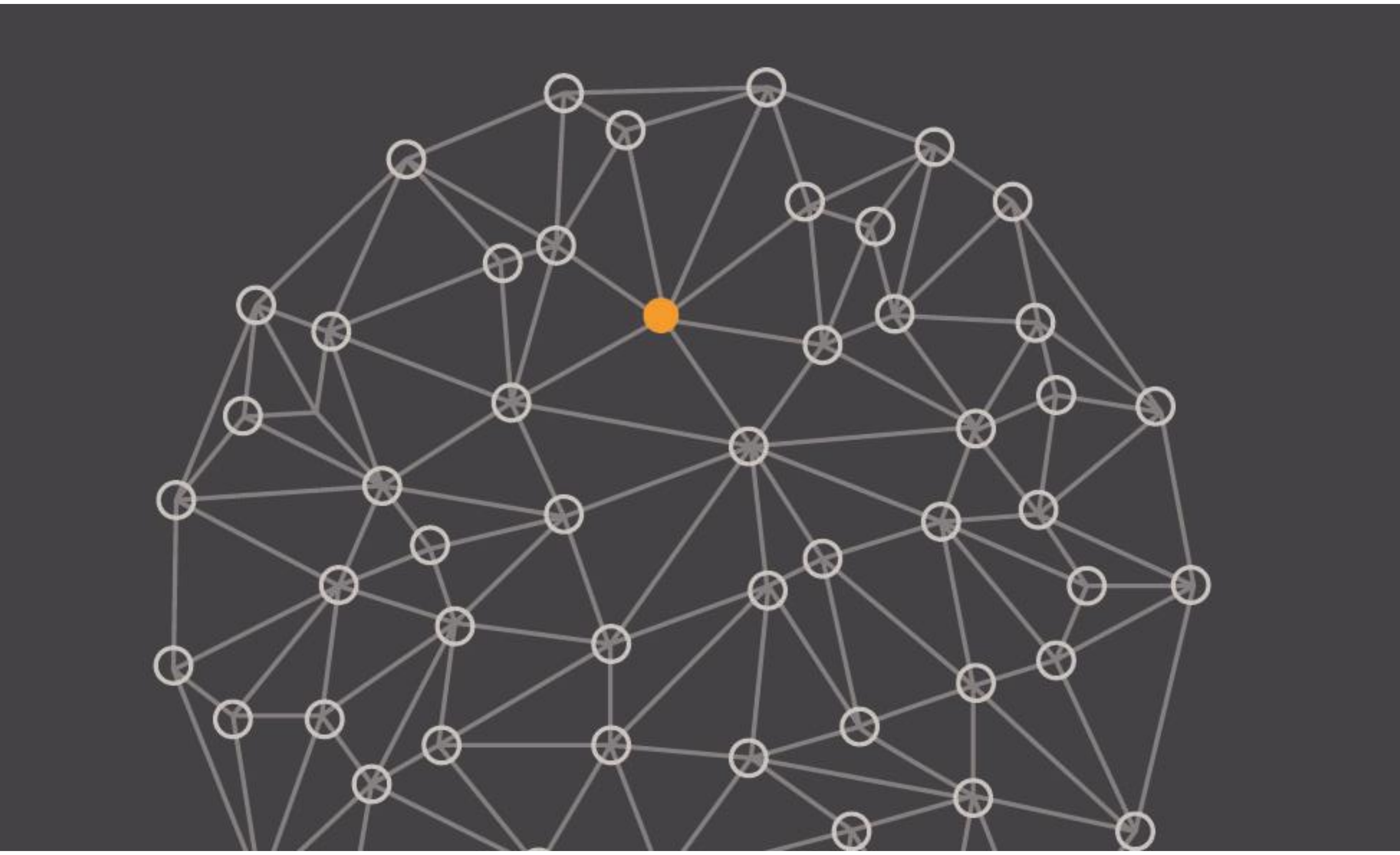
MILLIMAN RESEARCH REPORT

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

European and United Kingdom non-life insurers year-end 2016

January 2018

Lamia Amouch, IA, FIA
Derek Newton, FIA
Vincent Robert, IA, FIA
Flavien Thery, IA, FIA



Milliman

Table of Contents

Introduction

Solvency II went live on 1 January 2016 and introduced a number of new disclosure requirements for European insurers. Each insurer is now required to publish annually a Solvency and Financial Condition Report (SFCR), including some Quantitative Reporting Templates (QRTs). The aim of these SFCRs is to give some details of the insurer's financial strength and risk profile and, more generally, on how it manages its respective businesses. The SFCRs released earlier this year were the first such publications. No detailed guidance was provided by the regulators regarding how the SFCRs should be put together. Hence, there is considerable variation among insurers in the quality and the quantity of the information provided.

The analysis underlying this report focuses on the quantitative information contained in the QRTs within the SFCRs, but we have also studied the text within SFCRs in order to gain some additional insights into various companies, in particular those that displayed characteristics that differed materially from the market average. Our focus is on solo entities rather than groups.

EUROPEAN MARKET COVERAGE

Our European analysis of the non-life market covers 140 companies from the 11 countries listed below, which together comprise more than £126 billion of gross written premium (GWP) and nearly £200 billion of gross technical provisions:

- Belgium (BEL)
- Germany (DEU)
- France (FRA)
- United Kingdom ('UK') (GBR)
- Greece (GRC)
- Ireland (IRL)
- Italy (ITA)
- Luxembourg (LUX)
- Netherlands (NLD)
- Poland (POL)
- Romania (ROU)

UK MARKET COVERAGE

Our analysis is based on 39 solo companies pursuing non-life business in the UK (including some regulated in territories other than the UK, such as Gibraltar), representing circa 75% of the GWP of the UK non-life market in 2016.

We have excluded the Society of Lloyd’s from our study. As a single entity, it represents £30 billion of GWP and £46 billion of gross technical provisions, and exhibits a solvency coverage ratio of 148%.

Appendix A contains a list of all of the UK companies that were included in our analysis.

Analysis of European non-life companies

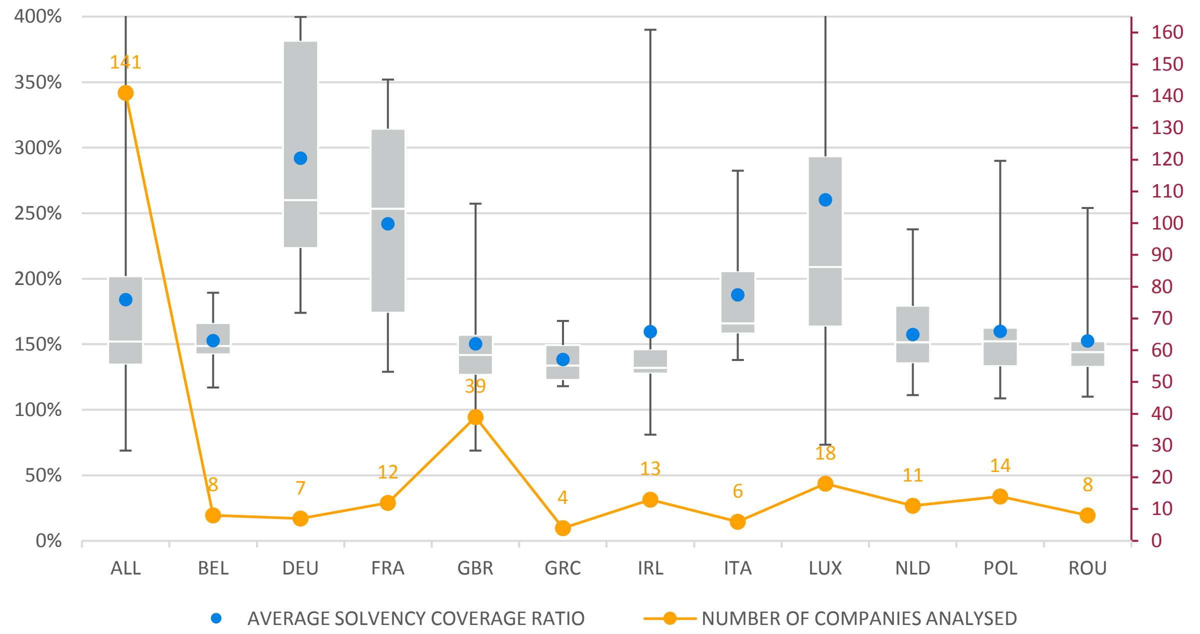
SOLVENCY COVERAGE RATIOS: HOW DID THE EUROPEAN COMPANIES DO?

On an aggregated basis, European non-life insurers that were within the sample that we analysed are sufficiently capitalised, with an average solvency coverage ratio of 184%. The average solvency coverage ratio is defined as the eligible own funds as a proportion of the Solvency Capital Requirement (SCR).

Figure 1 shows how the solvency coverage ratios are distributed throughout the 11 European countries included in our panel. The back lines for each country represent the range of solvency coverage ratios within the insurers analysed for that country, with the grey box representing the 25th to 75th percentiles of the range and the green dot the mean of the range. 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 Luxembourg, France and Germany, were very well capitalised, with solvency ratios of over 250%, whereas insurers in other European countries were on average much less well capitalised as at the 2016 year-end.

