

MILLIMAN RESEARCH REPORT

Analysis of non-life insurers' Solvency and Financial Condition Reports

European non-life insurers

Year-end 2017

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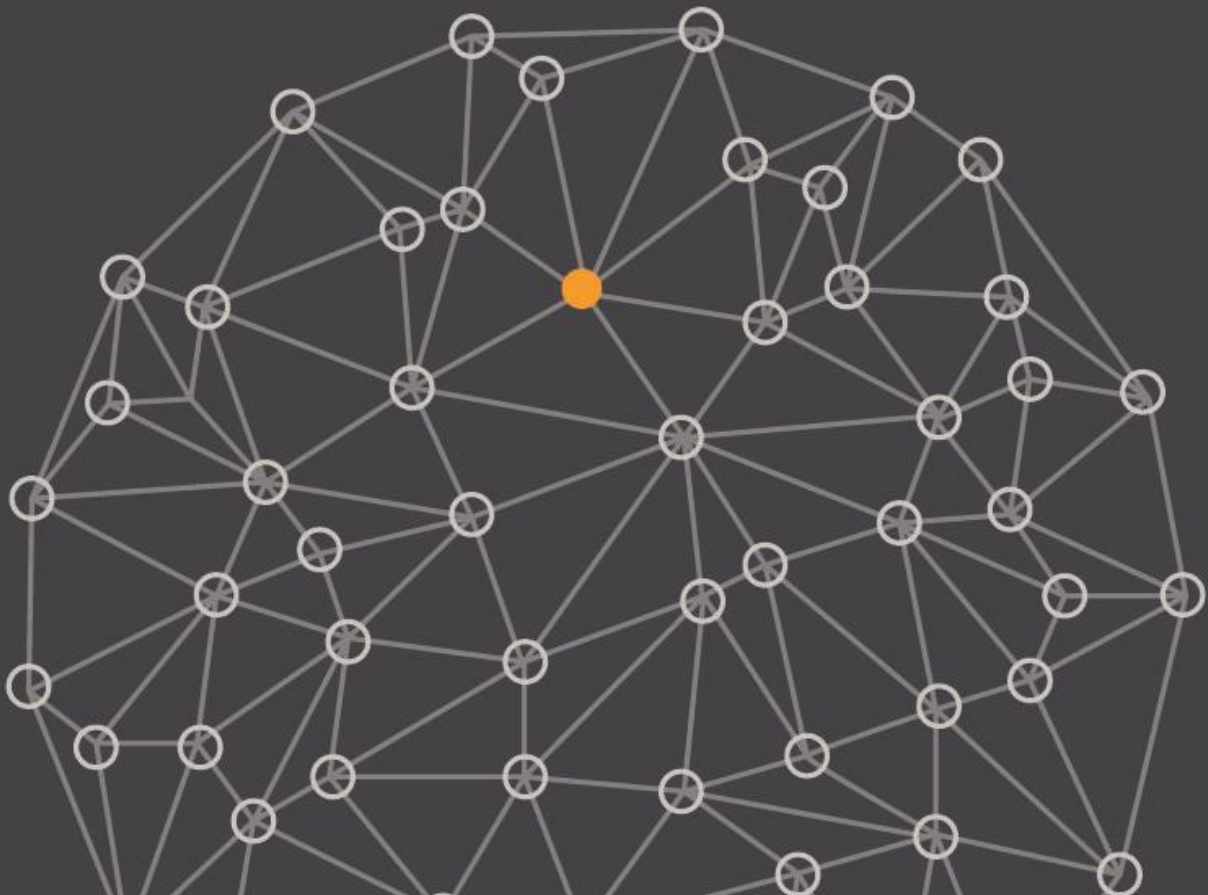




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Introduction

Two years have passed: Where are we?

Following the initial publication in 2017, (re)insurance undertakings across the EU published in 2018 their second set of Solvency II public reports, the Solvency and Financial Condition Reports (SFCRs).

The analyses underlying this report focus on the quantitative information contained in the Quantitative Reporting Templates (QRTs) within the SFCRs and draw conclusions about the balance sheets and risk exposures of European non-life insurers. Our focus is on solo entities rather than groups and includes comparison of the 2017 year-end SFCRs with the 2016 year-end SFCRs.

EUROPEAN MARKET COVERAGE

Our European analysis of the non-life¹ market covers 870 companies from the 15 countries listed below, which together comprise more than £326 billion of gross written premium (GWP) and nearly £475 billion of gross non-life technical provisions:

- Austria (AT)
- Belgium (BE)
- Germany (DE)
- Denmark (DK)
- Spain (ES)
- France (FRA)
- Gibraltar (GI)
- Ireland (IE)
- Italy (ITA)
- Luxembourg (LUX)
- Netherlands (NLD)
- Poland (PL)
- Romania (ROU)
- Sweden (SE)
- United Kingdom (UK)



We note that the UK numbers quoted in the rest of this report excludes the Society of Lloyd's, which represents £34 billion of GWP and £53 billion of gross technical provisions (compared with a total £61 billion of GWP and £95 billion of gross technical provisions for the 151 UK solo companies that we analysed) and exhibits a solvency coverage ratio of 144% (made up of £24 billion of eligible own funds and over £17 billion of Solvency Capital Requirement [SCR]).

UNDERLYING DATA

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

In carrying out our analysis and producing this research report, we relied on the data and information provided in the SFCRs and QRTs of our sample companies, as obtained from the Solvency II Wire Tool. 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 made minor adjustments to the data and calculated certain parameters to make the information consistent across all the insurers. However, we have not made any material changes to the

¹ Undertakings identified as primarily health insurers have been removed from the analysis. For example, undertakings for which medical expenses accounted for more than 85% of their gross written premium were considered as health insurers and excluded from both the European and UK markets analyses.

underlying data. We have not made any changes to the data to reflect additional information or changes following the reporting date.

Our analysis focuses only on non-life insurers and we have therefore tried to exclude, when identifiable, any major big health insurers from the “Composite” companies.

This research report is intended solely for educational 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 readers should consult qualified professionals before taking specific actions.

Note that all the figures published in this report are converted into GBP, by the Solvency II Wire Tool, using exchange rates as at each SFCR’s report date.

Analysis of European non-life companies

SOLVENCY COVERAGE RATIOS: HOW DID THE EUROPEAN COMPANIES DO?

