREAKDOWN OF SCR COVERAGE RATIO BY LONG-TERM GUARANTEE MEASURE

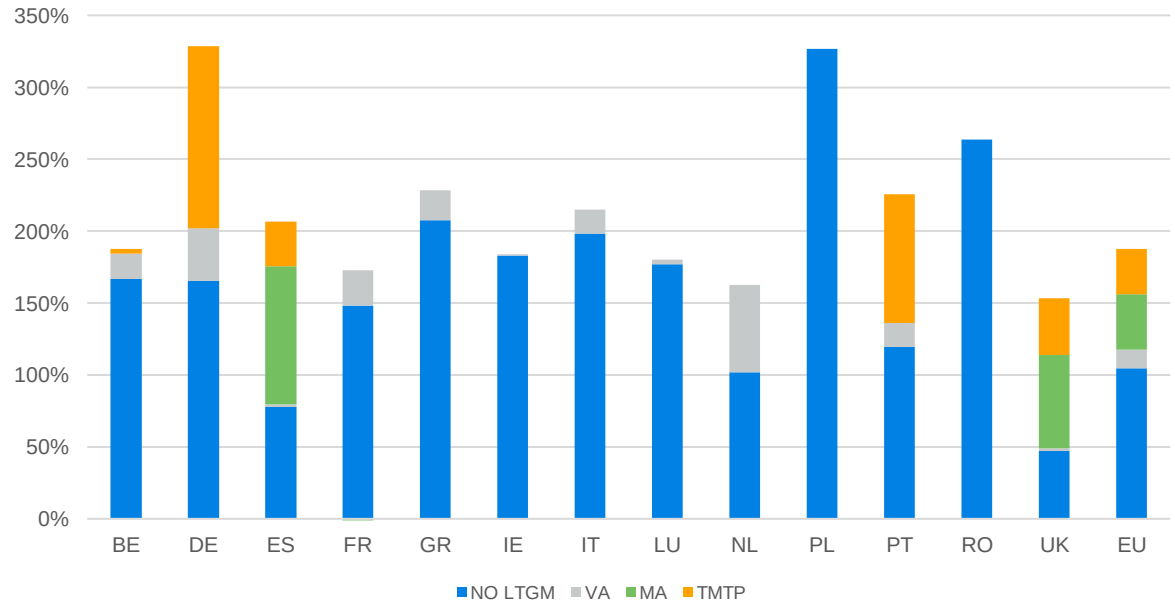


Figure 11 shows that different countries place different levels of reliance on the various LTGMs. The VA is the most widely used measure affecting all countries in our sample, with the exceptions of Poland and Romania. It has the largest impact in the Netherlands, where it contributes an average of 61% to the SCR coverage ratio.

The TMTP is being used in five of the countries, based on our sample. Germany's SCR coverage ratio owes 126% of its total to the TMTP, the greatest percentage of any country in our sample. The other countries that use the TMTP receive an increase of 90% (Portugal), 39% (UK), 31% (Spain) and 3% (Belgium) to their respective SCR coverage ratios.

The MA is the least frequently used LTGM, only being used by insurers in the UK and Spain. It contributes 65% and 96% to each country's SCR coverage ratio, respectively, based on the companies in our sample.

The countries where no companies in our sample use the LTGMs are Poland and Romania, while Luxembourg and Ireland only have small percentages relating to the VA.

Conclusion

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

However, despite the different business mix, overall European life insurers were in a very strong position as at the first set of SFCRs, with an average SCR coverage ratio of 187%. Of the companies included in our analysis, there were no life insurers with a SCR coverage ratio lower than 100%.

Own Funds are predominantly invested in Tier 1 unrestricted Own Funds (88%), which is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II. This further emphasises the strong financial position of European life insurers.

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 generally have a much higher impact on the SCR coverage ratio than the VA.

Analysis of UK life insurers

UK MARKET COVERAGE

Our analysis is based on 49 life insurance companies authorised in the UK. This sample includes domestic companies selling within the UK market only and a small number with cross-border sales. The companies chosen for the report are all mainly life insurers, including mutual societies, annuity writers, bulk purchase annuity providers and closed-book consolidators.

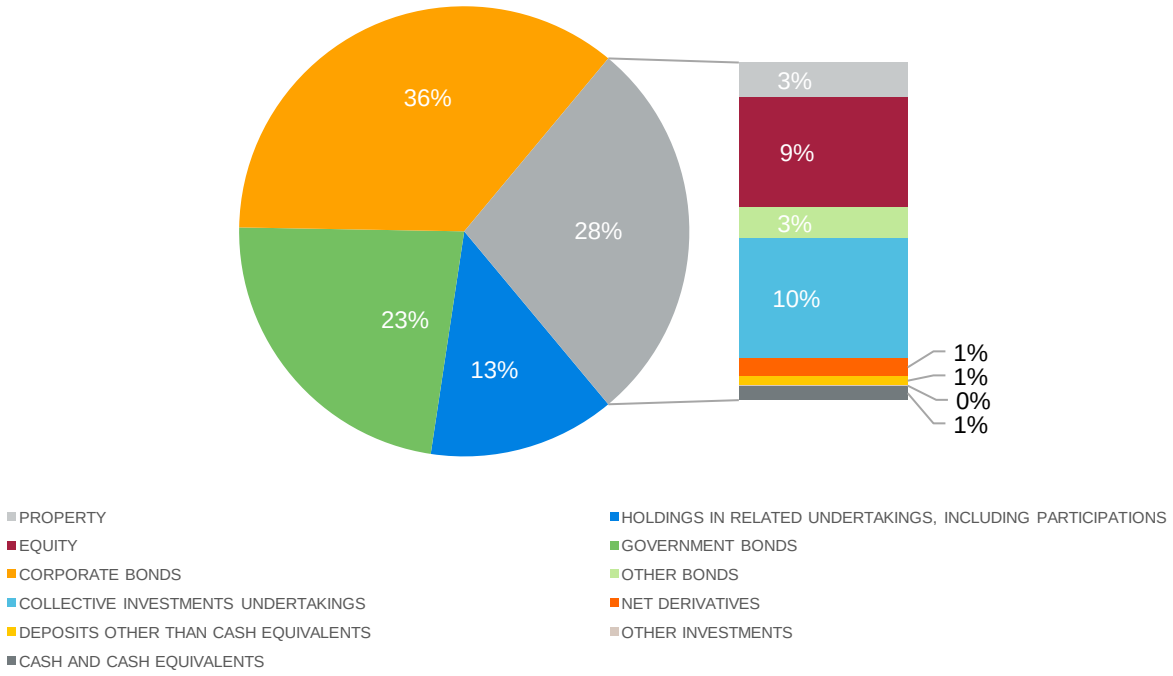
The 49 companies in the UK section of our report represent approximately £148 billion (€174 billion) of GWP and approximately £1,582 billion (€1,857 billion) of Gross Technical Provisions. Appendix 1 contains a list of all the companies included in our analysis.