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

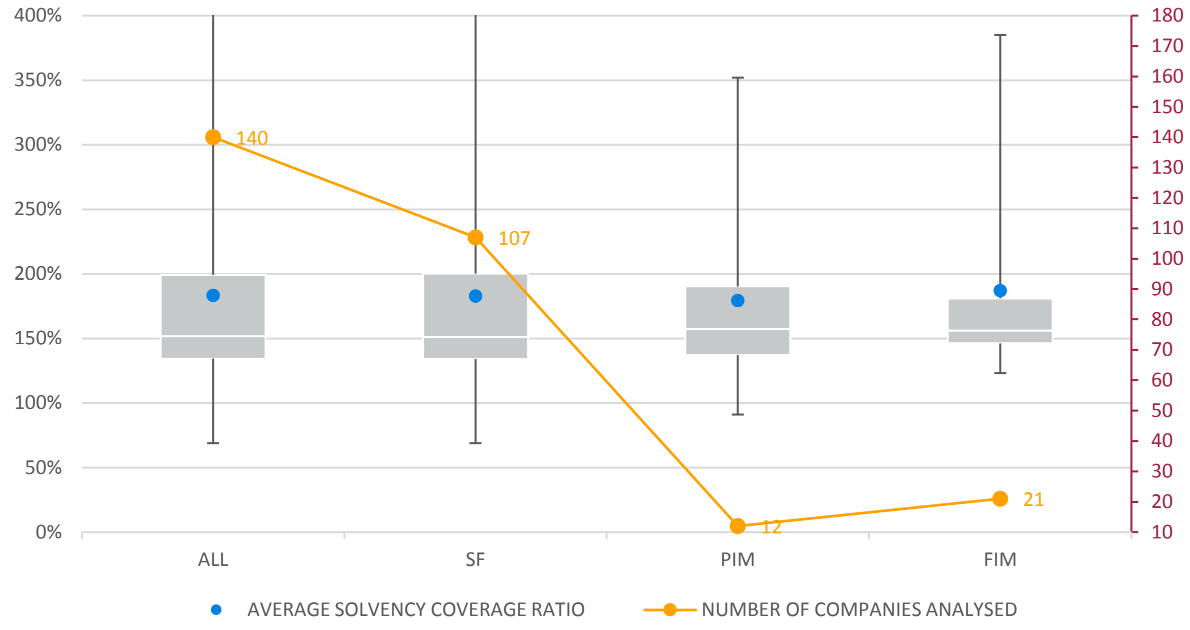
FIGURE 1: DISTRIBUTION OF THE SOLVENCY COVERAGE RATIOS BY COUNTRY



Not surprisingly, for this first live annual reporting cycle, most insurers have used the Standard Formula (SF) to calculate their SCRs (107 out of 140 insurers included in our sample). Of those that did not use the SF, 21 have used an internal model (IM) and 12 a partial internal model (PIM).

Figure 2 shows that the averages of the solvency coverage ratios are quite similar whether using the SF (184%), a PIM (162%) or an IM (187%).

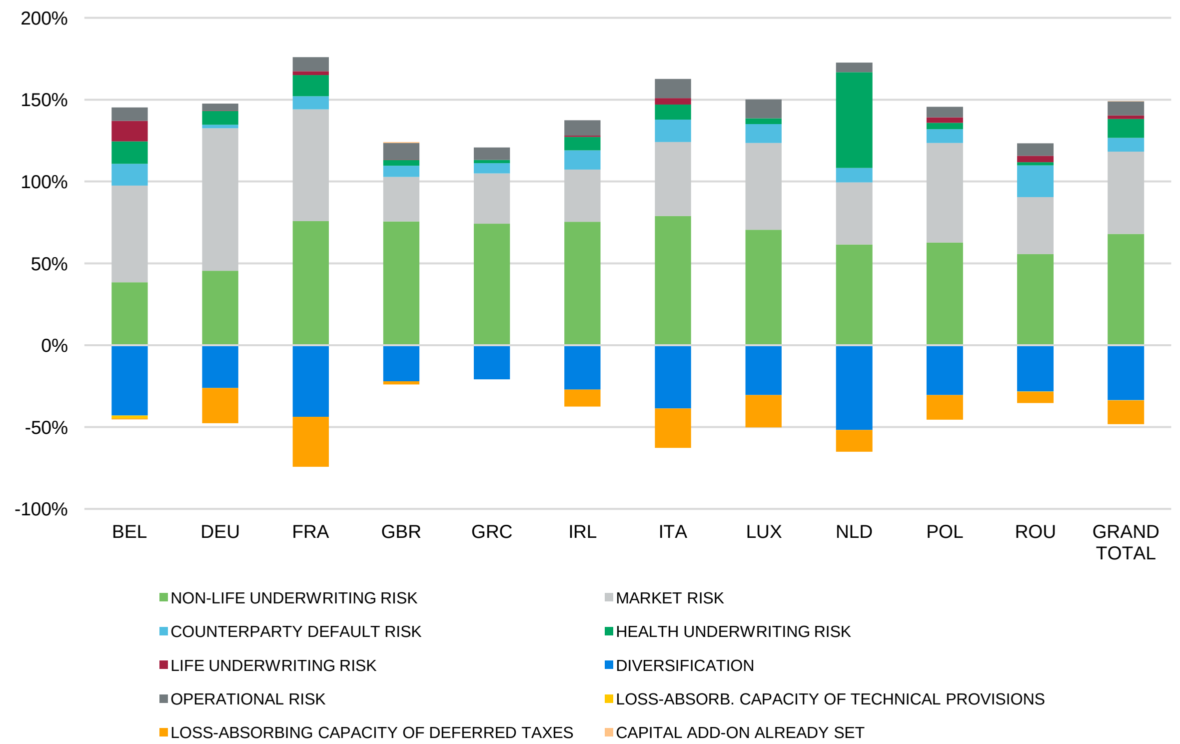
FIGURE 2: SCR RATIOS AND SCR CALCULATION METHODS ACROSS EUROPE



ANALYSIS OF SCR AND MCR: WHERE IS THE RISK?

We present in Figure 3 the breakdown of the SCR, by country, for the insurers that calculated their SCRs using the SF.

FIGURE 3: SCR BREAKDOWN BY COUNTRY



Except for Germany and Belgium, where market risk is the predominant risk, non-life underwriting risk is the biggest risk area for non-life firms across Europe. In the Netherlands, the health underwriting risk is as important as the non-life underwriting risk, whereas in some other countries, such as the UK, Greece and Romania, the health risk component is almost non-existent. 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 and the Netherlands) there are stand-alone health insurance providers not included within our analysis of non-life insurers.

ANALYSIS OF OWN FUNDS

As shown in Figure 4, the average structure of the own funds is very similar across European countries, with an aggregate of 92% of items classified as Tier 1. This highlights the general good quality of firms' own funds across the market.

FIGURE 4: STRUCTURE OF OWN FUNDS

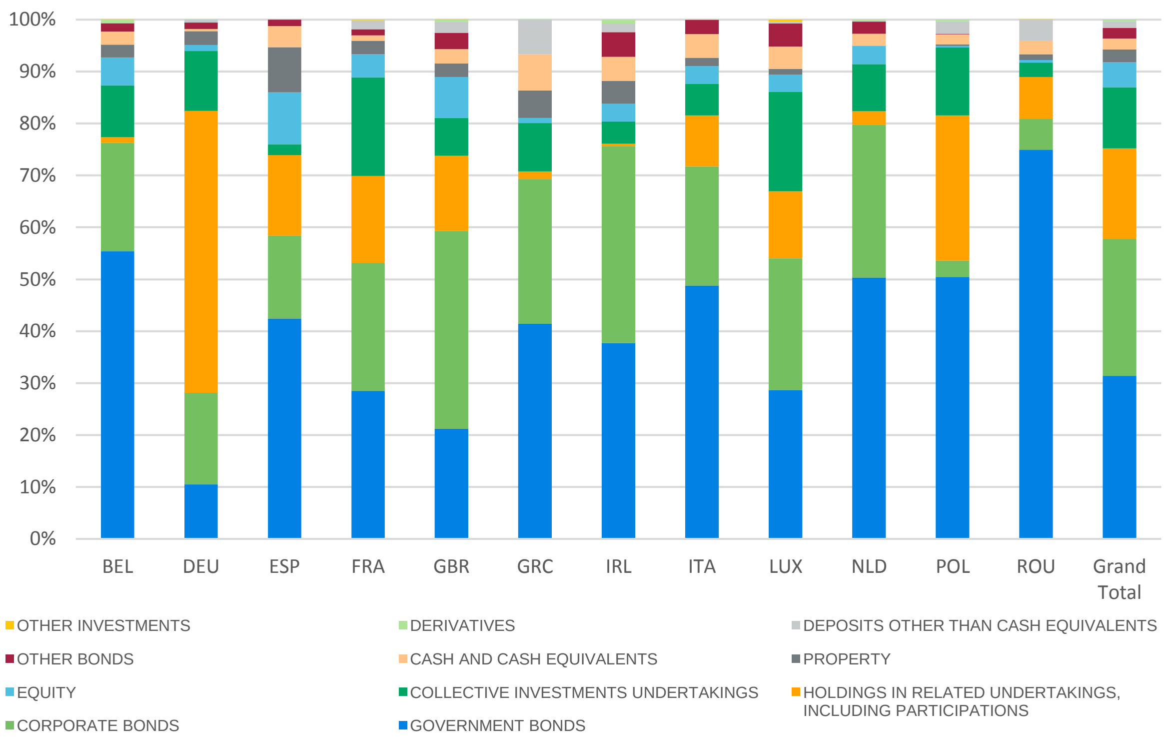
	BEL	DEU	ESP	FRA	GBR	GRC	IRL	ITA	LUX	NLD	POL	ROU	GRAND TOTAL
ELIGIBLE OWN FUNDS TO MEET THE SCR	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
TIER 1 - UNRESTRICTED	89%	98%	100%	91%	88%	98%	93%	97%	96%	93%	98%	91%	92%
TIER 1 - RESTRICTED	0%	0%	0%	4%	1%	0%	0%	0%	0%	2%	0%	1%	2%
TIER 2	7%	2%	0%	5%	8%	0%	4%	0%	3%	5%	1%	6%	5%
TIER 3	4%	0%	0%	0%	2%	2%	3%	3%	1%	0%	0%	2%	1%

ANALYSIS OF MAIN BALANCE SHEET ITEMS

Assets

Figure 5 shows the breakdown of companies' investments per country. One can observe that investments in bonds (both government and corporate) dominate the firms' portfolios. Germany is an exception to this—in that market holdings in related investments tend to dominate balance sheets and, in aggregate, make up nearly 54% of the total investments.