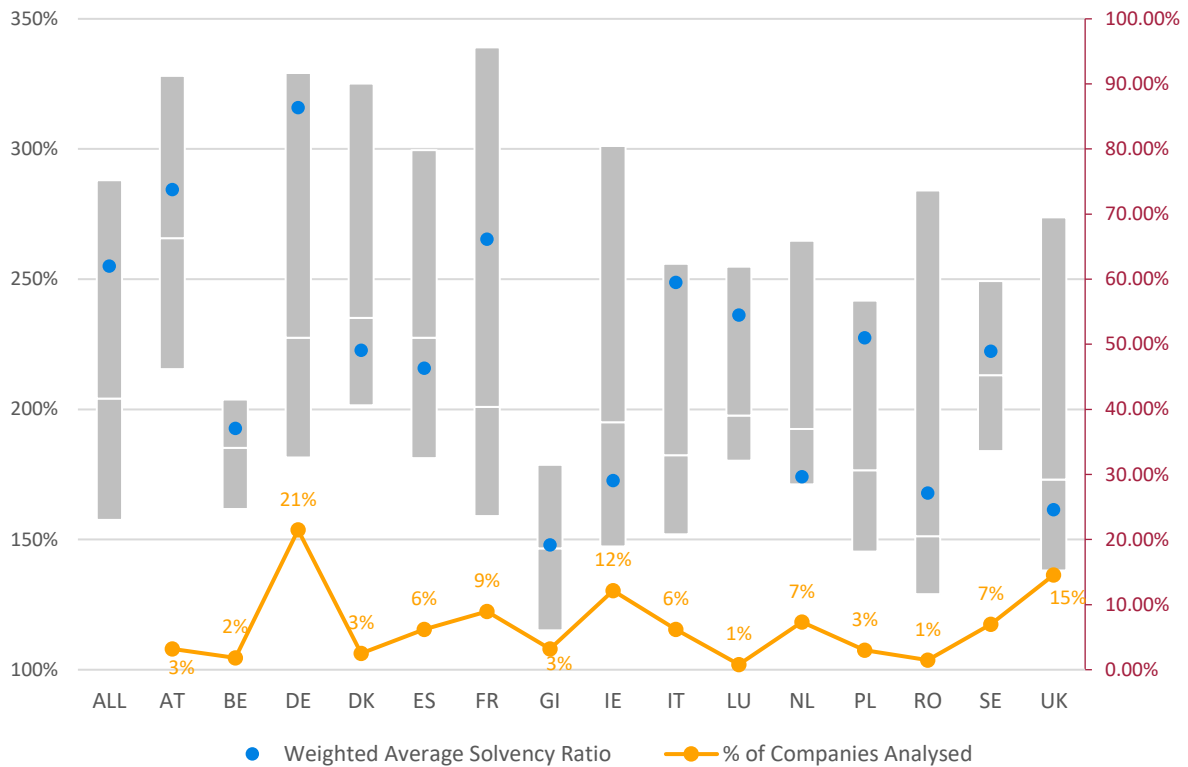
On an aggregated basis, European non-life insurers that were within the sample we analysed are sufficiently capitalised, with an average (weighted by eligible own funds) solvency coverage ratio of 255%. This has increased from the equivalent figure of 250%, reported in the previous set of SFCRs as at 2016 year-end.

Figure 1 shows how the solvency coverage ratios are distributed throughout the 15 European countries included in our panel. It sets out the median, 25th and 75th percentiles and weighted average of the distribution of the solvency coverage ratios for the market as a whole and then separately for each country analysed. This shows that there is a wide range of solvency coverage ratios: on average, insurers in some countries that were included in our review, such as Germany, were very well capitalised, with average solvency ratios of over 300%.

We note that Germany and France have a very wide distribution of solvency ratio, whereas Belgium, Gibraltar, Ireland and Sweden have narrower distributions.

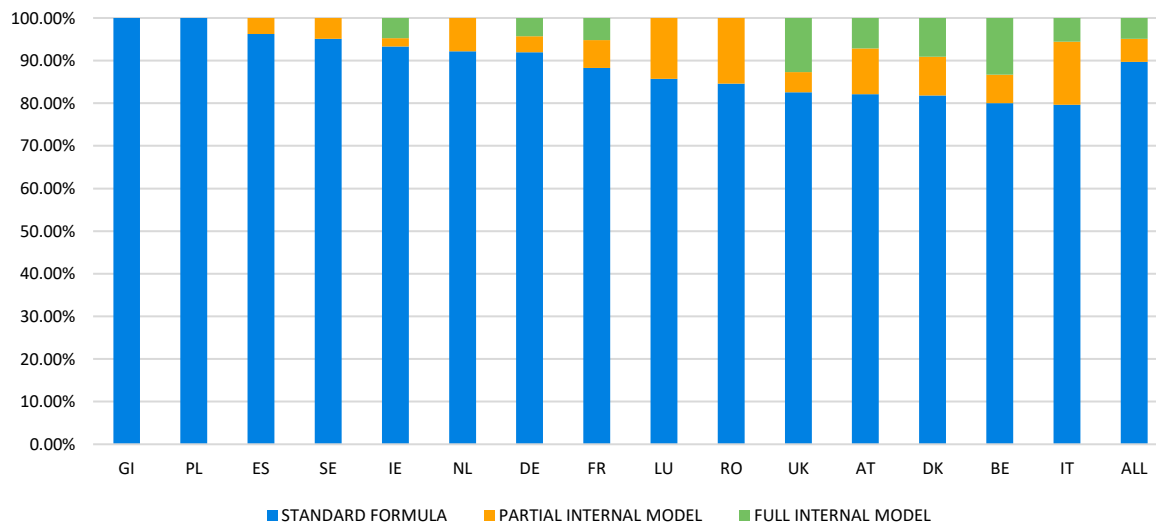
The notable variation across European countries suggests that, in addition to the disparities among European markets (e.g., legislation, product offering, etc.), the underlying methodologies—or interpretations of the regulation—used to assess the capital requirements might differ from one country to another.