Analysis of balance sheet

ASSETS

The asset side of the balance sheet for the average UK life company is primarily comprised of financial investments. The breakdown of financial investments for the UK life insurance market based on our sample of firms is shown in Figure 12.

FIGURE 12: SPLIT OF FINANCIAL INVESTMENTS BY ASSET CLASS[6]



UK life insurers are heavily invested in bonds, with a focus on investment in corporate bonds (36%) over government bonds (23%).

The remainder of investments is concentrated in holdings in related undertakings (13%), collectives (10%) and equity (9%), with other bonds and property each accounting for 3% of the total.

Holdings in related undertakings come almost entirely from five of the largest insurers: Standard Life, Aviva, Phoenix Group, Royal London and Prudential, which combined make up 94% of this category. Other insurers exhibit a greater concentration in corporate bonds and collective investments undertakings in the absence of such exposures to related undertakings.

[6] Does not include assets held for index-linked and unit-linked contracts.

LIABILITIES

The chart in Figure 13 shows the breakdown of the total UK life insurers' TPs between the Solvency II lines of business, gross of reinsurance.

FIGURE 13: SPLIT OF TOTAL UK LIFE INSURERS TECHNICAL PROVISIONS BY PRODUCT GROUPS

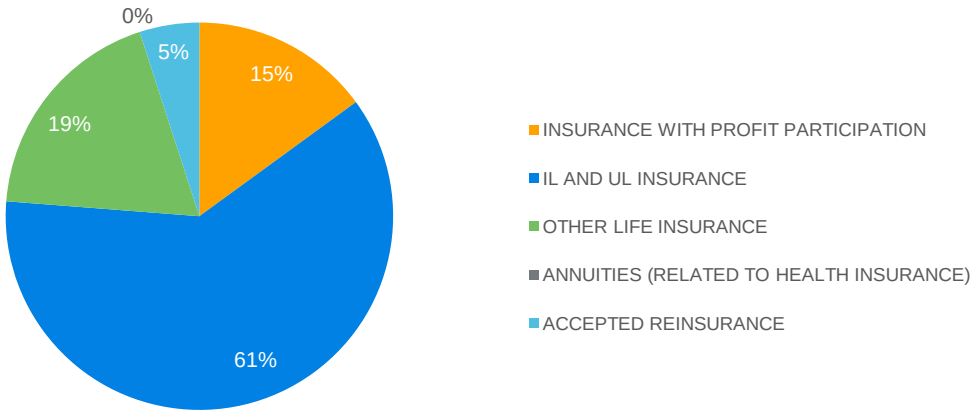
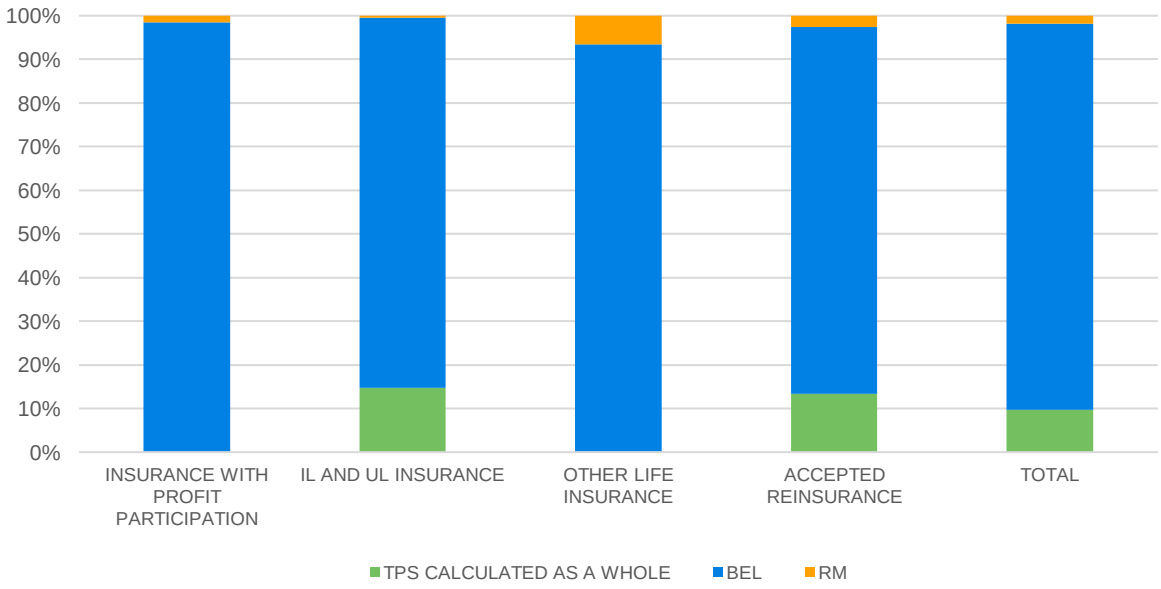


Figure 13 shows that the majority of UK life insurers' TPs are made up of IL and UL Insurance (61.3%).

Other Life Insurance and Insurance With Profit Participation are the other significant product classes, at 18.8% and 15.0%, respectively.

The TPs can be broken down further. A breakdown of the TPs for BEL, Risk Margin (RM) and TPs Calculated as a Whole is shown in Figure 14, split by the Solvency II lines of business:

FIGURE 14: SPLIT OF TECHNICAL PROVISIONS FOR EACH PRODUCT GROUP



TPs Calculated as a Whole are only significant for IL and UL Insurance business. The TPs Calculated as a Whole under the Accepted Reinsurance category is a result of three providers with large proportions of IL and UL Insurance business: JPMorgan Life, Managed Pension Funds and Standard Life Assurance. This method of calculation of the TPs contributes a relatively large proportion of the overall TPs due to the significance of UL funds under management within TPs for the UK. In addition to these three firms with Accepted Reinsurance, the other companies with IL and UL Insurance business TPs Calculated as a Whole are Canada Life, Fidelity Investments Life Insurance, Reliance Mutual and Royal London.

The BEL makes up more than 84% of the TPs for every product group, including 89% of the total insurance market, while the Risk Margin ranges from only 0.4% of IL and UL Insurance TPs to 6.5% of Other Life Insurance TPs.