FIGURE 5: INVESTMENT BREAKDOWN, AGGREGATED BY COUNTRY

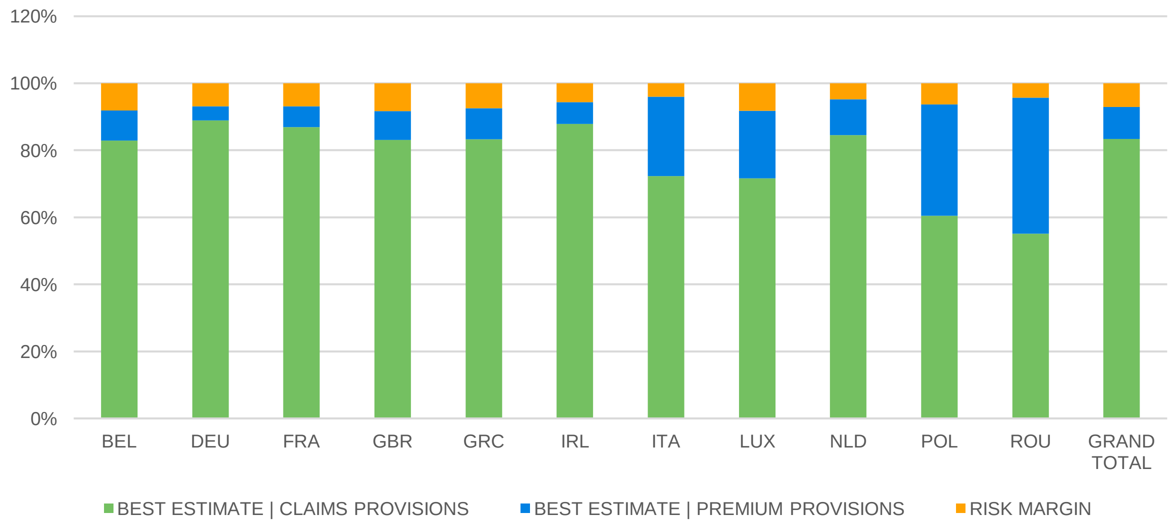


Technical provisions

Figure 6 shows the composition of the technical provisions across European countries as at the 2016 year-end. We observe that, on an aggregated basis, claims provisions make up to more than 80% of the net technical provisions. Claims provisions comprise lower proportions in Italy, Luxembourg, Poland and Romania.

The share of the technical provisions attributable to the risk margin is also steady, with an average proportion of 7% of the net technical provisions.

FIGURE 6: COMPONENTS OF NET TECHNICAL PROVISIONS



United Kingdom non-life undertakings

SOLVENCY COVERAGE RATIOS: HOW DID THE MARKET DO? HOW SOLVENT IS THE MARKET?

FIGURE 7: UK SOLVENCY COVERAGE RATIOS AS AT THE 2016 YEAR-END

	2016 YEAR-END
RATIO OF ELIGIBLE OWN FUNDS TO SCR	148%
RATIO OF ELIGIBLE OWN FUNDS TO MCR	408%
MCR AS A % OF THE SCR	33%

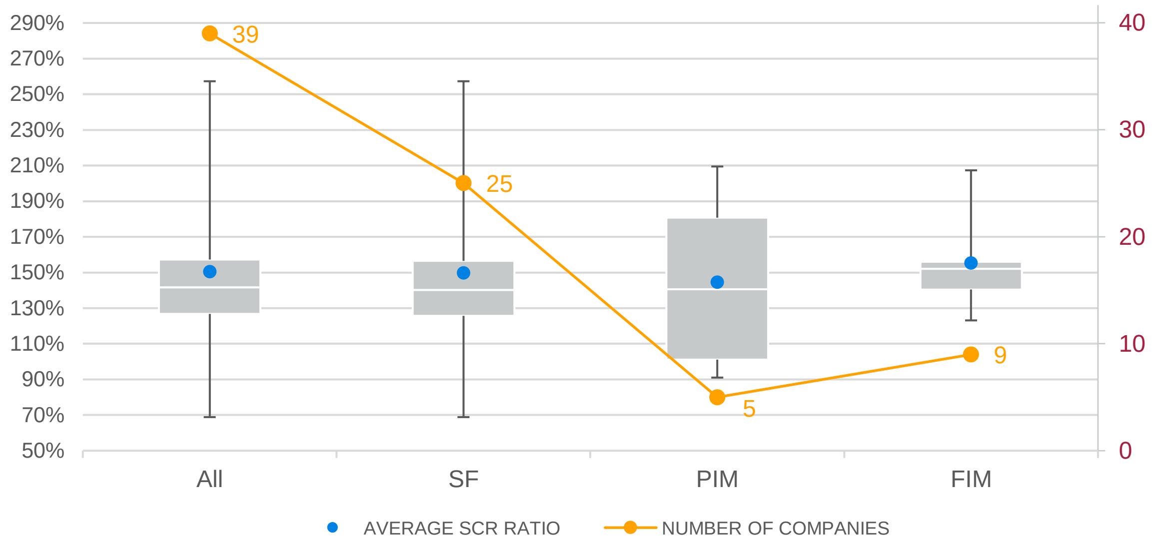
On an aggregated basis, the UK non-life insurers that comprised our sample are sufficiently capitalised, their average solvency coverage ratio being 148%. We note that this is lower than the European average of 184%; indeed, it is lower than the equivalent average for most other countries whose data we analysed (see the section above).

Figure 8 shows how the solvency coverage ratios are distributed throughout our sample of insurers. There is a wide range of solvency coverage ratios as at 2016 year-end, with several insurers being very well capitalised (with solvency ratios of over 200%) but also with two insurers with solvency coverage ratios below 100%.

Not surprisingly for this first live annual reporting cycle, most insurers have used the SF to calculate their SCRs (25 out of 39 insurers included in our sample). Of those that did not use the SF, nine have used an IM and five a PIM. We note that those insurers using a PIM have been modelling predominantly the underwriting risk.

Figure 8 shows that the average of the solvency coverage ratios is quite similar whether using the SF (150%), a PIM (145%) or an IM (155%).

FIGURE 8: DISTRIBUTION OF SOLVENCY COVERAGE RATIOS AT 2016 YEAR-END



By design, the Minimum Capital Requirement (MCR) is 'calibrated' to be the 85th percentile of the own funds distribution over a one-year period. It means that, technically, insurers are 15% likely to suffer a loss of magnitude equal to the MCR. Should such a situation occur, a third of the firms from our panel would see their solvency coverage ratios falling to a level below 100%, as shown in Figure 9.

FIGURE 9: SOLVENCY COVERAGE RATIO AFTER A LOSS EQUAL TO THE MCR

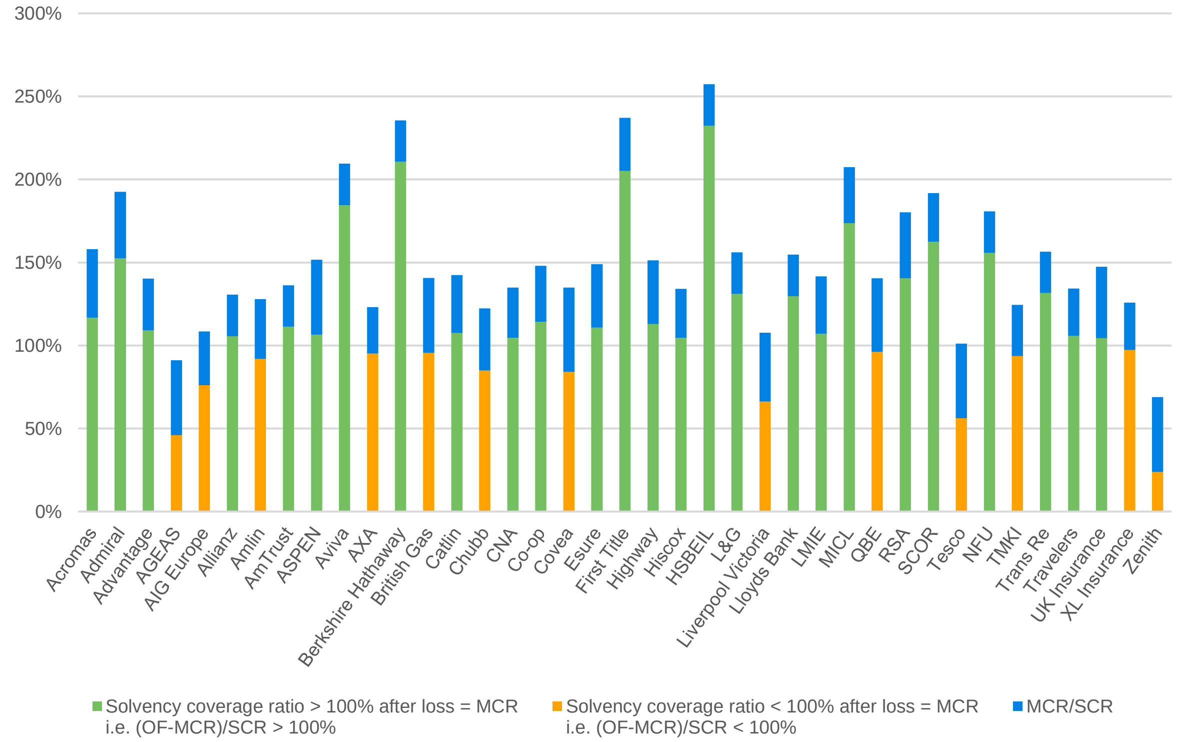
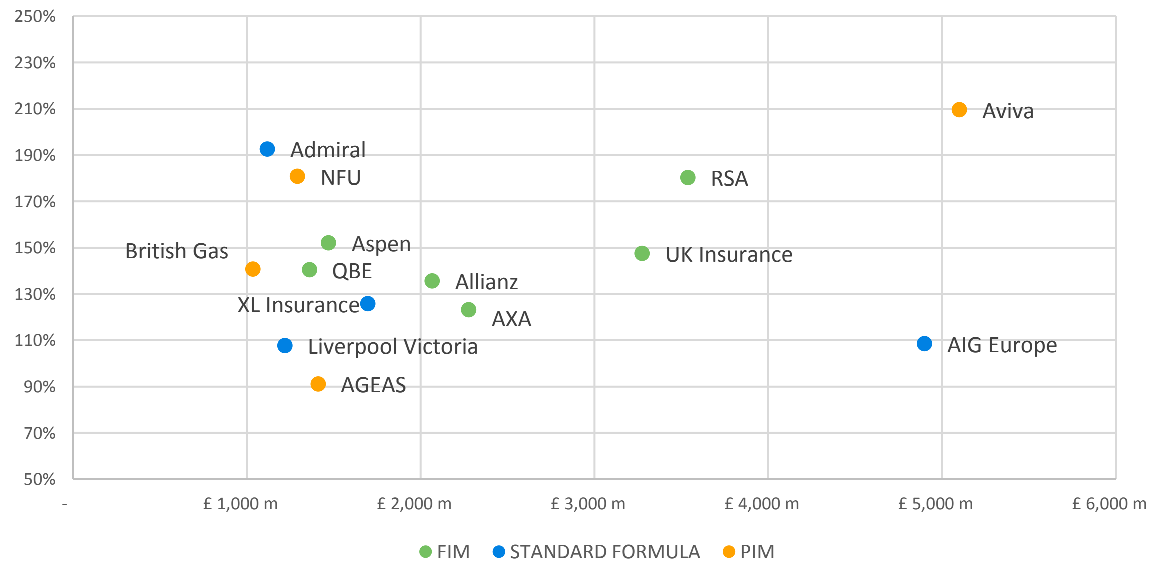