FIGURE 1: DISTRIBUTION OF THE SOLVENCY COVERAGE RATIOS BY COUNTRY



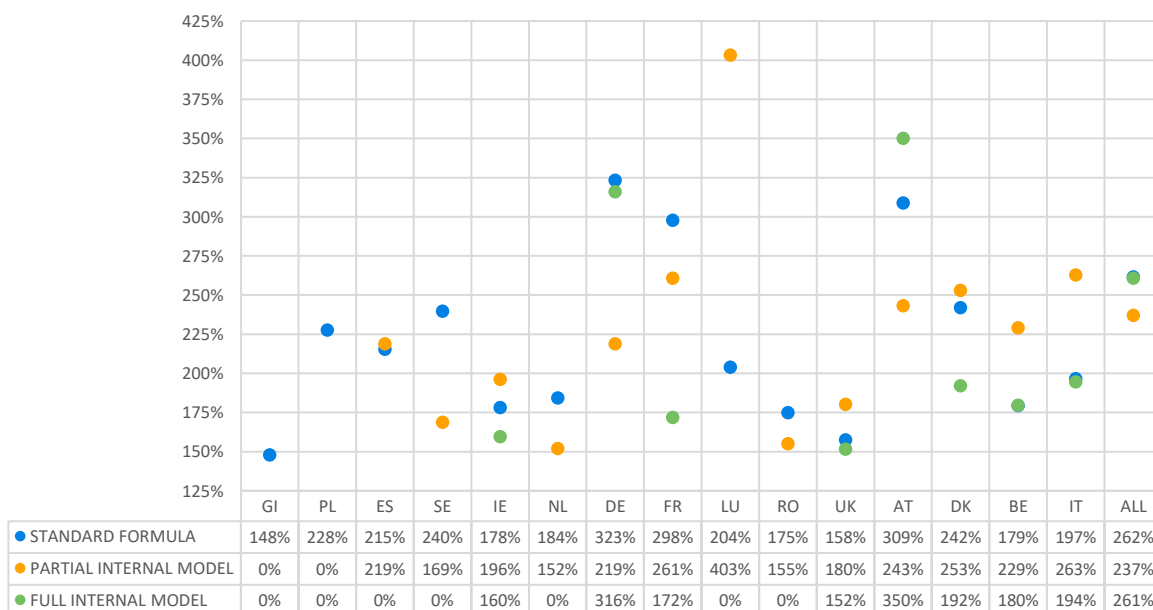
Not surprisingly, and as highlighted in Figure 2, 90% of the undertakings have used the Standard Formula (SF) to calculate their SCRs. At both ends of the spectrum, Poland and Gibraltar only have undertakings using the Standard Formula whereas Denmark, Italy and the UK had almost 20% of their undertakings using either a Partial Internal Model (PIM) or Full Internal Model (FIM).

FIGURE 2: CAPITAL MODEL BY COUNTRY RANKED BY % OF COMPANIES USING SF



Our analysis has indicated that the weighted average of the solvency coverage ratios is significantly lower for companies using a PIM, 237%, compared to 262% for companies using SF and 261% for companies using a FIM. Using an internal model allows companies to capture their own specific risks not covered in the Standard Formula (e.g., pension risk, inflation risk, equity implied volatility etc.) and to better reflect their risk and business profiles when assessing the solvency capital requirement (e.g., mitigation from non-proportion outwards reinsurance, dependencies between risks, recognition of operating profits/losses within underwriting risk etc.). Indeed, it must be noted from Figure 3 that for five of the eight countries with companies using a FIM, the SCR ends up to be the lowest.

FIGURE 3: SCR RATIOS² BY SCR CALCULATION METHODS ACROSS EUROPE

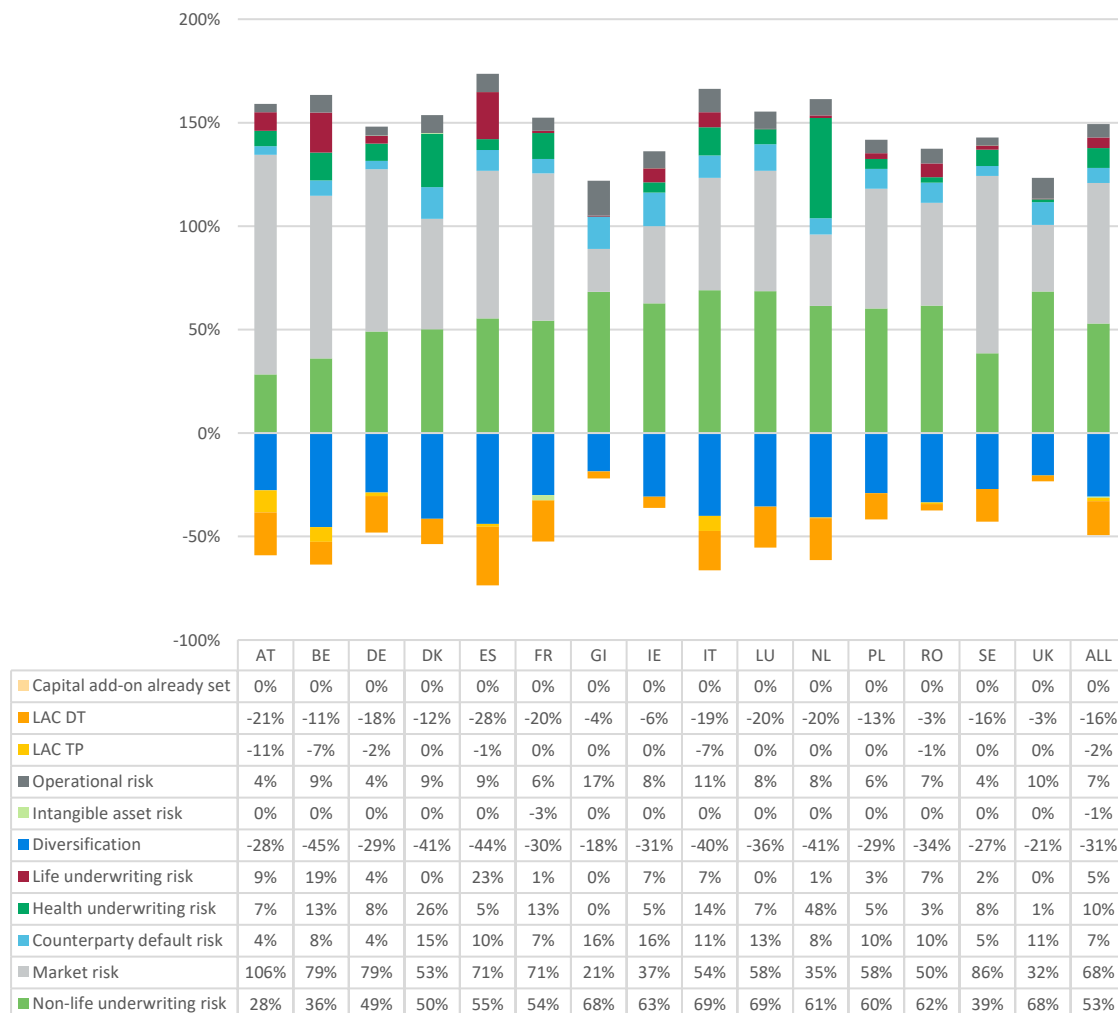


² 0% means capital model not used.