The table in Figure 15 shows the Risk Margin as a proportion of TPs for each Solvency II line of business.

FIGURE 15: RATIO OF RISK MARGIN TO TECHNICAL PROVISIONS BY PRODUCT GROUP

	RM/TP %
INSURANCE WITH PROFIT PARTICIPATION	1.6%
IL AND UL INSURANCE	0.4%
OTHER LIFE INSURANCE	6.5%
ACCEPTED REINSURANCE	2.5%
TOTAL	1.8%

The Risk Margin for IL and UL Insurance is the smallest proportion of TPs, which could be due to the majority of risks being passed onto policyholders, thus leading to a lower Risk Margin. Other Life Insurance has the most significant Risk Margin at 6.5% of TPs. This category incorporates all other product types, including annuities and protection business, for which the Risk Margin is currently relatively high compared to the other product categories due, in part, to the particularly long duration of annuity liabilities and the relatively small BEL for protection business.

Across our sample of UK companies and across all lines of business, the Risk Margin is about 1.8% of BEL.

The table in Figure 16 shows the split of each component of the total technical provisions by line of business.

FIGURE 16: SPLIT OF LIFE TECHNICAL PROVISION COMPONENTS BY LINES OF BUSINESS

	TPS CALCULATED AS A WHOLE %	BEL %	RISK MARGIN %	TOTAL TECHNICAL PROVISIONS %
INSURANCE WITH PROFIT PARTICIPATION	0.0%	16.7%	12.8%	15.0%
IL AND UL INSURANCE	93.2%	58.8%	13.7%	61.3%
OTHER LIFE INSURANCE	0.0%	19.8%	66.6%	18.8%
ACCEPTED REINSURANCE	6.8%	4.7%	6.9%	5.0%
TOTAL	100.0%	100.0%	100.0%	100.0%

As noted above, the entirety of the TPs Calculated as a Whole are in respect of the IL and UL Insurance and Accepted Reinsurance lines of business. This is not surprising, given that many companies with unit-linked liabilities can directly replicate or observe the unit liability arising from the funds under management using market instruments, and so are reporting this business under TPs Calculated as a Whole, instead of separately calculating the BEL and Risk Margin. However, it should be noted that the reporting of unit-linked liabilities is not consistent across all life insurers, with some insurers reporting the unit-linked fund or funds under management within the BEL figure on the Solvency II balance sheet. This may be a result of the nature of any financial guarantees or policyholder options, which may mean that an individual projection of the unit and non-unit liabilities is required.

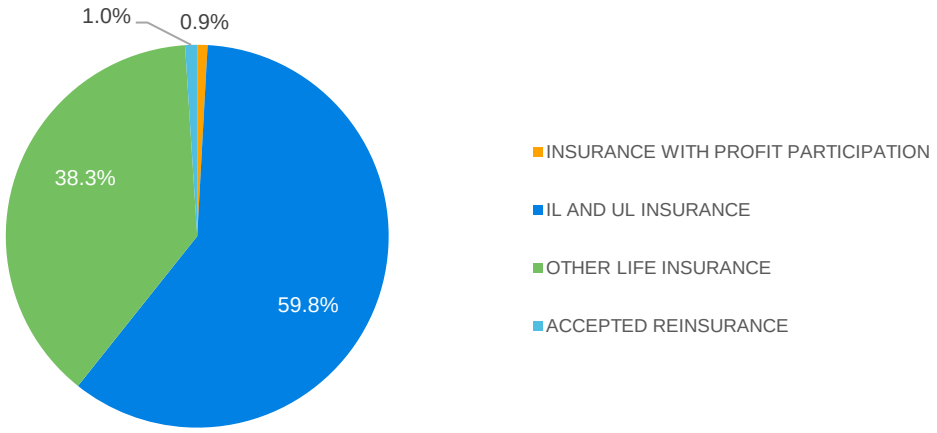
The majority of the BEL comes from the IL and UL Insurance line of business, at 58.8%, despite the fact that the unit liability is excluded from the BEL for some insurers (including this instead in TPs Calculated as a Whole). The rest of the BEL is spread across Other Life Insurance, Insurance With Profit Participation and Accepted Reinsurance. Other Life Insurance and Insurance With Profit Participation have similar proportions of the total BEL at 19.8% and 16.7%, respectively. Accepted Reinsurance is a much smaller proportion, at 4.7%.

The breakdown of the Risk Margin is quite different from that of the BEL, being dominated by Other Life Insurance (66.6%). IL and UL Insurance business accounted for 13.7% of the total Risk Margin, with Insurance With Profit Participation taking up a similar 12.8% of the total.

REINSURANCE

Reinsurance is widely used by UK life insurers, with reinsurance recoverables of 12.3% of total TPs across the 49 life insurers. The chart in Figure 17 shows the split of the total reinsurance by the Solvency II lines of business to which it is attributable.

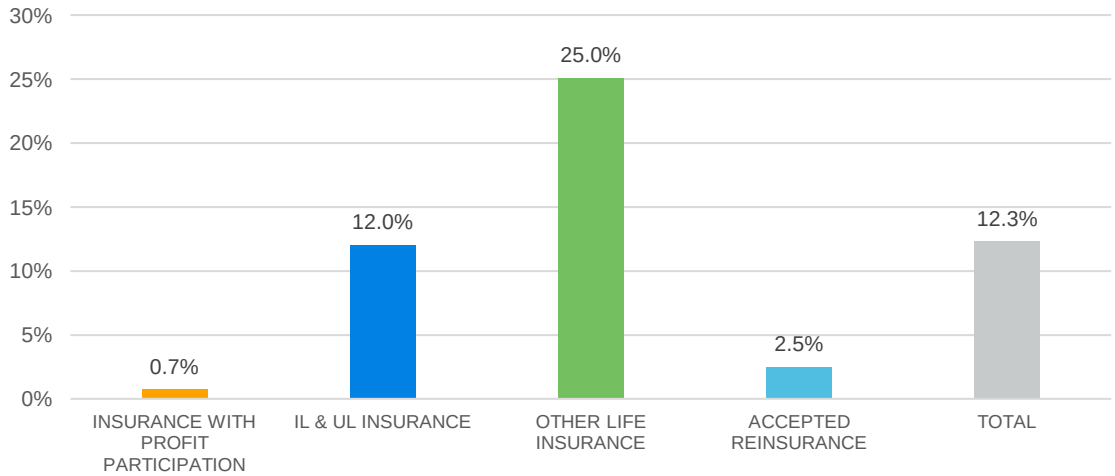
FIGURE 17: SPLIT OF TOTAL REINSURANCE BY SOLVENCY II LINE OF BUSINESS



The majority (by size of reinsurance recoverables) of reinsurance ceded by UK life insurers is in respect of IL and UL Insurance business, making up 59.8% of the total. Another 38.3% of reinsurance ceded is for Other Life Insurance, meaning these two categories make up most of the UK life insurers' total recoverables. Accepted Reinsurance and Insurance With Profit Participation make up 1.0% and 0.9% of the total, respectively.