Figure 10 shows the solvency coverage ratio for each of the 14 insurers included in our sample whose 2016 GWP exceeded £1 billion. We provide a glossary of company names and their acronyms in Appendix A of this report.

FIGURE 10: SOLVENCY COVERAGE RATIOS, GWP > £1 BILLION



We note that only one of these 14 insurers (Aviva Insurance) has a solvency coverage ratio over 200%. Conversely, AGEAS Insurance Limited (AGEAS) was the only insurer exhibiting a solvency ratio below 100% as at 2016 year-end. AGEAS commented in its SFCR that this was largely due to the announcement in late February 2017 that the discount rate used by UK courts to calculate lump sum payments for personal injury claims ('the Ogden discount rate') was to reduce from 2.5% to -0.75%. This led to the solvency coverage ratio falling to 91%. On 31 March 2017, the AGEAS board approved immediate actions (including the issuance of additional share capital totalling £50 million and the purchase of a whole account stop-loss treaty) to improve the solvency coverage ratio by 25%, to 116%.

Figure 11 shows the solvency coverage ratio for each of the 25 insurers included in our panel whose 2016 GWP was less than £1 billion.

FIGURE 11: SOLVENCY COVERAGE RATIOS, GWP < £1 BILLION

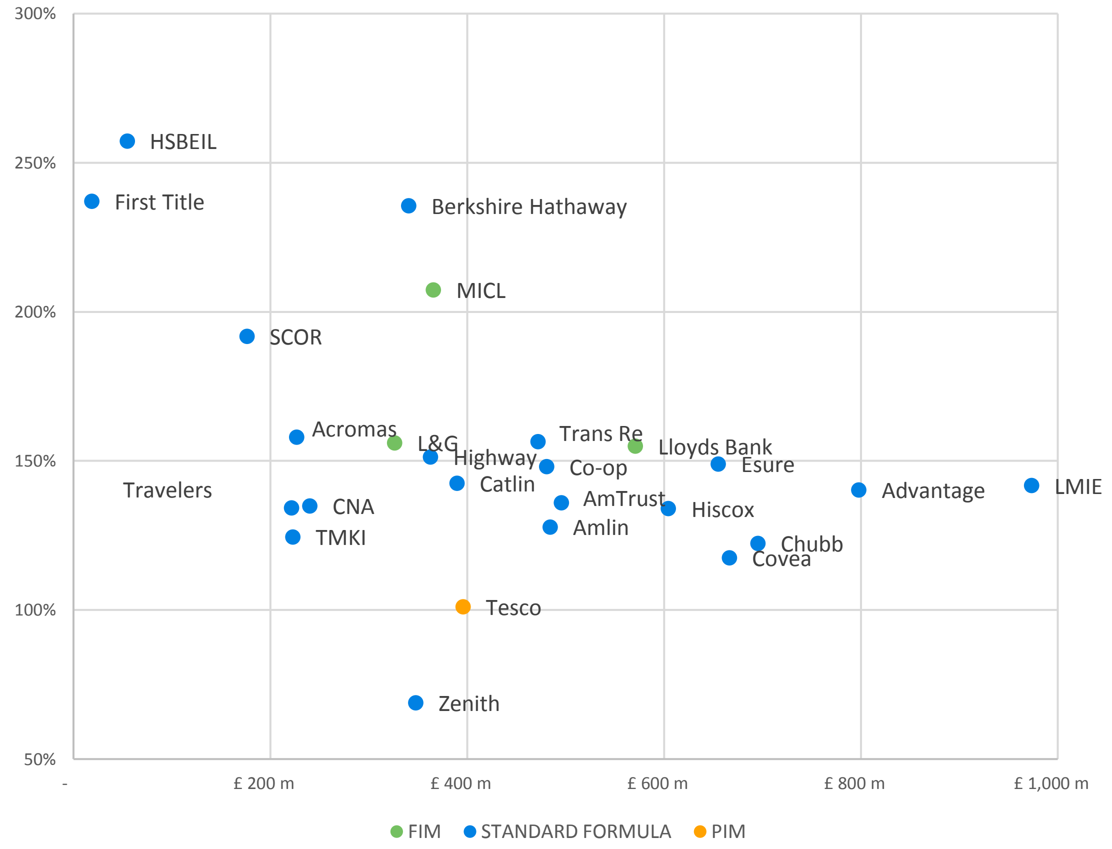


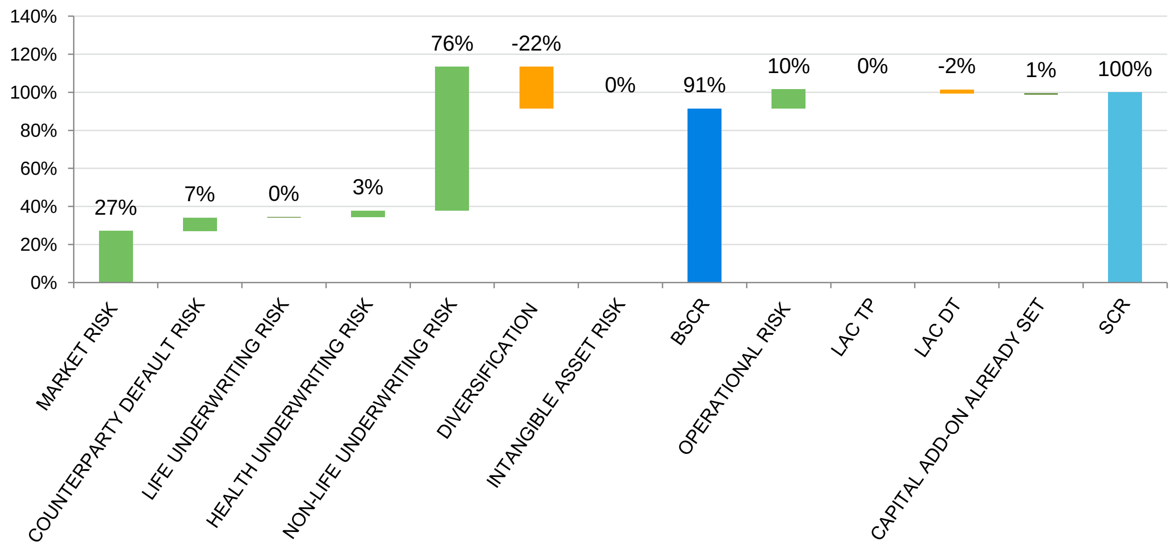
Figure 11 indicates that the bulk of the insurers in our sample whose GWP is less than £1 billion have solvency ratios between 120% and 160%, with a few outliers.

We note in particular that, as at the 2016 year-end, Zenith Insurance Plc (Zenith) reported a solvency ratio of 69%. In its SFCR, Markerstudy Group (the parent company of Zenith) commented that the group was taking advantage of transitional arrangements that allowed for a two-year period for insurers to meet fully their solvency requirements. However, during the first half of 2017, the group addressed the shortfall in own funds through an injection of capital totalling £29 million into Zenith and through capitalisation of intergroup loans. As a result, Zenith's solvency coverage ratio appeared to increase by 62.5%, to 131.5%.

ANALYSIS OF SCR AND MCR: WHERE IS THE RISK?

When conducting their SCR calculations, insurers have to cover all the risks that may affect their balance sheets and, consequently, their solvency positions. Figure 12 shows, on an aggregated basis, the breakdown of the SCR for firms using the SF. As expected, underwriting risk is the greatest risk for UK non-life insurers, making up to 76% of the overall SCR (before the application of any diversification benefits).