ANALYSIS OF SCR AND MCR: WHERE IS THE RISK?

We present in Figure 4 the breakdown of the SCR, by country, for the insurers that calculated their SCRs using the SF.

FIGURE 4: SCR BREAKDOWN BY COUNTRY



Non-life underwriting risk is the biggest risk area for non-life firms across Europe (with eight of the 15 countries analysed presenting this as their predominant risk). The largest risk of all of the other countries was market risk. Overall, the non-life SCR represents 53% of the SCR but the market risk is also a substantial proportion of total risk for all countries (68%).

In Austria, Germany and France, firms have a substantial portion of their investments allocated to collective investments and holdings in related undertakings included participations, which might explain the higher market risk charge.

In the Netherlands, the health underwriting risk is almost as important as the non-life underwriting risk, whereas in some other countries, such as the UK, Italy and Gibraltar, the health risk component is almost nonexistent. To some extent, this highlights differences among countries in the types of product sold by non-life insurers within Europe, but it would also reflect the fact that in some countries (such as the UK) there are stand-alone health insurance providers not included within our analysis of non-life insurers.

The significant contribution of life underwriting risk in Belgium and Spain is a consequence of some of the large players in their markets being composite insurers (i.e., writing both life and non-life insurance). It possibly distorts the comparison but, because of the size of their non-life business relative to their markets we have decided to keep these companies in our analysis.

ANALYSIS OF OWN FUNDS

Own funds are divided into three tiers based on quality: Tier 1 capital is the highest ranking with the greatest loss-absorbing capacity, such as equity or bonds; Tier 2 funds are composed of hybrid debt; and Tier 3 comprises deferred tax assets. As shown in Figure 5, insurers' own funds are considered to be of good quality, with 92% classified in Tier 1.

FIGURE 5: STRUCTURE OF OWN FUNDS

	AT	BE	DE	DK	ES	FR	GI	IE	IT	LU	NL	PL	RO	SE	UK	ALL
ELIGIBLE OWN FUNDS TO MEET THE SCR	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
TIER 1 - UNRESTRICTED	94%	88%	92%	92%	99%	95%	90%	95%	86%	96%	96%	92%	94%	96%	93%	92%
TIER 1 - RESTRICTED	1%	2%	1%	0%	0%	2%	0%	0%	5%	0%	1%	0%	1%	0%	0%	2%
TIER 2	5%	9%	6%	7%	1%	3%	9%	4%	9%	4%	3%	8%	3%	4%	5%	6%
TIER 3	0%	1%	1%	1%	0%	0%	1%	1%	0%	0%	0%	0%	2%	0%	2%	0%

ANALYSIS OF MAIN BALANCE SHEET ITEMS

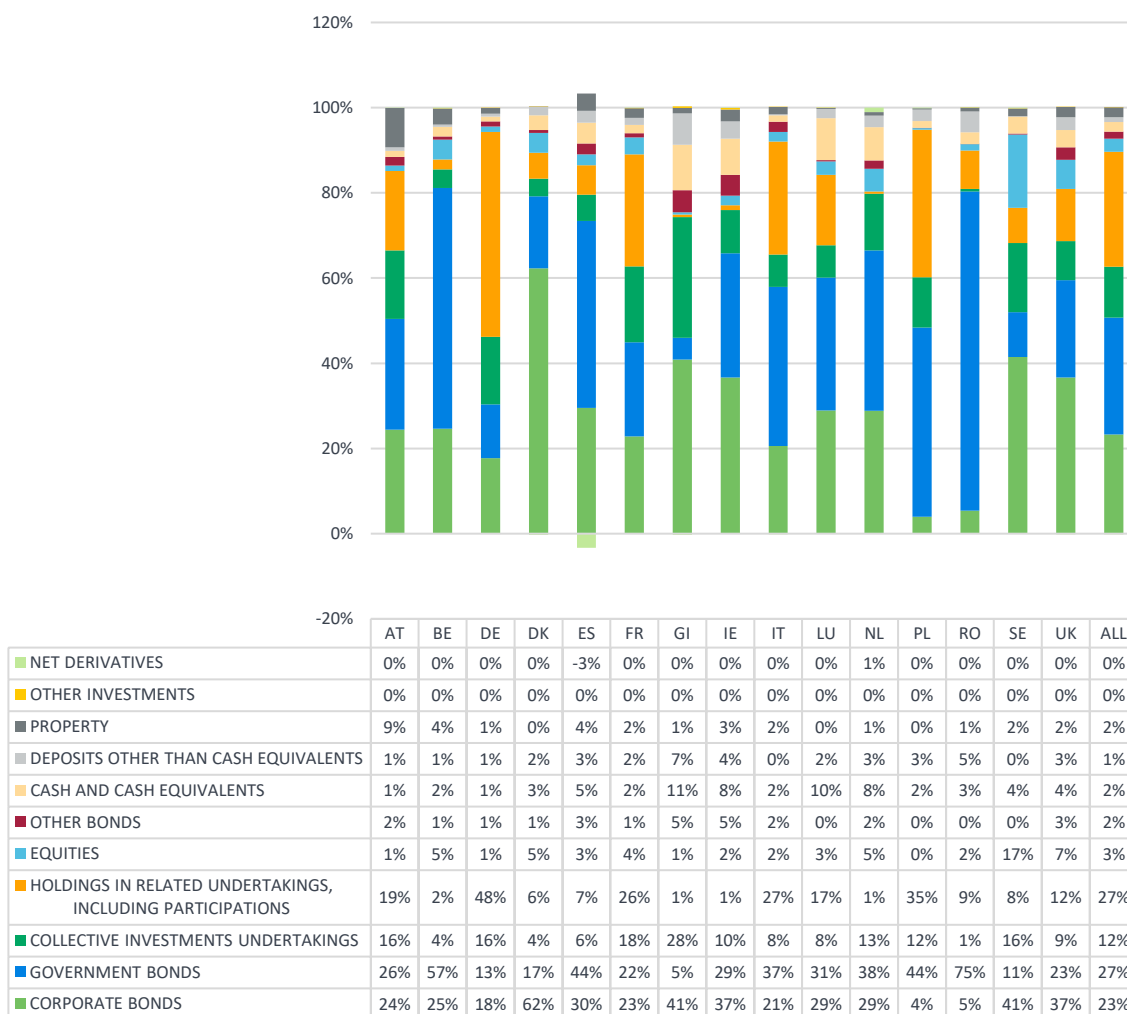
Assets

Across all countries, investments form the majority of total assets in the balance sheet. Except from Gibraltar, Ireland, Luxembourg and the UK, all countries have more than 70% of total assets in investments. Gibraltar, Ireland and Luxembourg exhibit a greater proportion of reinsurance recoverables (over total assets), which is not unexpected, given the use of reinsurance in these countries that domicile numerous captives. For the UK, the deposits to cedants make a substantial proportion of the assets (25%) and relates almost exclusively to Aviva International Insurance Limited, which acts as an internal reinsurer for various companies within the Aviva Group.