Figure 18 shows the reinsurance recoverables as a percentage of the TPs for each of the main Solvency II lines of business, alongside the total ceded percentage for UK life insurers as a whole.

FIGURE 18: PERCENTAGE OF TECHNICAL PROVISIONS WITH REINSURANCE



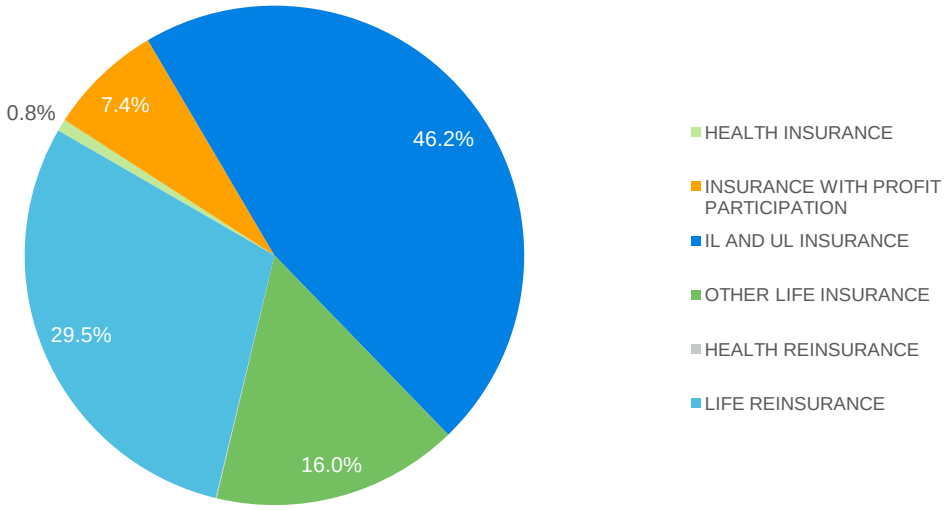
The line of business with the highest ceded level of reinsurance is Other Life Insurance at 25.0%. This is much higher than the second-largest, which is IL and UL Insurance at 12.0%, although due to the size of this market the value of total recoverables for IL and UL Insurance products is actually much higher than for the other categories. The smallest percentage is 0.7% for Insurance With Profit Participation.

Overall the industry has reinsurance recoverables of around 12.3% of total TPs.

Analysis of premiums

Due to the long-term nature of life insurance business, the profile of the current book of business for many companies may be quite different from the products currently sold. The largest share of the market for the UK companies in our sample is IL and UL Insurance, making up 46.2% of GWP in 2016.

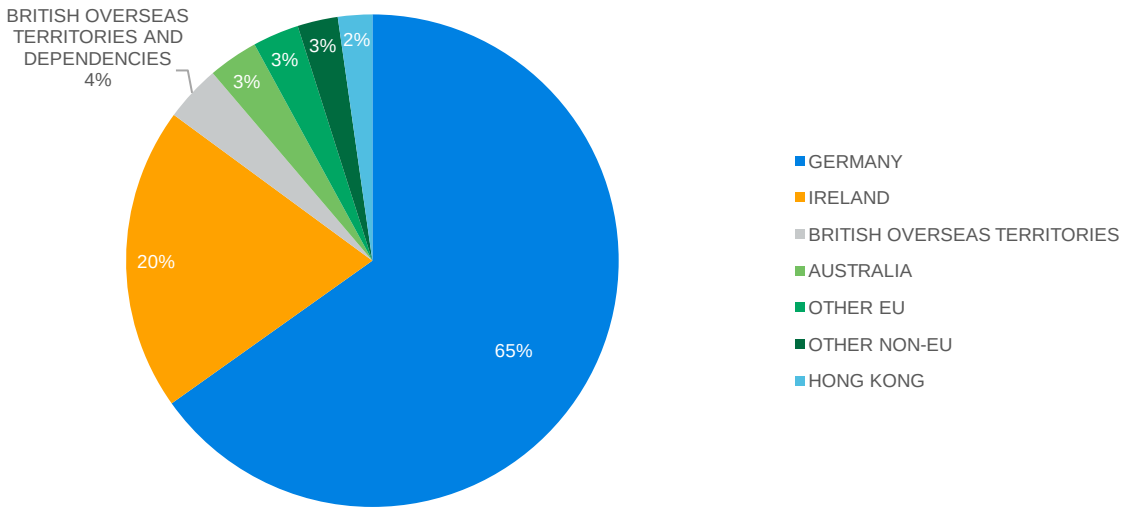
FIGURE 19: SPLIT OF GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS



The rest of the GWP is made up of 29.5% Life Reinsurance, 16.0% Other Life Insurance, 7.4% Insurance With Profit Participation and 0.8% Health Insurance.

There are some insurers selling overseas through their UK companies. The chart in Figure 20 shows a rough breakdown of the cross-border sales by country.

FIGURE 20: CROSS-BORDER SALES BY COUNTRY BY GROSS WRITTEN PREMIUMS



At 65%, Germany makes up a considerable portion of UK cross-border sales. In particular, Standard Life Assurance has a large block of business in Germany which is sold through a German branch.

The next largest country is Ireland, at 20% of UK overseas sales. The remaining countries all only account for small volumes of cross-border sales. Australia and Hong Kong account for 3% and 2%, respectively, while the British overseas territories and dependencies make up 4%. Jersey, Guernsey and Gibraltar are the three largest territories in this category. The remainder of the countries in the list are split between EU and non-EU.

Analysis of Own Funds

The chart in Figure 21 shows the split of Own Funds by tier for all UK life companies in our sample.