FIGURE 12: SCR BREAKDOWN BY RISK MODULE: FIRMS USING STANDARD FORMULA ONLY



The Prudential Regulation Authority (PRA) has barely used its power—under Section 55M of the Financial Services Market Act 2000—to apply a capital add-on in cases where it deems there to be a significant risk issue or governance deviation. Overall, capital add-ons represents less than 0.5% of the total SCR (1% for firms under SF only).

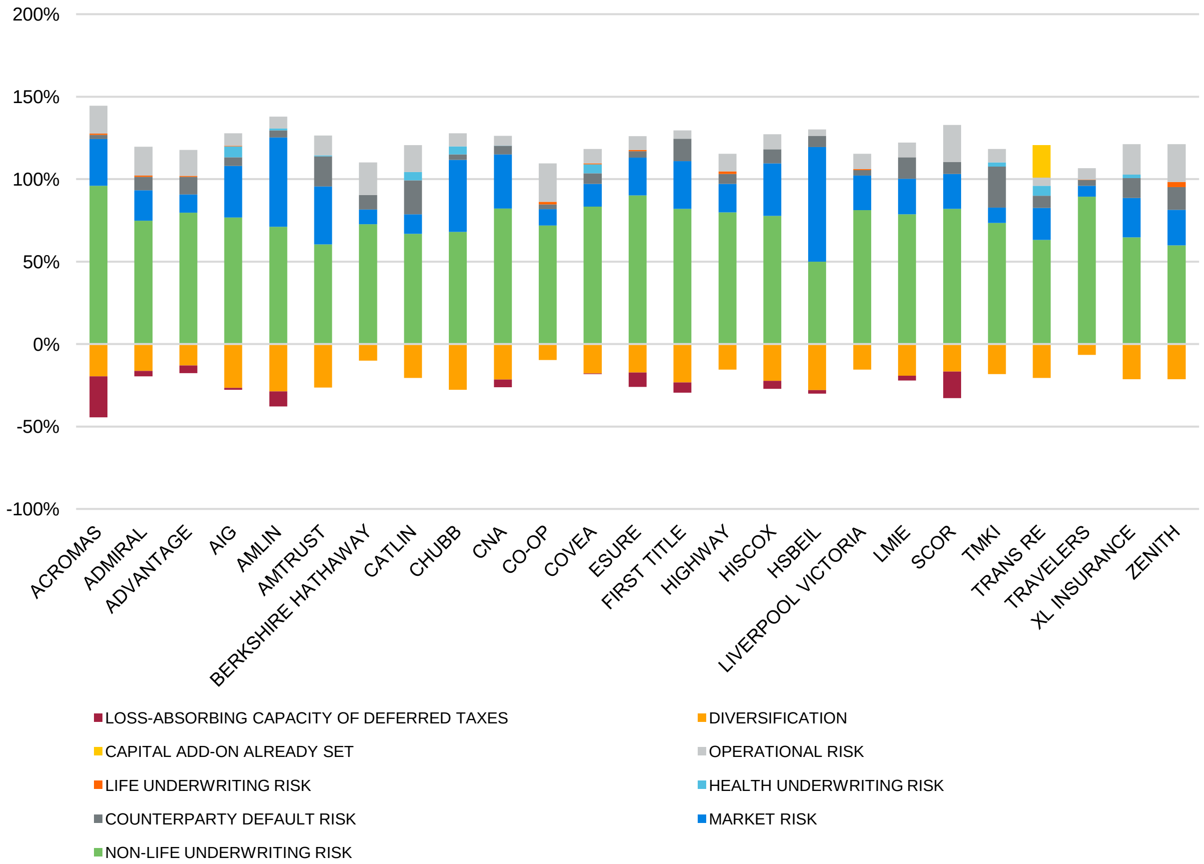
TransRe is the only company using the SF and included in our sample that has been hit with a capital add-on, which represents 19% of its overall SCR. British Gas Insurance, which is using a PIM, has also had a capital add-on applied to its SCR, the add-on representing 47% of its overall SCR. The add-ons are due to the operational risk and credit default risk in both companies being calculated using the SF approach, which is not in line with an economic view of the risk. Both TransRe and British Gas Insurance have disclosed their intentions to develop further their risk calculations in order to better reflect their respective risk profiles and hence negate the need for any add-on in the future.

We also note that the adjustments for deferred tax are, in general, much lower than the net deferred tax liabilities included within the corresponding balance sheets. This leads us to surmise that many firms have not made full use of the range of options available to reduce their SCRs.

In Figure 13, we show for each company in our sample that uses the SF the breakdown of their SCRs. Underwriting risk is the predominant risk category for all the companies but one, with market risk as the second most significant risk category. Only one firm (HSBEIL) has market risk as the main contributor to its SCR. This is due to HSBEIL's exposures to subsidiaries denominated in foreign currencies.

The counterparty default risk remains a low risk for UK non-life insurers, most of them having secured the bulk of their outwards reinsurance from well-rated carriers and most having few bad debts.

FIGURE 13: SCR BREAKDOWN BY RISK MODULE AND BY COMPANY



ANALYSIS OF OWN FUNDS

Own funds are divided into three tiers based on their 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 14, insurers' own funds are considered to be of good quality, with nearly 90% classified in Tier 1.

FIGURE 14: TIERING OF OWN FUNDS

ELIGIBLE OWN FUNDS TO MEET THE SCR	
TIER 1 UNRESTRICTED	88%
TIER 1 RESTRICTED	1%
TIER 2	8%
TIER 3	2%
ELIGIBLE OWN FUNDS TO MEET THE MCR	
TIER 1 UNRESTRICTED	97%
TIER 1 RESTRICTED	1%
TIER 2	2%

Except for Esure, the available own funds were 100% eligible to cover the SCR.

In Figure 15 we look at the split of basic and ancillary own funds by type. It appears that basic own funds are broadly equally split between ordinary shares and the reconciliation reserve (46% each), with subordinated liabilities and deferred tax assets making up the rest.

FIGURE 15: COMPONENTS OF OWN FUNDS

	2016 YEAR-END
BASIC OWN FUNDS	
ORDINARY SHARE CAPITAL	46%
RECONCILIATION RESERVE	46%
SUBORDINATED LIABILITIES	5%
DTA	2%
OTHER BASIC OWN FUNDS	0%
ANCILLARY OWN FUNDS	
UNPAID AND UNCALLED ORDINARY SHARE CAPITAL CALLABLE ON DEMAND	0%
LEGALLY BINDING COMMITMENT TO SUBSCRIBE AND PAY FOR SUBORDINATED LIABILITIES ON DEMAND	0%
LETTERS OF CREDIT AND GUARANTEES	81%
SUPPLEMENTARY MEMBERS CALLS	0%
OTHER ANCILLARY OWN FUNDS	19%

We note in passing that the expected profits included in future premiums (EPIFP) represents 9.5% of the overall reconciliation reserves.

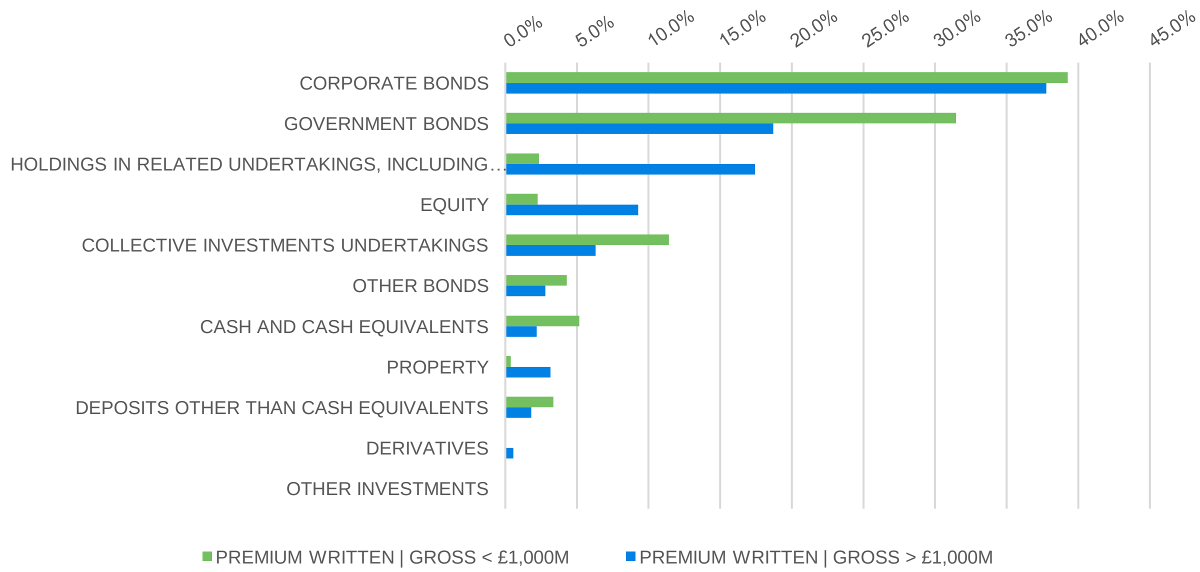
ANALYSIS OF MAIN BALANCE SHEET ITEMS

Assets

Investments in corporate and government bonds largely dominate the companies' portfolios, together accounting for more than 60% of total investments. Beyond their attractive nature—regular payments allowing non-life insurers to match the future claims payments—such bonds are also less expensive in terms of capital than are more volatile assets, such as equities.

As shown in Figure 16, it is worth noting that investment strategies appear, on average, to differ between 'small' and 'big' insurers. Although bonds are still the main investment vehicle, bigger firms hold significant participations in related undertakings and tend also to invest in more volatile assets, such as equities, or in less liquid assets, such as properties.