Figure 6 shows the breakdown of companies' investments (including cash) per country. One can observe that investments in bonds (both government and corporate) dominate the firms' portfolios. Bonds are attractive to insurers due to the regular payment streams, which complement duration matching strategies, reduced volatility and the associated capital requirements relative to equities.

Germany is an exception to this in that holdings in related undertakings tend to dominate balance sheets and, in aggregate, make up 48% of the total investments.

FIGURE 6: INVESTMENT BREAKDOWN, AGGREGATED BY COUNTRY



Technical provisions

Figure 7 shows that for most countries technical provisions constitute the largest liability in non-life insurers’ balance sheets, making up approximately 78% of the total liabilities in aggregate. Germany is an exception, with only 60% of the liabilities allocated to technical provisions and the 40% remaining being dominated by pension benefit obligations, subordinated liabilities, deferred tax liabilities and financial liabilities other than to credit institutions.

FIGURE 7: SPLIT OF LIABILITIES BY COUNTRY

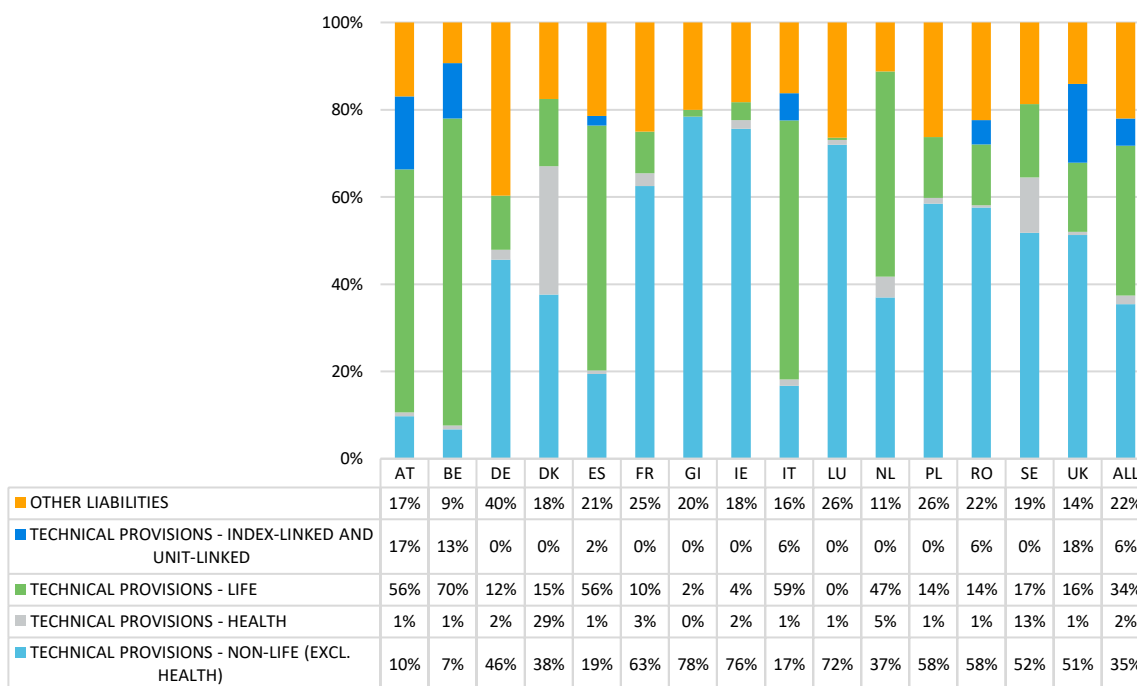


Figure 8 illustrates the split of gross technical provisions across the 15 European countries analysed as at the 2017 year-end. Germany, France and the UK, on aggregate, make up 68% of the technical provisions, with the other 12 countries comprising much lower proportions of technical provisions.