FIGURE 21: SPLIT OF ELIGIBLE OWN FUNDS BY TIER

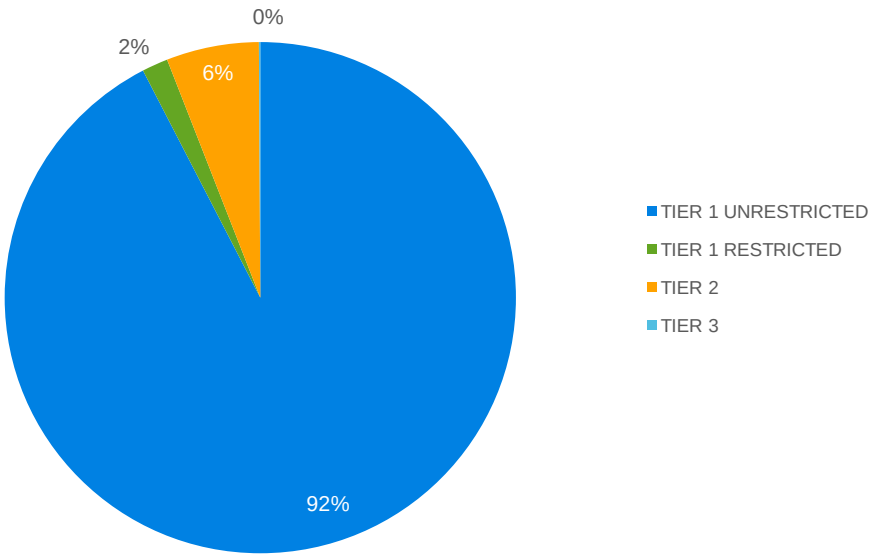


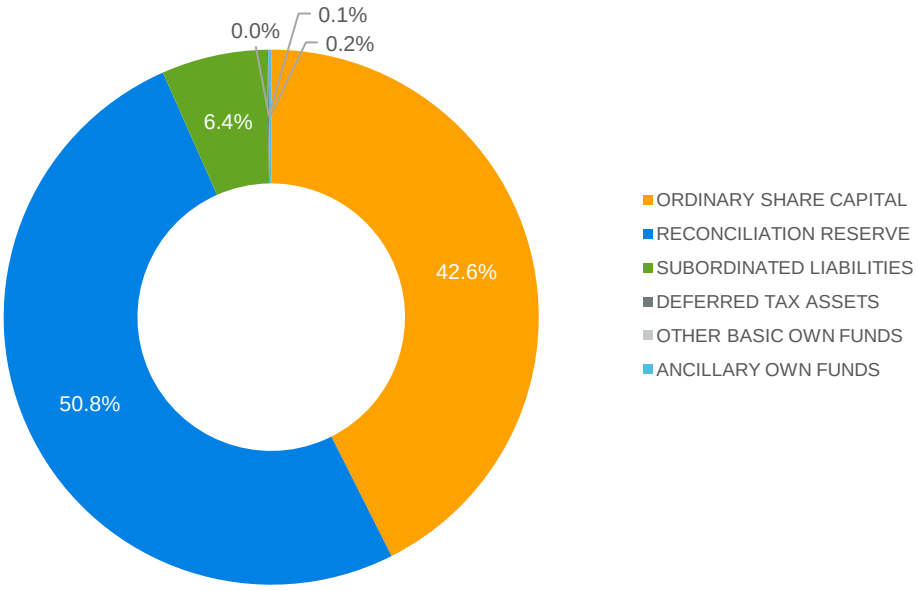
Figure 21 shows that the majority of capital for Own Funds is being held in the highest-quality Tier 1 unrestricted capital. Overall, 92% of UK life insurers' Own Funds are being invested in this highest-quality capital.

Tier 1 restricted capital and Tier 2 capital make up 2% and 6% of the total Own Funds, respectively. Tier 2 is used primarily by the larger firms, with the three largest users of Tier 2 capital accounting for over 50% of the total.

There is a very small amount of Tier 3 capital, which is not apparent on Figure 21 and is less than 1% of the total.

Figure 22 shows the structure of the Own Funds.

FIGURE 22: COMPONENTS OF OWN FUNDS



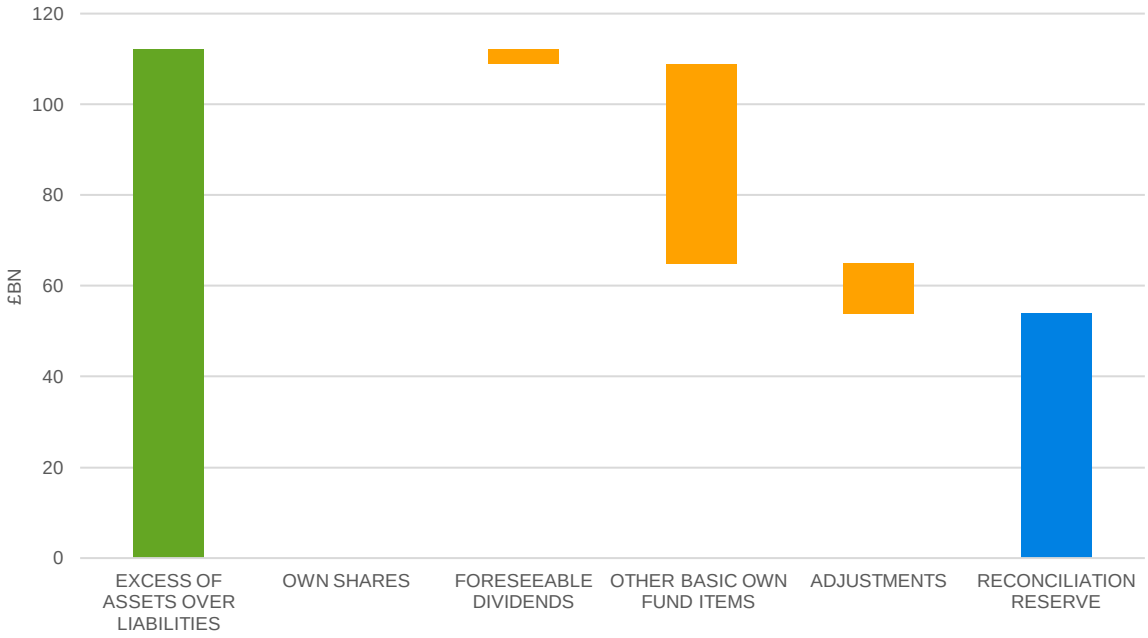
Own Funds within UK life insurers primarily consist of the Reconciliation Reserve (50.8%) and the Ordinary Share Capital (42.6%).

The only other significant constituent of the Own Funds is Subordinated Liabilities at 6.4% of the total.

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

The breakdown of the Reconciliation Reserve is also available from the SFCRs and is shown in the chart in Figure 23. 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 23: CONSTRUCTION OF THE RECONCILIATION RESERVE



Analysis of solvency coverage

The weighted average SCR coverage ratio for our sample of UK life insurers from the first set of SFCRs was 153%, based on figures from companies' public QRTs. This is well in excess of the 100% coverage required, showing that many companies are choosing to hold excess capital to provide security and stability. This is, however, noticeably lower than the European average in our sample of 187%, suggesting that UK insurers on average had less available capital than their counterparts in the rest of Europe.