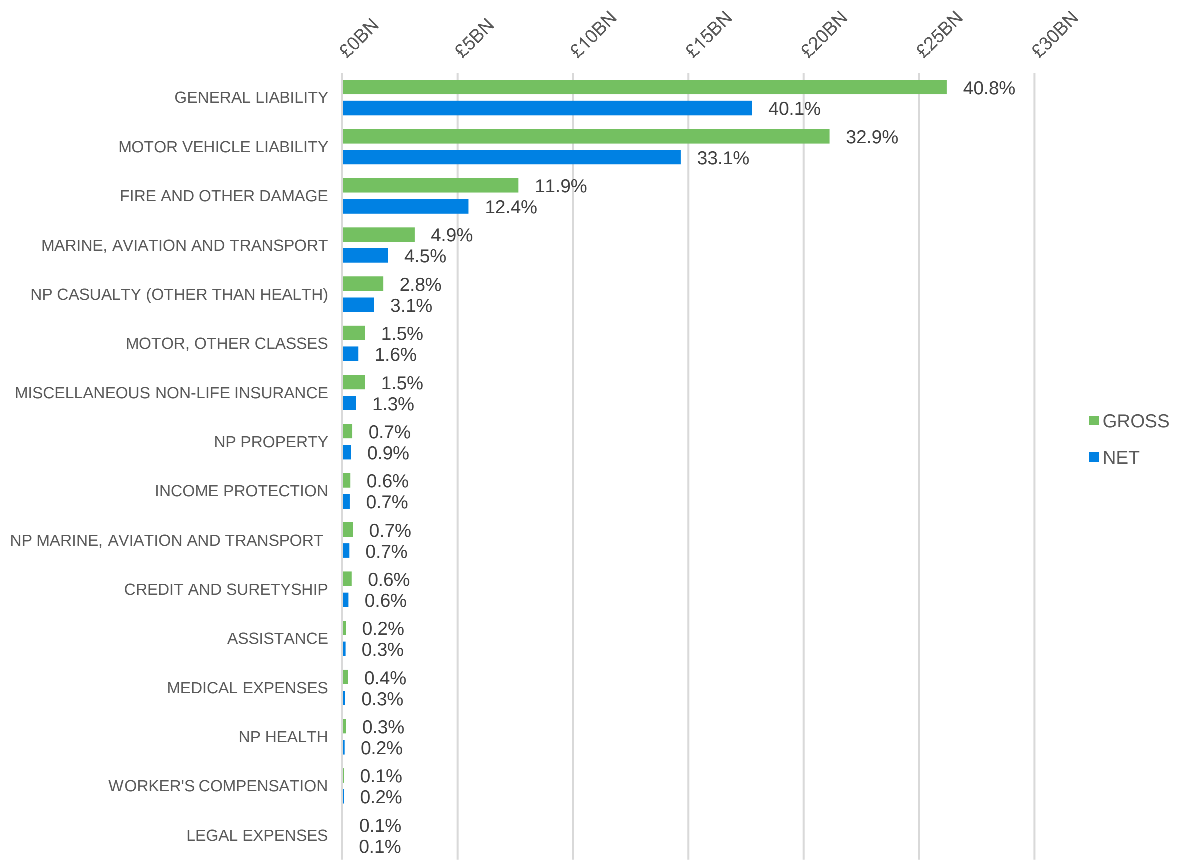
FIGURE 16: SPLIT OF INVESTMENTS BY ASSET CLASS



Technical provisions

Figure 17 shows the composition of technical provisions across non-life lines of business (as categorised under Solvency II) as at 2016 year-end.

FIGURE 17: TECHNICAL PROVISIONS SPLIT BY SOLVENCY II SEGMENTS

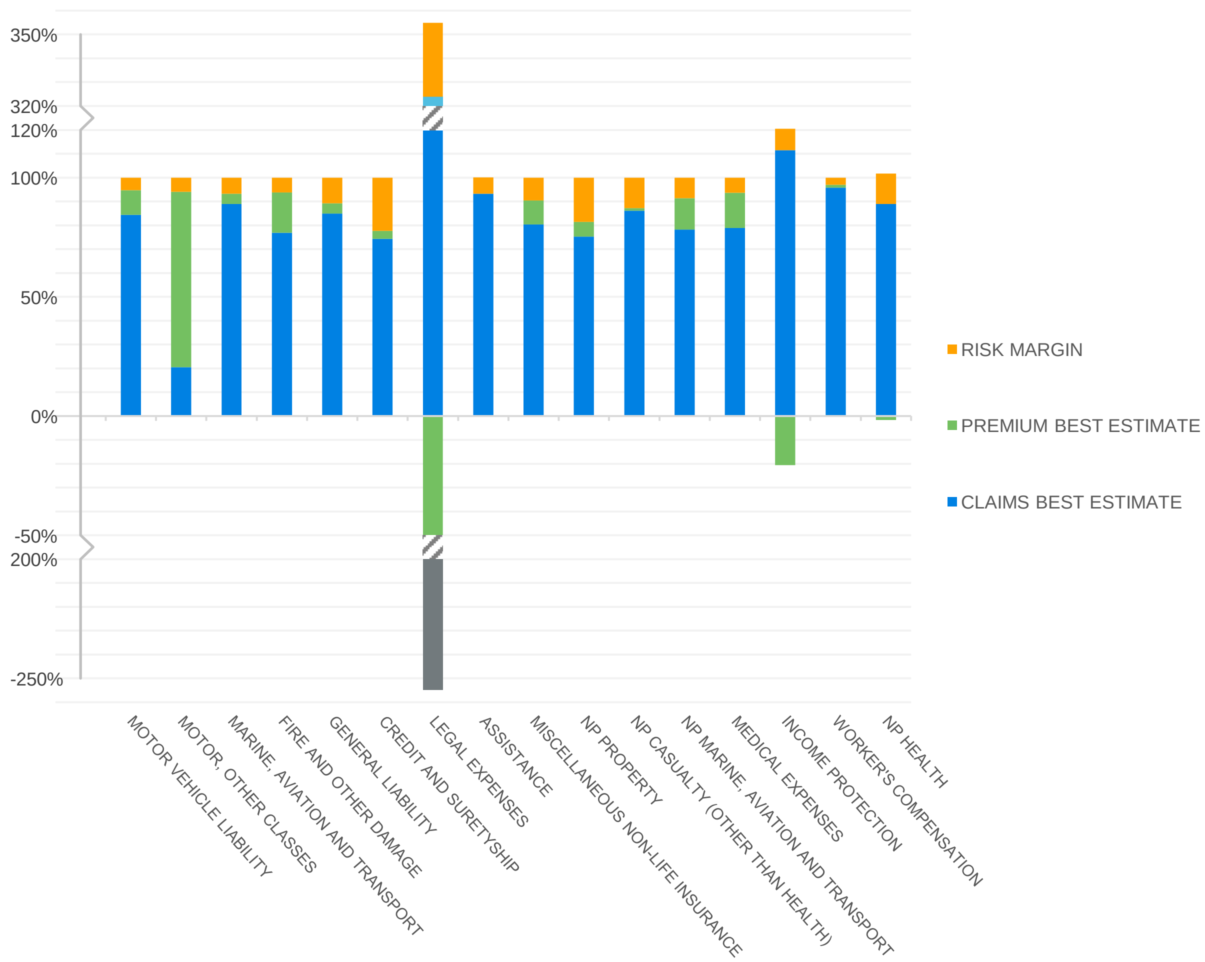


The 39 insurers included in our sample have reserved almost £65 billion of technical provisions gross of reinsurance, and nearly £45 billion net of reinsurance. More than 70% of the reserves are in respect of the long-tail business classes, general liability and motor vehicle liability.

The provisions in respect of annuities stemming from non-life insurance contracts (not included above) reached nearly £2.6 billion as at 2016 year-end. These annuities are mainly a result of Periodic Payment Order liabilities and are a key component of UK non-life firms' liabilities (ranking fifth in terms of volume of gross technical provisions).

In Figure 18, one can see that the best estimate of claims provisions represents the biggest part of the Solvency II technical provisions.

FIGURE 18: COMPONENTS OF NET TECHNICAL PROVISIONS



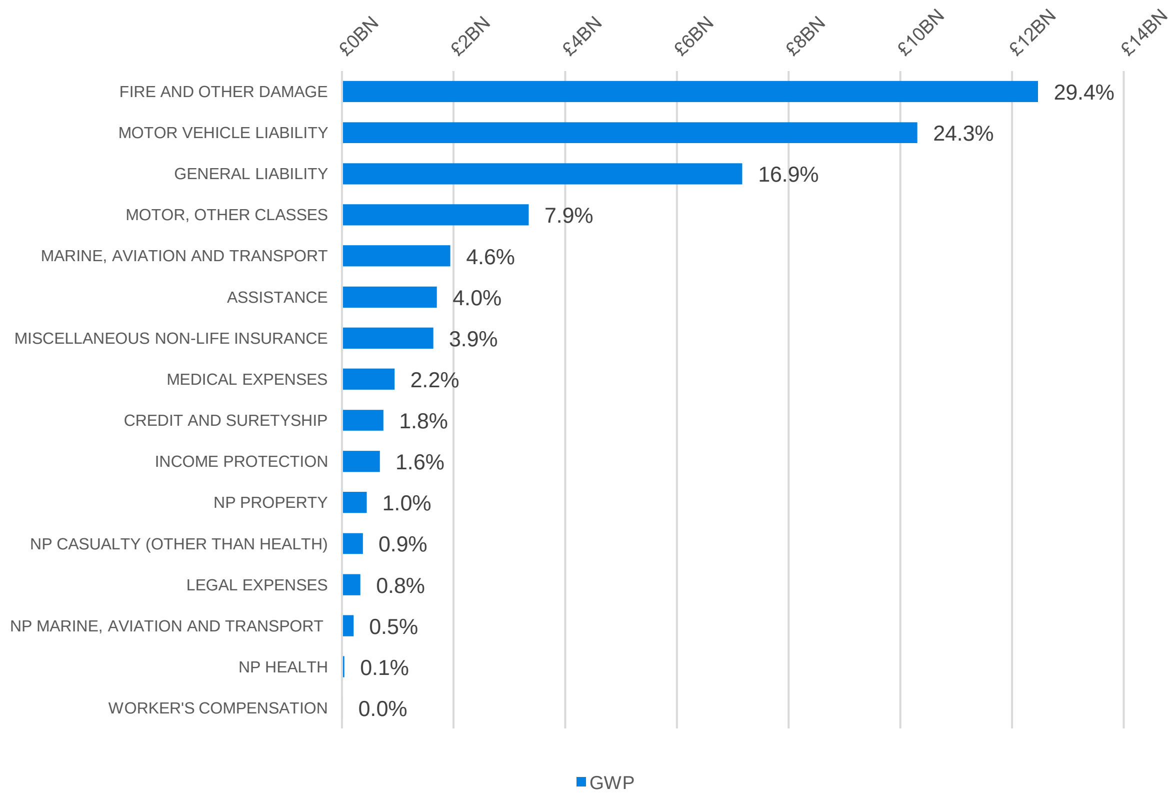
The lines of business 'Legal Expenses' and 'Income Protection' show negative best estimates of premium provisions, whereas the line of business 'Motor, Other Classes' is displaying a best estimate of premium provisions that is materially higher than the best estimate of claims provisions.