FIGURE 8: SPLIT OF NON-LIFE (INC. HEALTH SIMILAR TO NON-LIFE) GROSS TECHNICAL PROVISIONS BY COUNTRY

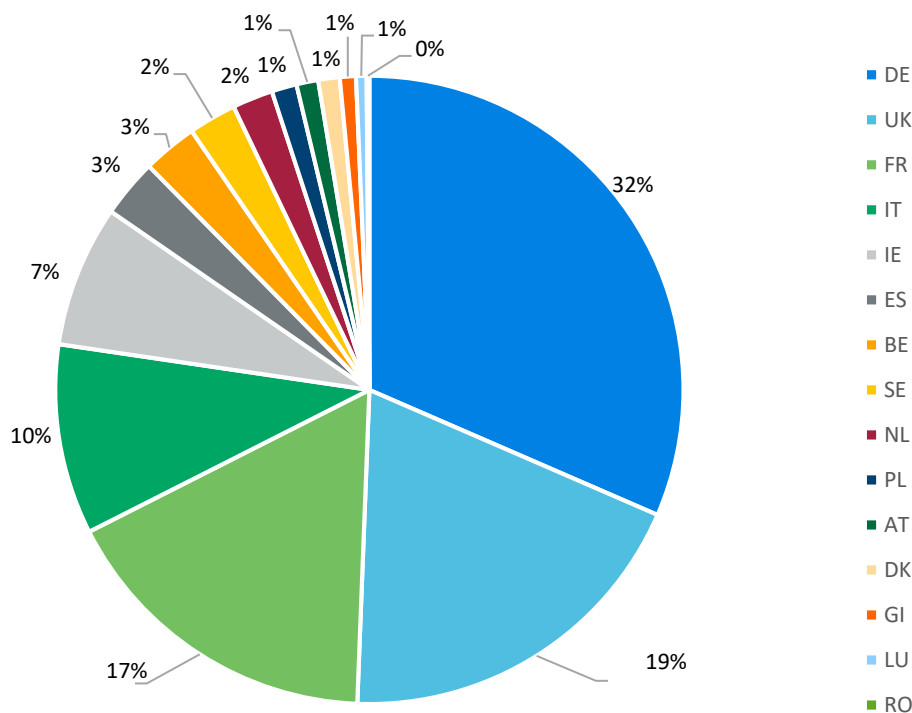
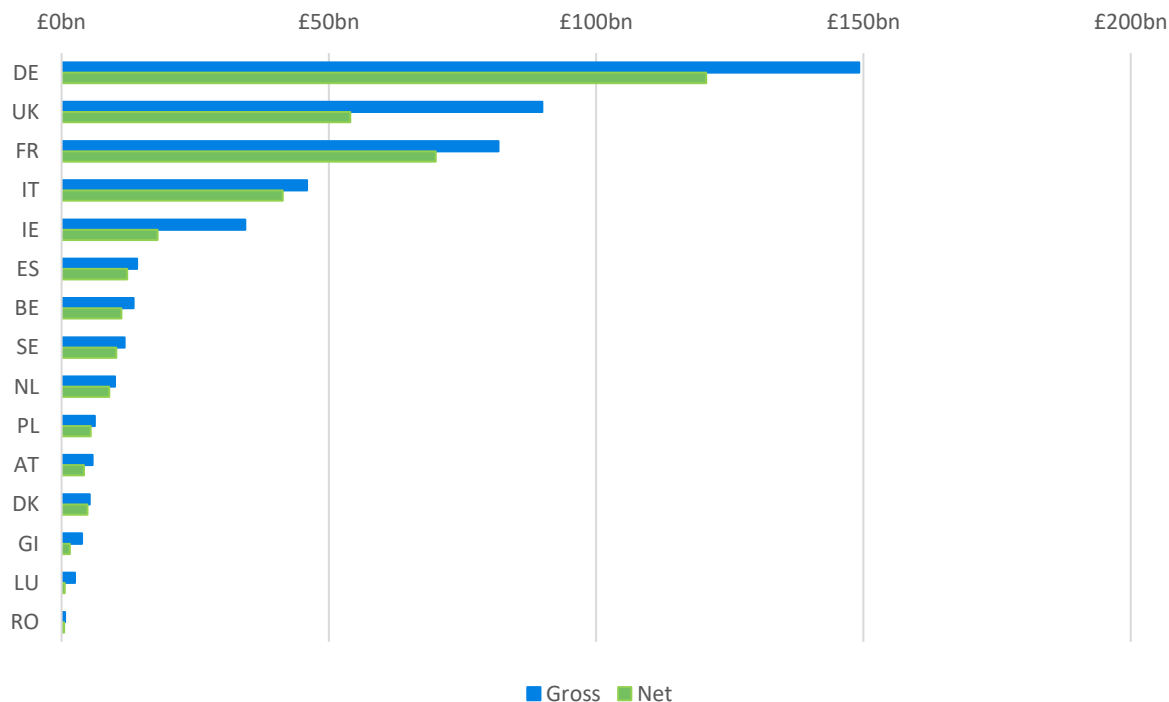


Figure 9 shows the non-life gross and net technical provisions for each country as at the 2017 year-end.

FIGURE 9: GROSS AND NET NON-LIFE (INC. HEALTH SIMILAR TO NON-LIFE) TECHNICAL PROVISIONS BY COUNTRY



The 870 insurers included in our sample have reserved almost £475 billion of non-life technical provisions gross of reinsurance, and over £363 billion net of reinsurance.

From Figure 10 we note that the liability lines of business account for more than 55% of insurers' total non-life best estimate.

FIGURE 10: NON-LIFE (INC. HEALTH SIMILAR TO NON-LIFE) GROSS TECHNICAL PROVISIONS BY LINE OF BUSINESS

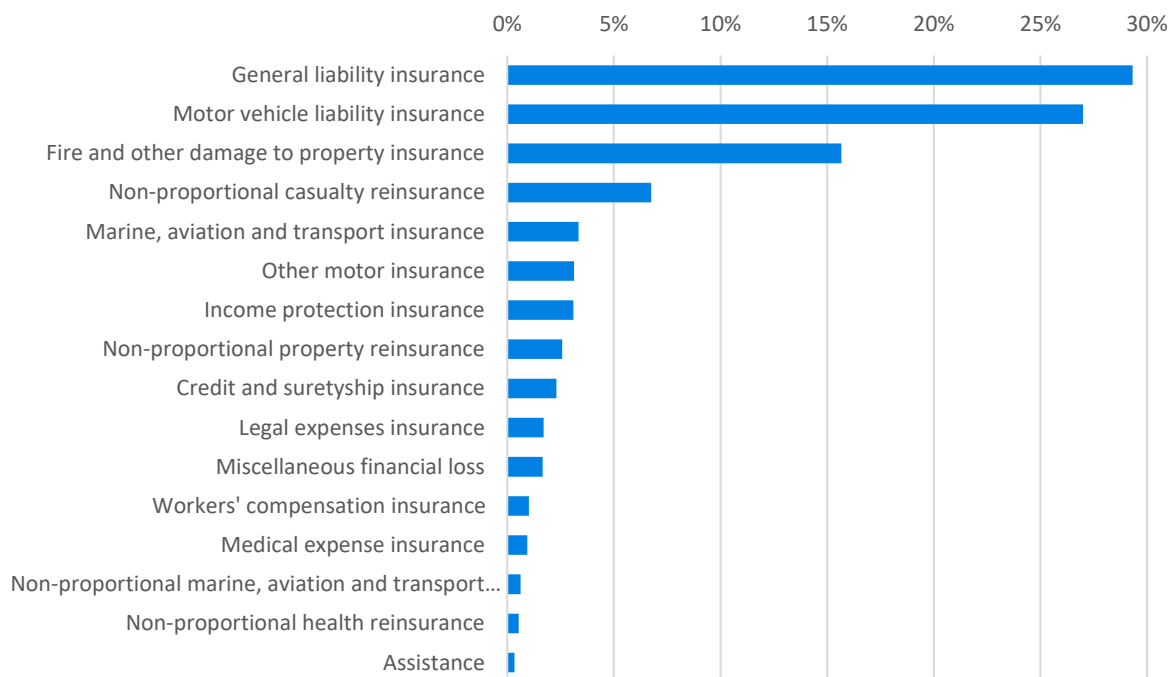
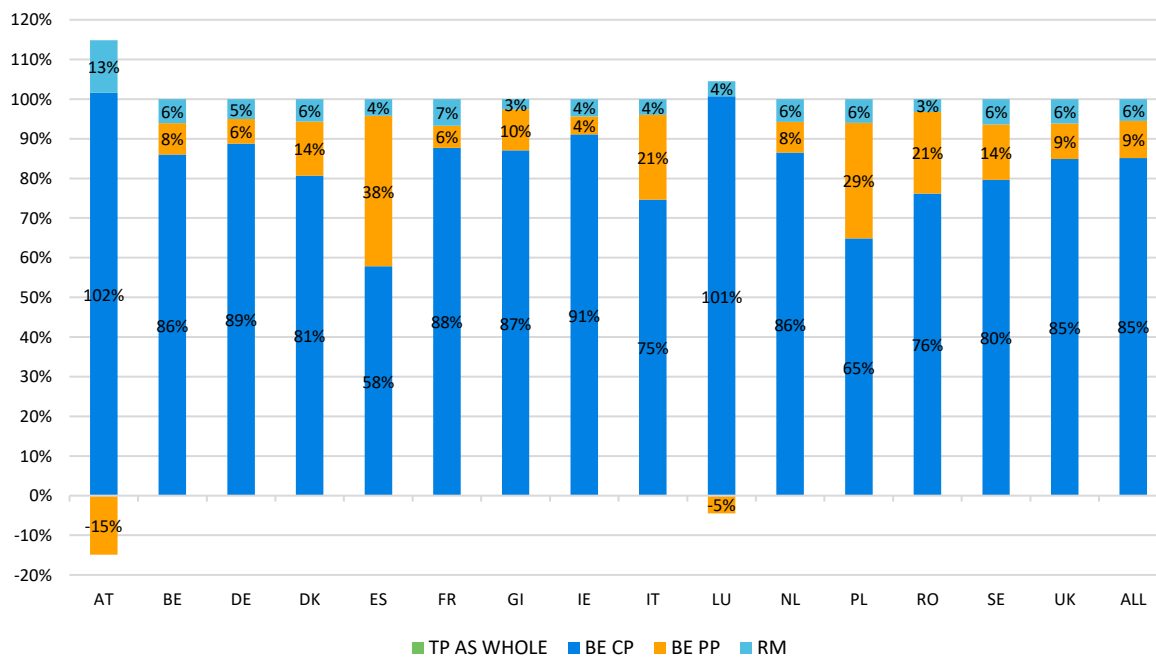


