MILLIMAN BRIEFING NOTE

Solvency Capital Requirement Coverage Ratios

Statistics published by EIOPA in December 2016

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In this briefing note, we summarise some statistics on the Solvency II Solvency Capital Requirement (**"SCR"**) coverage ratios of companies in Europe, along with some other interesting information, which was contained in EIOPA's Financial Stability Report[1] **("the Financial Stability Report")** and its EU-wide Insurance Stress Test Report[2] **("the Stress Test Report")**, both published in December 2016. We also reference EIOPA's report on Long Term Guarantee measures[3] **("the LTG report")** which was also published in December 2016.

Since the introduction of Solvency II, insurance companies are required to hold eligible own funds at least equal to their SCR at all times in order to avoid supervisory intervention, i.e. the SCR coverage ratio, defined as eligible own funds divided by SCR, is required to be at least 100%.

EIOPA has recently published its Financial Stability Report, containing information on the SCR coverage ratios of companies in Europe as at 30th June 2016. Figures in the report are based on 84 insurance groups, representing approximately 77% of total assets of insurers subject to Solvency II.

EIOPA has also published the results of the 2016 EU-wide insurance stress tests containing information on the SCR coverage ratios of companies as at 1st January 2016. The figures in this report are based on 236 companies at solo level, perceived to be particularly vulnerable to an extended period of low interest rates due to their relatively long-term life business, often involving interest rate guarantees. This group represents almost 60% of the total assets held by EU insurers.

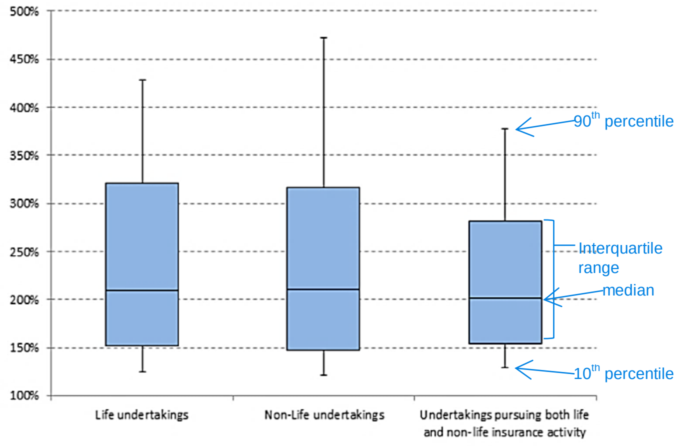
1 https://eiopa.europa.eu/Pages/Financial-stability-and-crisis-prevention/Financial-Stability-Report-December-2016.aspx
2 https://eiopa.europa.eu/Pages/Financial-stability-and-crisis-prevention/Stress-test-2016.aspx
3 https://eiopa.europa.eu/Publications/Responses/EIOPA-BoS-16-279_LTG_REPORT_2016.pdf

SCR Coverage Ratio Headlines

THE FINANCIAL STABILITY REPORT

According to the Financial Stability Report all insurance groups reported sufficient SCR coverage at 30th June 2016, i.e. the distribution of SCR coverage ratios was comfortably above 100% for life and non-life undertakings and undertakings pursuing both life and non-life business. The median SCR coverage ratio for life companies was 209%, which was almost equal to the median SCR coverage ratio of 210% for non-life companies. The median for undertakings pursuing both life and non-life business was slightly less at 201%. While, overall, the position is very positive there was considerable variation amongst companies, which can be seen in the graph in Figure 1:

FIGURE 1: SCR COVERAGE RATIO (IN PERCENT; MEDIAN, INTERQUARTILE RANGE AND 10TH AND 90TH PERCENTILE)



Source: EIOPA (sample based on 2600 solo insurance undertakings in EEA)

Reporting reference data: 30/06/2016

While the median is similar for each group, the range in which 25% to 75% of ratios lies (the "inter-quartile range") for undertakings pursuing both life and non-life business is narrower than that for undertakings writing either just life or just non-life business. The 90th percentile, i.e. the point at which 90% of values are smaller, is also a lot higher for non-life companies, at about 475%. This compares to a 90th percentile of about 425% for life undertakings and about 380% for undertakings pursuing both life and non-life business, indicating a greater degree of variability in the non-life sector.