The Risk Margin (RM) is added to the best estimates of the claims and premiums provisions to form the technical provisions to be held by the insurer as part of its economic balance sheet. The concept as well as the methodology used to assess this risk margin has been much debated over the past few years. On an aggregated basis, the RM represents 8.5% of the net technical provisions.

ANALYSIS OF UNDERWRITING

In 2016, our sample of UK non-life insurers wrote more than £42 billion of gross premiums, of which nearly 30% relates to fire and other damages covers. The motor liability and general liability lines together make up 40% of the GWP, in line with the observation stating that they are the key contributors to technical provisions.

FIGURE 19: GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS



In Figure 20, we show the gross and net of reinsurance loss ratios by Solvency II lines of business (sorted by GWP volumes). The two motor insurance lines of business exhibit the highest loss ratios, which is not unexpected due to the very competitive nature of the UK motor insurance market. We also note that the change in the Ogden discount rate from 2.5% to -0.75% pushed upwards the loss ratios for motor vehicle liability and, to a lesser extent, for general liability.

FIGURE 20: GROSS AND NET LOSS RATIOS BY LINE OF BUSINESS

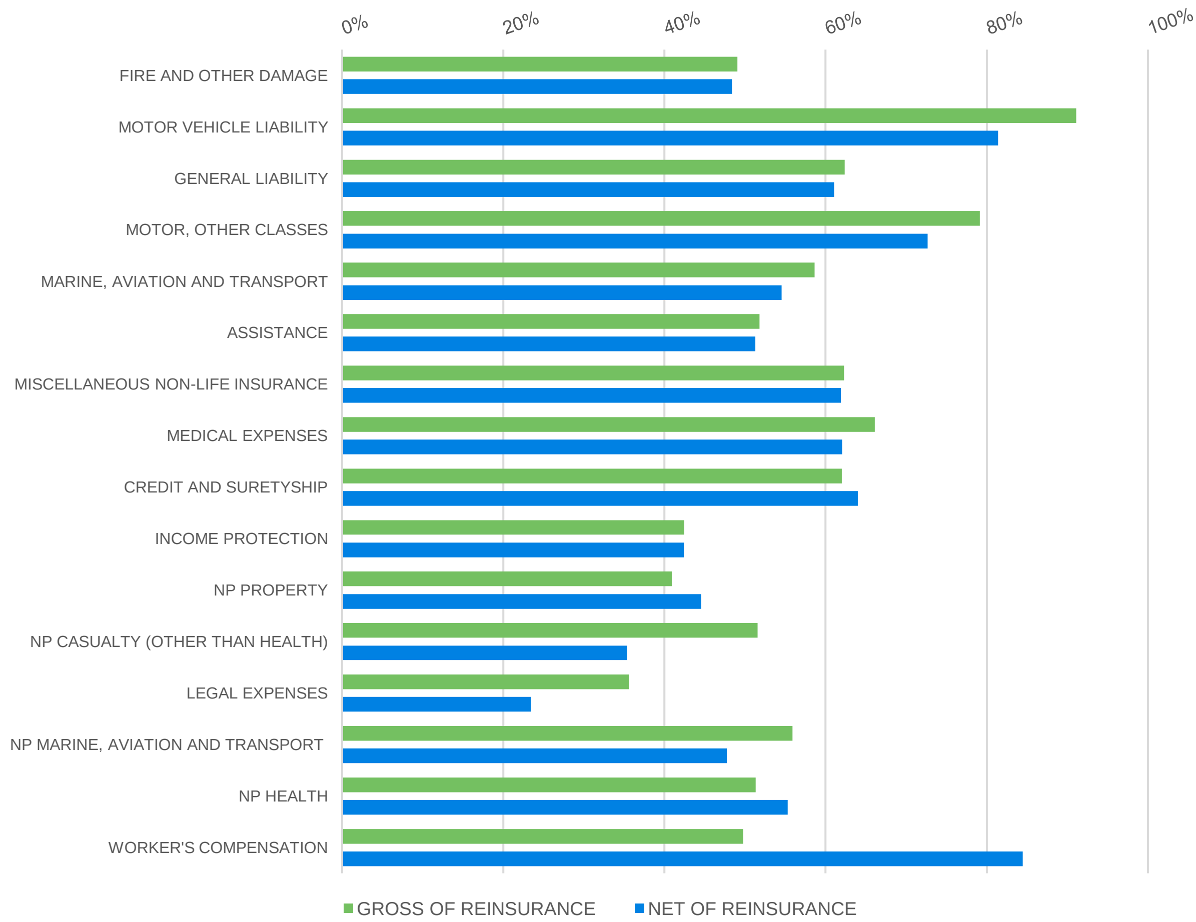
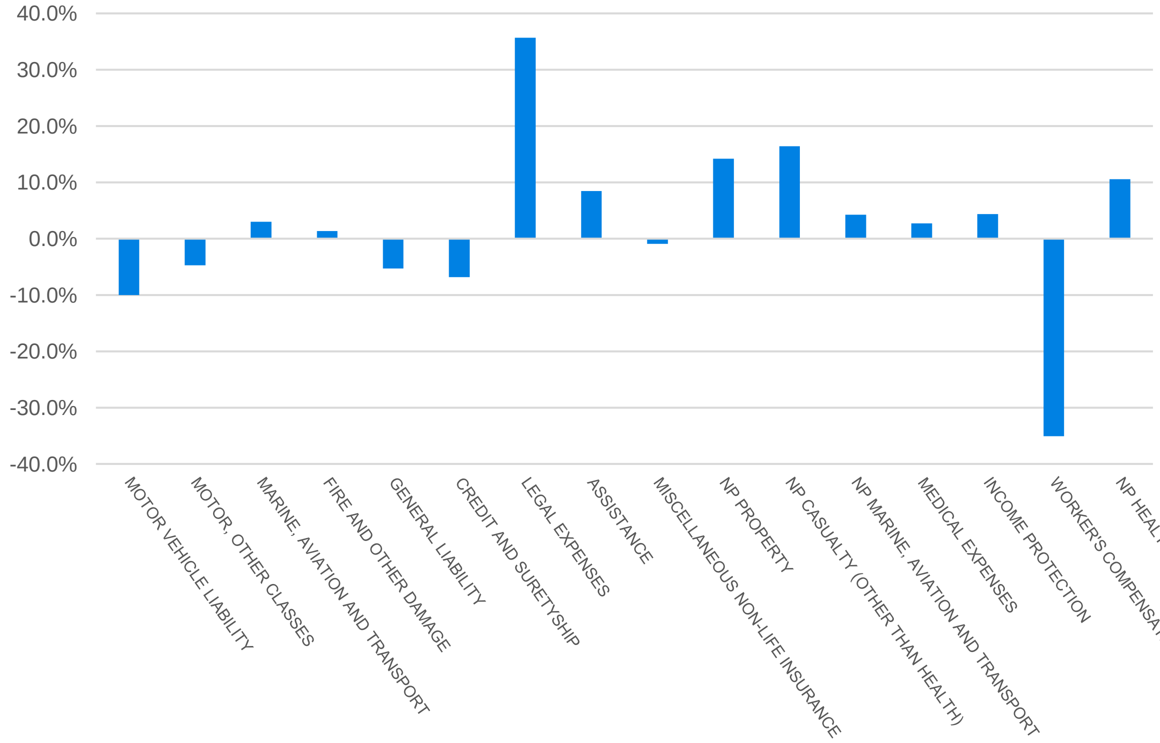


Figure 20 above also indicates that, for most Solvency II lines of business, the purchase of reinsurance makes economic sense (in addition to protecting against extreme events) with the net of reinsurance loss ratios being lower than the gross loss ratios.

In Figure 21 we show the operating margin for each of the Solvency II lines of business on an aggregated basis for the insurers included in our panel. We defined (and derived) the operating margin as (net earned premium – net incurred – expenses incurred) / (gross earned premium). We note that the operating margin as defined includes movements in prior year reserves (part of the net incurred) but does not include investment income.

FIGURE 21: OPERATING MARGINS IN 2016 BY LINE OF BUSINESS



As alluded to above, Figure 21 also indicates that the motor lines of business exhibited a negative operating margin in 2016, due in part to the change in the Ogden discount rate and to the market remaining highly competitive. General liability was also adversely affected by the change in the Ogden discount rate and in 2016 this line of business also had a negative operating margin.

The year 2016 was a benign one in terms of weather events across Europe (companies in our panel write predominantly business in the UK and in continental Europe), which partly explains the positive operating margin experienced by the fire and other damage line of business.