The average MCR coverage ratio for UK life companies was 564% from the first set of SFCRs. 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 also significantly higher than the European average of 488%.

The average MCR as a percentage of the SCR was 26%. This indicates that for the average company the linear MCR is calculated within the limits of 25% to 45% of the SCR, i.e., the cap or floor is not biting for all firms, but that it is likely very close to the 25% floor for many firms.

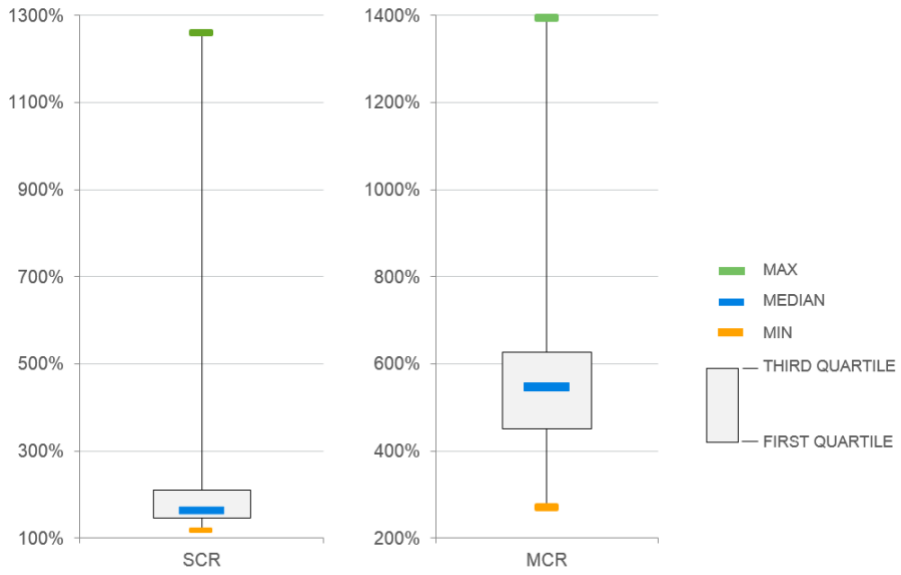
The table in Figure 24 compares the UK to the European average solvency coverage ratios.

FIGURE 24: AVERAGE SCR AND MCR COVERAGE RATIOS

	UK AVERAGE	EUROPEAN AVERAGE
RATIO OF ELIGIBLE OWN FUNDS TO SCR	153%	187%
RATIO OF ELIGIBLE OWN FUNDS TO MCR	564%	488%
MCR AS A % OF THE SCR	26%	36%

The distribution of the SCR and MCR ratios is shown in the chart in Figure 25.

FIGURE 25: 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 25. The solvency coverage has a broad spread ranging from 114% to 1,256% for the companies in the sample. Half of the companies have a SCR coverage ratio that falls between 147% and 210%. This is a very narrow range considering the overall spread of coverage ratios. It is also notable that the upper quartile makes up almost the entirety of the range. The maximum SCR coverage ratio of 1,256% is more than double the second-largest at 602%. In general the firms with the higher SCR coverage ratios are the life insurance companies of asset managers.

The MCR coverage ratio has a range that is similar in size (270% to 1,395%) to the SCR coverage ratio, but has a higher maximum and minimum. Half of the companies have an MCR coverage ratio that falls between 451% and 627%.

There are a number of UK life insurers using either PIMs or FIMs. Of the 49 insurers in our analysis, there are 11 PIM users and seven FIM users, with the remaining 31 using the SF.

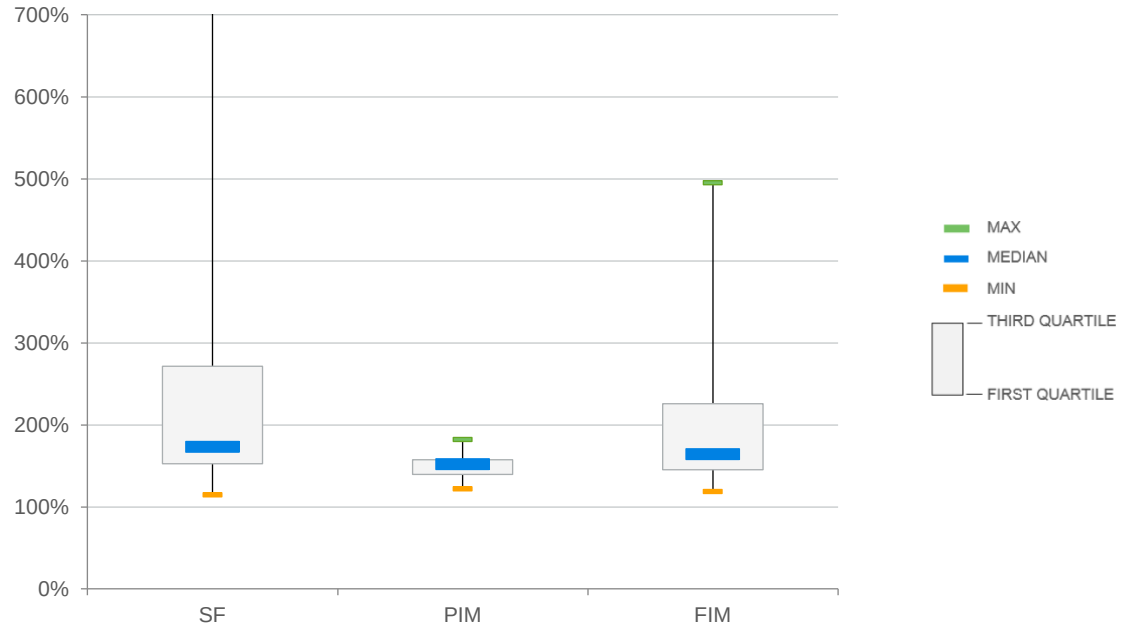
The table in Figure 26 shows the average SCR coverage ratio for firms aggregated by their SCR methodologies (SF, PIM and FIM).

FIGURE 26: AVERAGE SCR FOR STANDARD FORMULA, PARTIAL INTERNAL MODEL AND FULL INTERNAL MODEL FIRMS

	SCR COVERAGE RATIO
FIRMS USING SF	173%
FIRMS USING PIM	152%
FIRMS USING FIM	164%

The weighted average SCR coverage ratio for firms using the Standard Formula is higher (173%) than for those firms using an internal model, with a weighted average ratio of 152% for a PIM and 164% for a FIM. The distribution of the SCR coverage ratios for each of the three different methodologies is shown in the chart in Figure 27.