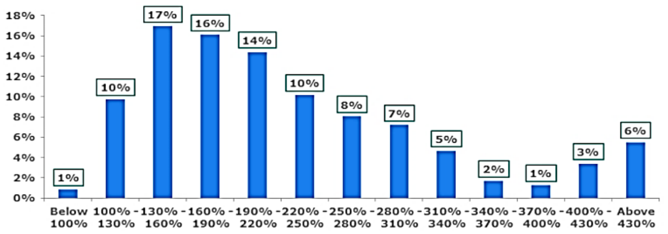
THE STRESS TEST REPORT

The Stress Test Report also indicated that, at an aggregate level, undertakings had healthy SCR coverage at 1st January 2016. Some of the headline results from this report are as follows:

- The overall combined SCR coverage ratio for all companies included in the report was 196%
- The overall SCR ratio was 159% for Ireland, 272% for Germany, 196% for France and 142% for the UK
- More than 70% of participants had SCR coverage above 160%
- Two undertakings (representing 0.02% of the total assets in the sample) had a SCR ratio below 100%
- The overall SCR ratio falls to 136% if all Long Term Guarantee (**"LTG"**) and transitional measures are excluded (and 32 undertakings fall below 100% coverage in this case).

The distribution of SCR ratios is shown in Figure 2. The highest percentage of SCR ratios are in the 130% - 160% band, with almost 50% of ratios between 130% and 220%.

FIGURE 2: DISTRIBUTION OF SCR RATIOS (BASELINE RATIOS FROM THE STRESS TEST REPORT)

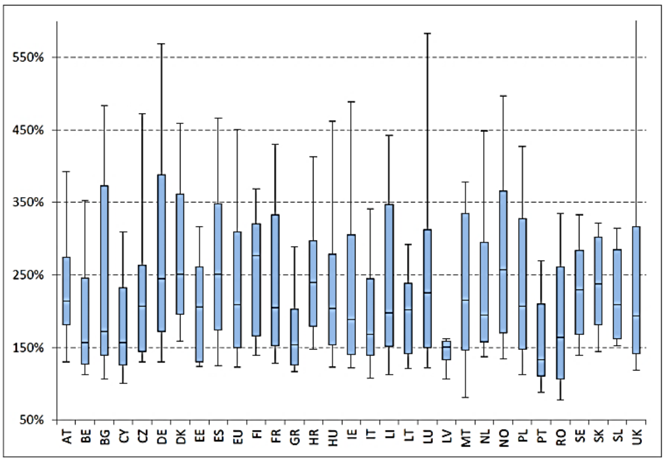


Reporting reference date: 01/01/2016

SCR Coverage Ratio by Country

The following graph from the Financial Stability Report shows the SCR coverage ratio by country. As at 30th June 2016, the average SCR coverage ratio for all companies combined was healthy. However, there is considerable variation between countries. The 10th percentile of Malta, Portugal and Romania falls below 100% at country level. The median for Ireland was lower than the majority of countries, but the inter-quartile range was not out of line with most other countries, and the 90th percentile was one of the highest of all of the countries included. The distribution for France was very similar to Ireland, though the 90th percentile for Ireland was higher. The 90th percentile for the UK was the highest of all of the countries and the 90th percentile for Germany was the third highest of all of the countries.

FIGURE 3: SCR COVERAGE RATIO BY COUNTRY (IN PERCENT; MEDIAN, INTERQUARTILE RANGE AND 10TH AND 90TH PERCENTILE)



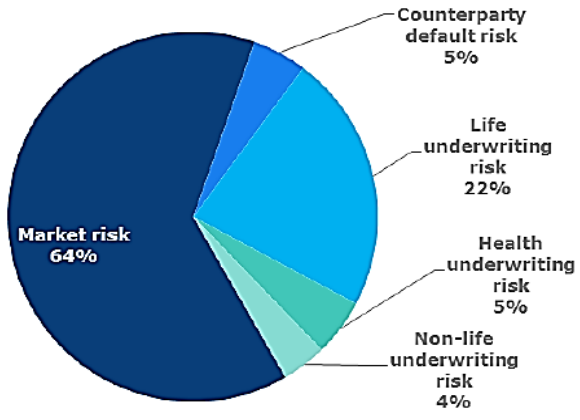
Source: EIOPA (sample based on 2600 solo insurance undertakings in EEA)

Reporting reference data: 30/06/2016

SCR Breakdown

According to the Stress Test Report, market risk accounts for 64% of the net[4] SCR, before diversification benefits, for standard formula users[5]. The second highest proportion of the net SCR is for Life underwriting risk, which accounts for 22%. The graph in Figure 4 shows the full breakdown of the SCR components for standard formula users at 1st January 2016.