Figure 11 shows the composition of the non-life technical provisions across European countries as at the 2017 year-end. We observe that, on an aggregated basis, claims provisions make up to 85% of the gross technical provisions. Claims provisions comprise lower proportions in Spain, Italy, Romania and Poland.

We observe that premium provisions are negative for Austria and Luxembourg, implying that firms potentially expect unearned and bound but not incepted business to be profitable.

The share of the technical provisions attributable to the risk margin is broadly consistent among countries, with an average proportion of 6% of the gross technical provisions (noting a high proportion of 13% for Austria).

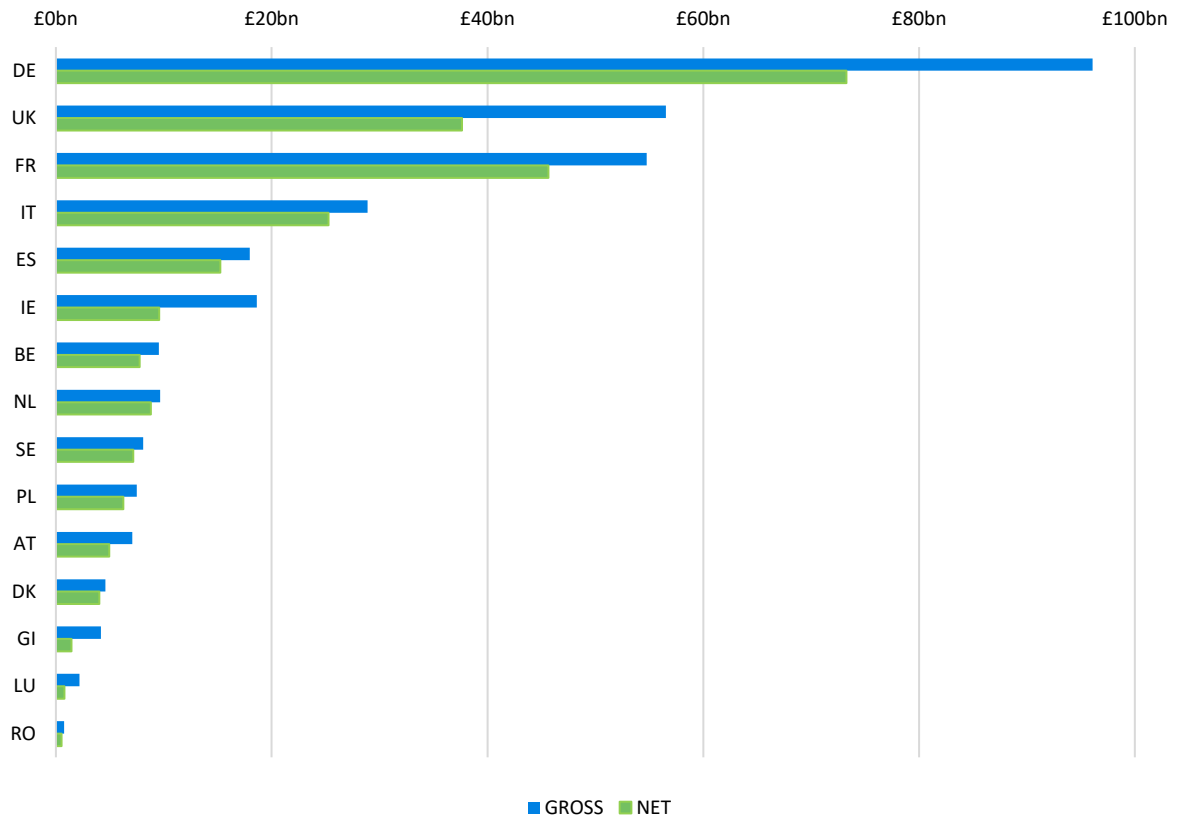
FIGURE 11: COMPONENTS OF NON-LIFE (INC. HEALTH SIMILAR TO NON-LIFE) NET TECHNICAL PROVISIONS