FIGURE 27: DISTRIBUTION OF SCR FOR INTERNAL MODEL FIRMS VERSUS STANDARD FORMULA[7]



The SCRs for internal model firms, PIM firms in particular, have a lower spread than the Standard Formula firms. The firms using a PIM in our sample tend to be part of a group and the result may suggest that firms within a group manage their capital more actively and do not hold significant surplus capital at the subsidiary level. In contrast, the FIM firms in our sample tend to be more specialised in the products they offer and business they have sold, e.g., mono-line annuity firms. These firms are not necessarily a group and so may not manage capital as actively. The specialist nature of the firms may make it easier for them to apply a FIM compared to large companies selling (or having sold) a diverse range of products.

[7] The scale has been amended to only reach 700% coverage ratio because when the maximum of 1,256% for the Standard Formula firms is included it makes the rest of the chart more difficult to read. This limit on the scale only excludes the one Standard Formula firm with a coverage ratio of 1,256%.

Analysis of SCR

We analysed the various SCR components for companies using the SF, a PIM or a FIM along with the sample of companies as a whole in order to calculate the average contribution to the SCR for each sub-module.

FIGURE 28: AVERAGE SCR BREAKDOWN OF SCR BY SF, PIM AND FIM[8]

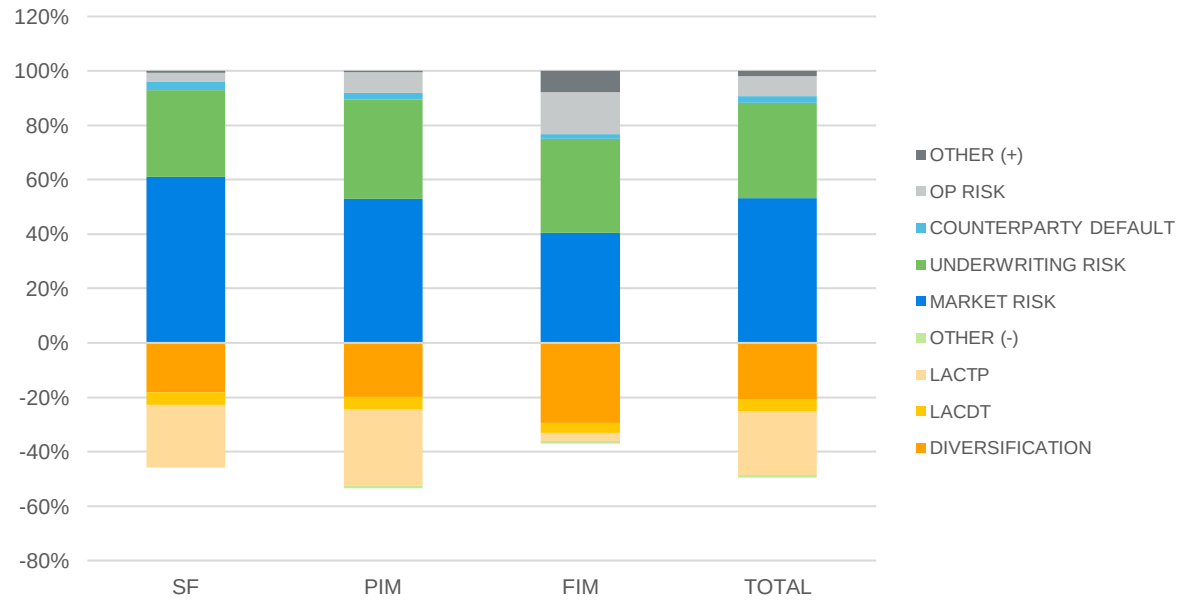


Figure 28 shows that life insurers in the UK are primarily exposed to Market Risk, contributing 61% of the Undiversified SCR for SF firms, 53% for PIM firms and 40% for FIM firms. This gives an overall proportion of 53% of the Undiversified SCR.

Underwriting Risk for UK life insurers contributes 32%, 37% and 35% of the Undiversified SCR for SF, PIM and FIM firms, respectively, with the vast majority coming from Life Underwriting Risk and the remainder from Health Underwriting Risk from Health Insurance provided by UK life insurers. The Non-life Underwriting risk sub-module is 0% of the Undiversified SCR as we have only considered insurers only selling life insurance business in this report.

Counterparty Default Risk is the only other risk that contributes to the Basic Solvency Capital Requirement. It makes up only 2% to 3% of the Undiversified SCR for each group, implying that it is not as significant as either Market Risk or Underwriting Risk.

Operational Risk only contributes 3% of the Undiversified SCR for SF firms, but adds 8% and 15%, respectively, to PIM and FIM firms. This result is not unexpected as Operational Risk is often included within internal models, with firms deciding that the factor-based approach prescribed by the SF does not appropriately reflect their risk exposures.

The diversification benefit for the UK life insurance market is large, giving a reduction of 18% of the Undiversified SCR for SF firms, 20% for PIM firms and 29% for FIM firms. This is diversification between the risk modules and not within the risk sub-modules. The higher diversification benefits for PIM and FIM firms may suggest a departure from the SF method of aggregation.

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

1. LACTP, which reflects the ability to reduce future discretionary benefits under stress scenarios.
2. LACDT.

[8] 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 firms within the region.

The published results suggest that UK insurers are heavily utilising the LACTP adjustment, resulting in an average reduction of 23% of the Undiversified SCR. In reality, only nine insurers are using the adjustment, with one insurer accounting for 64% of the entire LACTP of UK life insurers.

There are 22 companies using the LACDT adjustment, but the overall impact is much smaller, only allowing for a reduction of 4% to 5% of the Undiversified SCR across the different methodologies.

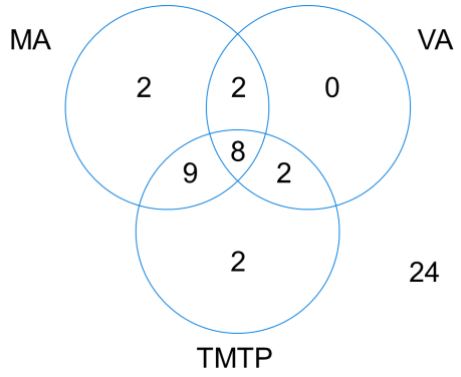
Other adjustments have been split into net increases and net decreases to the SCR. Net increases, Other (+), gives 2% of the Undiversified SCR across all firms, while net decreases, Other (-), gives a deduction of 1% of the Undiversified SCR across all firms. Other (+) is much higher for FIM firms than for the other categories, standing at 8% of the Undiversified SCR.