FIGURE 4: NET BASIC SCR BREAKDOWN FOR STANDARD FORMULA USERS (FROM THE STRESS TEST REPORT)



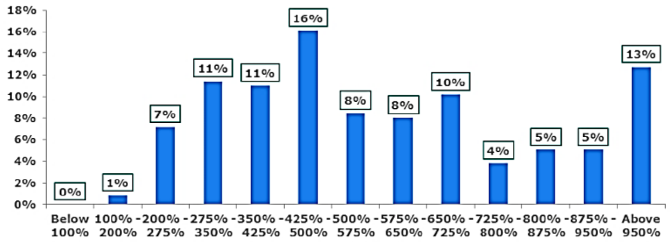
Reporting reference date: 01/01/2016

[4] net of the impact of changes to future discretionary benefits.
[5] 81% of the companies in the sample were standard formula users.

Minimum Capital Requirement

The weighted average Minimum Capital Requirement (**"MCR"**) ratio, defined as eligible own funds divided by MCR, for all companies included in the Stress Test Report, was 533%. The surplus of own funds over the MCR was almost €450 billion. The distribution of MCR ratios is shown in Figure 5. The MCR ratios are generally high, with only 1% of companies with an MCR ratio less than 200%, and none with an MCR ratio below 100%. The MCR ratio was 428% for Ireland, 638% for Germany, 414% for France and 516% for the UK.

FIGURE 5: DISTRIBUTION OF MCR RATIOS (BASELINE RATIOS FROM THE STRESS TEST REPORT)



Reporting reference date: 01/01/2016

Own Funds

According to the Stress Test Report, Tier 1 unrestricted eligible own funds account for 90% of total own funds for the companies included in the study. Although the quality of the own funds is generally high, there is considerable variability between companies, with the highest percentage of Tier 1 unrestricted own-funds (100%) in Poland, Lithuania and Cyprus, and the lowest percentage (79%) in Luxembourg. In Ireland, the percentage of total eligible own funds in unrestricted Tier 1 own funds was 93.6%, the percentage in Germany was 95.3%, the percentage in France was 79.3% and the percentage in the UK was 91.8%.

LTG & Transitional Measures

64% of the companies covered by the Stress Test Report used the volatility adjustment. A matching adjustment was used by 7% of companies. The transitional measure on technical provisions was used by 18% of the companies, while only 3 companies used the transitional measure on interest rate.

The LTG Report also reported on the numbers of companies using these measures, but in this report the figures are taken from the reporting of undertakings to their National Supervisory Authorities in 2016. According to this report, 61% (by market share) used the volatility adjustment, 24% applied the transitional on technical provisions, 16% used the matching adjustment (and it is interesting to note that all of these were Spanish or UK companies), and just 6 undertakings used the transitional on risk free interest rate. Only one undertaking used the duration-based equity risk sub-module.

The use of LTG measures and transitional measures has a significant impact on the SCR ratio, across the group of companies covered by the Stress Test Report. The overall SCR ratio falls from 196% to 136% if all[6] LTG and transitional measures are excluded – eligible own funds fall by 19% and the SCR increases by 17%.

The use of LTG measures and transitional measures increases the reconciliation reserves and therefore also the amount of unrestricted Tier 1 own funds. The proportion of unrestricted Tier 1 own funds mentioned in the previous section would therefore reduce if LTG and transitional measures were excluded.