ANALYSIS OF UNDERWRITING

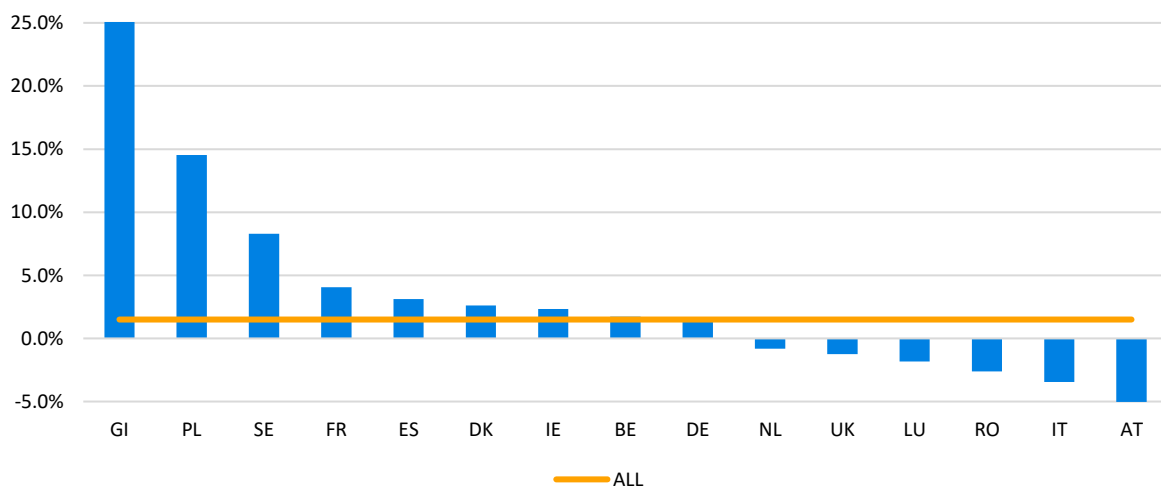
In 2017, our sample of European non-life insurers wrote more than £326 billion of non-life premiums gross of reinsurance, with a net of reinsurance amount of more than £248 billion.

FIGURE 12: GROSS AND NET NON-LIFE WRITTEN PREMIUMS BY COUNTRY



In Figure 13 we observe that six out of the 15 countries display a substantial decrease in their GWP between 2016 and 2017.

FIGURE 13: 2016-2017 GROWTH IN NON-LIFE (INC. HEALTH SIMILAR TO NON-LIFE) GROSS WRITTEN PREMIUMS BY COUNTRY



In Figure 14, we show the gross and net of reinsurance loss ratios by country.

FIGURE 14: GROSS AND NET NON-LIFE (INC. HEALTH SIMILAR TO NON-LIFE) LOSS RATIOS BY COUNTRY

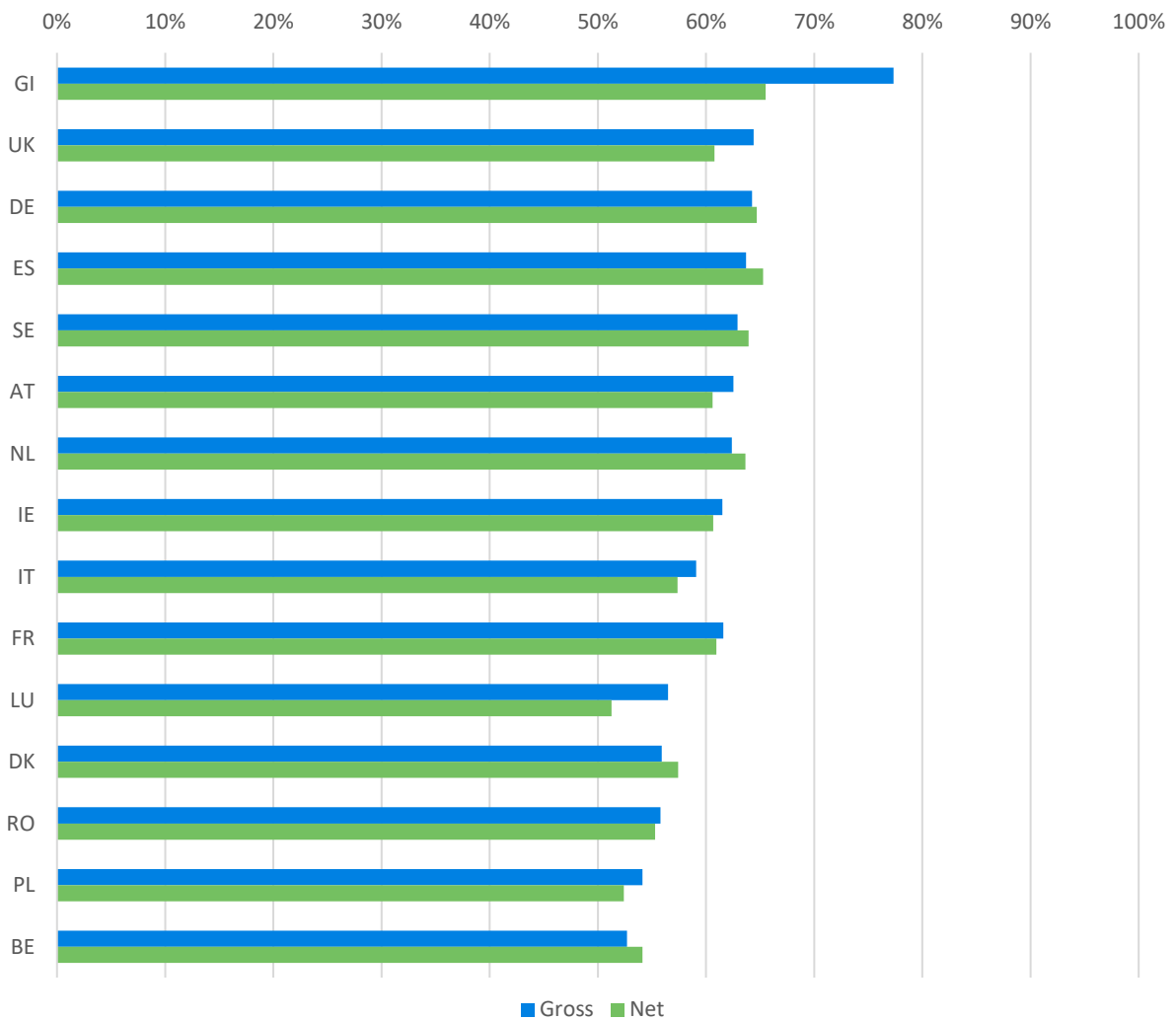


Figure 14 also indicates that, in most cases, the purchase of reinsurance makes economic sense (in addition to protecting against extreme events) with the net of reinsurance loss ratios being lower than the gross loss ratios.



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