Long-term guarantee measures

There are a significant number of UK life insurers using the LTGMs included in the list of companies for this report.

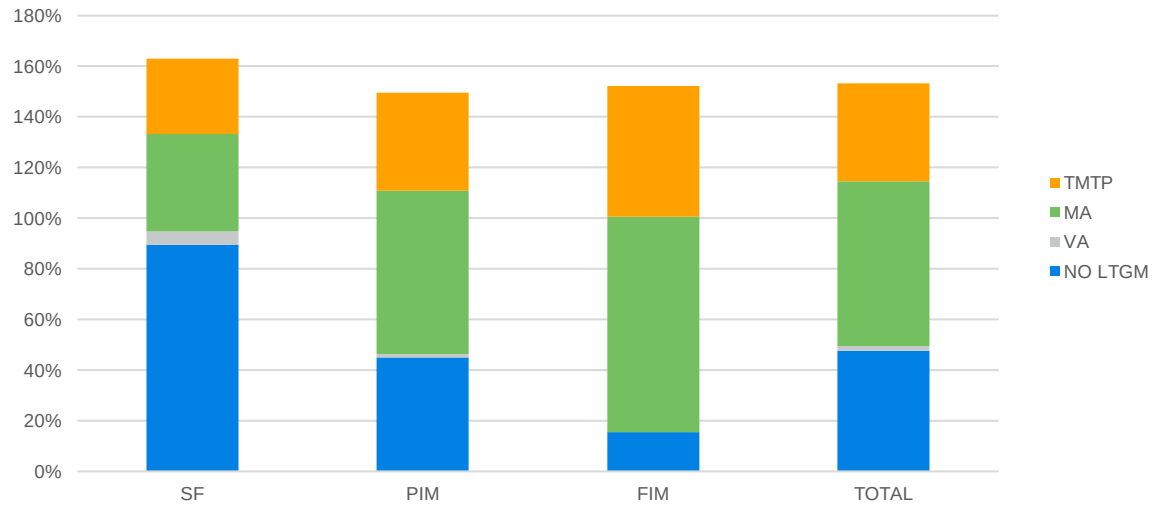
Of the firms in our list there are 12 firms using the VA, 21 using the MA and 21 using the TMTP, with some companies using combinations of them as shown in the Venn diagram in Figure 29. Of the UK life companies in our sample, 24 did not use any of the LTGMs.

FIGURE 29: NUMBER OF COMPANIES USING EACH LONG-TERM GUARANTEE MEASURE



The chart in Figure 30 shows the breakdown of the SCR coverage ratio by each LTGM and the result if no LTGMs were applied. The breakdown is shown for Standard Formula, PIM and FIM firms, alongside the total across all firms.

FIGURE 30: BREAKDOWN OF SCR COVERAGE RATIO BY LONG-TERM GUARANTEE MEASURE



The general picture seen in Figure 30 is that firms using a FIM have the highest reliance on LTGM, followed by firms using a PIM, with firms using the SF in general having the least reliance on them.

The VA has the lowest impact across all categories, with no material impact on firms using a FIM.

The TMTP is the next largest LTGM for each category, with highest impact on the SCR coverage ratio for firms using a FIM. The TMTP has proven to be popular in the UK, especially amongst annuity firms, primarily because of the relatively high Risk Margin for annuity business compared to other business. A number of the firms using a FIM are mono-line annuity firms.

The MA makes up the largest proportion of the SCR coverage ratios for all three categories, on average accounting for 65% of the total SCR coverage ratio for firms in the UK. This is also highest for the FIM firms, at 85%, which is again most likely due to the mono-line annuity firms in this group using the MA to allow for the matching of their long-term liabilities with illiquid assets.

Conclusion

UK life insurers disclosed healthy results in the first set of SFCRs, with an average SCR coverage ratio of 153%. No insurers in this report had a coverage ratio of less than 100%, but some had extremely high ratios, depending on a wide range of factors. The Matching Adjustment and the Transitional Measures on Technical Provisions have proven to be popular in the UK, leading to a significant increase in the SCR coverage ratio for some firms.

IL and UL Insurance business is the dominant product grouping for UK life insurers, when measured by TPs, reinsurance ceded and gross written premiums.

The most significant risks to UK life insurers are Market Risk and Underwriting Risk, which is consistent with what is being seen across Europe. LACTP is the largest deduction to the SCR in the UK.

Own Funds are primarily invested in Tier 1 unrestricted Own Funds, which is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II. The rest is kept as lower-level capital and is primarily held by the largest firms.

The LTGMs used by UK Life companies are primarily the MA and the TMTP, with the MA having the largest impact across SF, PIM and FIM firms. In contrast, the VA has very little impact in the UK.

Appendix 1: UK life companies included in the analysis

- Abbey Life
- Aberdeen AM L&P
- ACE Europe Life
- AIG Life Limited
- Aviva Annuity
- Aviva Investors Pensions
- Aviva Life & Pensions
- AXA Wealth
- Baillie Gifford
- BlackRock Life
- Canada Life Limited
- Countrywide Assured plc
- FIL Life Ins
- Forester Life
- Friends Life & Pensions
- Friends Life
- Invesco Perpetual Life
- JPMorgan Life
- Just Retirement
- Legal & General Assurance Society
- Legal & General Pensions Management
- Liverpool Victoria Friendly Society
- Managed Pension Funds
- MGM Advantage Life
- Old Mutual Wealth Life & Pensions
- Old Mutual Wealth Life
- Pacific Life Re
- Partnership Life Assurance Company
- Pension Insurance Corporation
- Phoenix Life Assurance
- Phoenix Life
- Prudential Pensions
- The Prudential Assurance Company
- ReAssure
- Reliance Mutual Insurance Society
- Rothesay Life
- Royal London Mutual Society
- Schroder Pensions Management
- Scottish Equitable
- Scottish Widows
- St James's Place UK
- Standard Life Pensions Fund
- Standard Life Assurance
- Sun Life of Canada UK
- The Equitable Life Assurance Society
- UBS Asset Management Life
- Vitality Life
- Wesleyan Assurance Society
- Zurich Assurance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CONTACT

Stuart Reynolds
stuart.reynolds@milliman.com

Eoin O'Byrne
eoin.o'byrne@milliman.com

Neil Christy
neil.christy@milliman.com