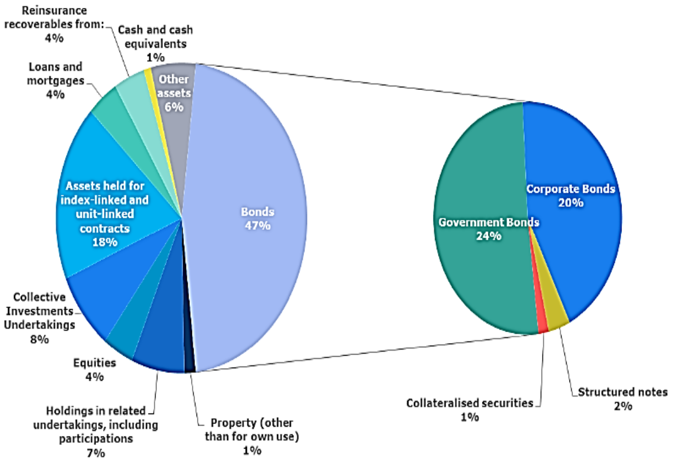
Also included in the LTG Report is information on the number of undertakings breaching their SCR in each country on 1st January 2016, along with the number of those using the SCR transitional measure. According to this report, 4 undertakings in Ireland were breaching their SCR on 1st January 2016 (and 4 were using the SCR transitional measure). In Germany, 3 undertakings were breaching the SCR (and 3 were using the SCR transitional measure). In France, 7 undertakings were breaching the SCR on 1st January 2016 (and 5 were using the SCR transitional measure). In the UK, 6 companies were breaching the SCR on 1st January 2016 (and 4 were using the SCR transitional measure). The total number of undertakings breaching their SCR was 74 (with 41 using the SCR transitional measure). The reason for the difference in these results and those contained in the Financial Stability Report is that the Financial Stability Report is based on figures at 30th June 2016 (and only includes certain insurance groups). The reason for the difference with the Stress Test Report is that the Stress Test Report only includes companies perceived to be particularly vulnerable to an extended period of low interest rates due to their relatively long-term life business.

Asset Profile

According to the Stress Test Report, bonds account for the biggest share of assets amongst the stress test participants, accounting for 47% of assets in total. Of these, 24% are government bonds and 20% are corporate bonds. The remaining 3% are structured notes and collateralised securities. Assets held for unit linked business account for 18% of the total assets. The full breakdown of assets is shown in Figure 6:

[6] The effect of the ultimate forward rate is not excluded although the extrapolation of the risk-free interest rate is listed as a LTG measure in the LTG Report.

FIGURE 6: ASSET SPLIT (FROM THE STRESS TEST REPORT)



Reporting reference date: 01/01/2016

GOVERNMENT BONDS

The share of government bond holdings varies by country, with a particular dominance in Bulgaria, Croatia, Hungary and Poland, where they account for more than 90% of the bond holdings. In Ireland, government bonds account for about 60% of total bond holdings. Government bonds account for about 35% of total bond holdings in Germany, about 48% of total bond holdings in France, and about 35% of total bond holdings in the UK. For sovereign bonds, 50% of the total exposure, excluding unit-linked business, is concentrated in securities issued by two countries (Italy and France) and 85% issued by six countries (UK, Spain, Italy, Germany, France, Belgium).

CORPORATE BONDS

The majority of corporate bonds (approximately 60%) are A-rated to AAA-rated bonds. There is also a significant concentration of BBB-rated bonds (approximately 25%).

Liability Profile

For the companies included in the Stress Test Report, technical provisions accounted for more than 90% of the total liabilities. The remaining 10% comprised deposits from reinsurers, deferred tax liabilities, debts owed to credit institutions, financial liabilities other than debts owed to credit institutions, reinsurance payables, subordinated liabilities and other liabilities.

Technical provisions for life (excluding unit linked) made up 68% of total liabilities, with 21% being made up of technical provisions for unit-linked business, and just 1% for technical provisions for non-life business. For Ireland alone, technical provisions for life (excluding unit linked) made up just less than 30% of total technical provisions, with just over 70% made up of technical provisions for unit-linked business, and a very small proportion made up of technical provisions for non-life business.

How Milliman can help

Our consultants have been involved in advising our clients on Solvency II issues since its conception. We have undertaken a range of work for clients across all three pillars of Solvency II. In relation to the SCR in particular, this includes:

- Extensive experience of modelling projected balance sheets, technical provisions and SCR calculations
- Independent Review of Solvency II balance sheet, technical provisions and SCR
- Assessment of standard formula SCR appropriateness;
- Operational risk modelling
- Solvency II capital management

Milliman also has a range of software available to support companies in the ongoing Solvency II requirements including:

- Solvency II Compliance Assessment Tool (link)
- Milliman Star Solutions - Vega®: An automated Pillar 3 reporting and standard formula aggregation system (link)
- Milliman Star Solutions - Navi®: A liability proxy modelling tool (link)

As a result, we have a wide range of experience that can be brought to bear to benefit your business.

Milliman

Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

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