Appendix A: List of the UK companies analysed

FULL NAME	SHORT NAMES USED IN THE REPORT
ACROMAS INSURANCE COMPANY LIMITED	ACROMAS
ADMIRAL INSURANCE COMPANY LIMITED	ADMIRAL
ADVANTAGE INSURANCE COMPANY LIMITED	ADVANTAGE
AGEAS INSURANCE LTD.	AGEAS
AIG EUROPE LIMITED	AIG EUROPE
ALLIANZ INSURANCE PLC	ALLIANZ
AMLIN INSURANCE S.E.	AMLIN
AMTRUST EUROPE LIMITED	AMTRUST
ASPEN INSURANCE UK LIMITED	ASPEN
AVIVA INSURANCE LIMITED	AVIVA
AXA INSURANCE UK PLC	AXA
BERKSHIRE HATHAWAY INTERNATIONAL INSURANCE LIMITED	BERKSHIRE HATHAWAY
BRITISH GAS INSURANCE LIMITED	BRITISH GAS
CATLIN INSURANCE COMPANY (UK) LTD	CATLIN
CHUBB	CHUBB
CNA INSURANCE COMPANY LIMITED	CNA
CO-OP INSURANCE	CO-OP
COVEA INSURANCE PLC	COVEA
ESURE INSURANCE LIMITED	ESURE
FIRST TITLE INSURANCE PLC	FIRST TITLE
HIGHWAY INSURANCE COMPANY LTD	HIGHWAY
HISCOX INSURANCE COMPANY LIMITED	HISCOX
HSB ENGINEERING INSURANCE LIMITED	HSBEIL
LEGAL & GENERAL INSURANCE LTD	L&G
LIVERPOOL VICTORIA INSURANCE COMPANY LIMITED	LIVERPOOL VICTORIA
LLOYDS BANK GENERAL INSURANCE LIMITED	LLOYDS BANK
LIBERTY MUTUAL INSURANCE EUROPE LIMITED	LMIE
MARKEL INTERNATIONAL INSURANCE COMPANY LIMITED	MICL
QBE INSURANCE (EUROPE) LIMITED	QBE
ROYAL & SUN ALLIANCE INSURANCE PLC	RSA
SCOR UK COMPANY LIMITED	SCOR
TESCO UNDERWRITING LIMITED	TESCO
THE NATIONAL FARMERS UNION MUTUAL INSURANCE SOCIETY LIMITED	NFU
TOKIO MARINE KILN INSURANCE LIMITED	TMKI
TRANSRE LONDON LIMITED	TRANS RE
TRAVELERS INSURANCE COMPANY LIMITED	TRAVELERS
UK INSURANCE LIMITED	UK INSURANCE
XL INSURANCE COMPANY SE	XL INSURANCE
ZENITH INSURANCE PLC	ZENITH

Appendix B: Selected figures by UK undertaking

IN £'000	GROSS WRITTEN PREMIUM (1)	NET WRITTEN PREMIUM (2)	GROSS EARNED PREMIUM (3)	NET EARNED PREMIUM (4)	GROSS INCURRED (5)	NET INCURRED (6)	GROSS LOSS RATIO (7)=(5)/(3)	NET LOSS RATIO (8)=(6)/(4)	TOTAL EXPENSES (9)	UNDERWRITING RESULT (10)=(4)-(6)-(9)	COMBINED RATIO (10)=((6)+(9))/(4)
ACROMAS INSURANCE COMPANY LIMITED	226,817	38,701	223,168	100,079	128,895	34,131	58%	34%	11,784	54,163	46%
ADMIRAL INSURANCE COMPANY LIMITED	1,117,280	390,997	1,029,515	359,758	714,889	229,361	69%	64%	69,229	61,168	83%
ADVANTAGE INSURANCE COMPANY LIMITED	797,722	403,232	716,660	359,649	704,589	257,721	98%	72%	76,437	25,491	93%
AGEAS INSURANCE LTD.	1,409,346	1,320,454	1,400,484	1,309,824	1,313,407	1,069,088	94%	82%	423,661	-182,925	114%
AIG EUROPE LIMITED	4,898,780	3,661,220	4,946,487	3,720,775	3,506,930	2,614,339	71%	70%	1,559,352	-452,916	112%
ALLIANZ INSURANCE PLC	2,065,830	966,283	2,112,479	1,193,733	1,384,439	775,877	66%	65%	413,923	3,933	100%
AMLIN INSURANCE S.E.	484,172	420,169	476,336	420,386	252,157	198,172	53%	47%	172,205	50,009	88%
AMTRUST EUROPE LIMITED	495,792	250,108	459,790	204,438	308,525	81,205	67%	40%	104,441	18,792	91%
ASPEN INSURANCE UK LIMITED	1,469,399	539,633	1,438,603	522,867	797,314	257,696	55%	49%	290,384	-25,213	105%
AVIVA INSURANCE LIMITED	5,100,379	-620,063	4,945,480	263,599	3,566,898	-198,369	72%	-75%	1,047,319	-585,351	322%
AXA INSURANCE UK PLC	2,276,360	2,171,223	2,226,921	2,112,332	1,421,194	1,356,106	64%	64%	817,867	-61,641	103%
BERKSHIRE HATHAWAY INTERNATIONAL INSURANCE LIMITED	340,666	56,323	318,590	51,036	191,170	29,901	60%	59%	12,527	8,607	83%
BRITISH GAS INSURANCE LIMITED	1,033,286	1,033,286	1,008,697	1,008,697	473,305	473,305	47%	47%	458,715	76,677	92%
CATLIN INSURANCE COMPANY (UK) LTD	389,611	119,703	456,443	140,267	218,457	36,543	48%	26%	127,004	-23,280	117%
CHUBB	695,224	543,002	714,232	593,541	432,098	366,444	60%	62%	255,567	-28,470	105%
CNA INSURANCE COMPANY LIMITED	239,977	211,239	237,305	211,036	126,374	120,271	53%	57%	92,268	-1,503	101%
CO-OP INSURANCE	480,857	453,655	466,474	439,011	261,070	270,084	56%	62%	210,039	-41,112	109%
COVEA INSURANCE PLC	666,306	619,793	637,577	591,140	431,450	354,086	68%	60%	246,909	-9,855	102%
ESURE INSURANCE LIMITED	655,001	607,205	598,029	554,902	472,690	411,056	79%	74%	144,597	-751	100%
FIRST TITLE INSURANCE PLC	18,578	17,894	18,568	17,884	2,142	1,771	12%	10%	12,750	3,363	81%
HIGHWAY INSURANCE COMPANY LTD	362,720	286,706	348,169	272,227	290,569	219,057	83%	80%	87,986	-34,816	113%
HISCOX INSURANCE COMPANY LIMITED	604,443	309,379	564,432	294,457	174,715	108,733	31%	37%	190,190	-4,466	102%
HSB ENGINEERING INSURANCE LIMITED	54,585	50,155	55,573	51,068	18,005	16,420	32%	32%	31,666	2,982	94%
LEGAL & GENERAL INSURANCE LTD	326,139	299,305	329,174	304,004	142,067	140,733	43%	46%	142,366	20,905	93%
LIVERPOOL VICTORIA INSURANCE COMPANY LIMITED	1,218,721	949,463	1,182,214	917,230	930,962	712,726	79%	78%	291,655	-87,151	110%

IN £'000	GROSS WRITTEN PREMIUM (1)	NET WRITTEN PREMIUM (2)	GROSS EARNED PREMIUM (3)	NET EARNED PREMIUM (4)	GROSS INCURRED (5)	NET INCURRED (6)	GROSS LOSS RATIO (7)=(5)/(3)	NET LOSS RATIO (8)=(6)/(4)	TOTAL EXPENSES (9)	UNDERWRITING RESULT (10)=(4)-(6)-(9)	COMBINED RATIO (10)=((6)+(9))/(4)
LLOYDS BANK GENERAL INSURANCE LIMITED	570,798	550,187	604,248	585,963	222,629	222,624	37%	38%	333,464	29,875	95%
LIBERTY MUTUAL INSURANCE EUROPE LIMITED	973,431	600,662	911,064	530,842	480,959	320,638	53%	60%	244,710	-34,505	106%
MARKEL INTERNATIONAL INSURANCE COMPANY LIMITED	365,656	294,031	379,729	301,471	170,294	127,553	45%	42%	145,922	27,996	91%
QBE INSURANCE (EUROPE) LIMITED	1,359,162	1,111,614	1,341,013	1,008,807	811,907	517,462	61%	51%	427,260	64,085	94%
ROYAL & SUN ALLIANCE INSURANCE PLC	3,537,158	2,761,412	3,642,000	2,838,000	2,092,478	1,614,825	57%	57%	992,681	230,494	92%
SCOR UK COMPANY LIMITED	176,200	88,850	189,120	113,274	74,395	63,439	39%	56%	42,168	7,667	93%
TESCO UNDERWRITING LIMITED	395,923	370,232	401,002	377,331	403,795	323,476	101%	86%	100,266	-46,411	112%
THE NATIONAL FARMERS UNION MUTUAL INSURANCE SOCIETY LIMITED	1,290,676	1,211,805	1,286,536	1,207,959	845,340	834,262	66%	69%	368,850	4,847	100%
TOKIO MARINE KILN INSURANCE LIMITED	222,931	128,855	217,551	127,044	129,151	82,502	59%	65%	61,608	-17,066	113%
TRANSRE LONDON LIMITED	472,065	174,981	468,435	173,144	280,989	108,686	60%	63%	55,823	8,635	95%
TRAVELERS INSURANCE COMPANY LIMITED	221,495	190,967	225,957	195,671	169,698	139,356	75%	71%	103,084	-46,769	124%
UK INSURANCE LIMITED	3,274,087	3,067,841	3,202,799	3,000,569	2,027,478	1,663,445	63%	55%	1,275,091	62,033	98%
XL INSURANCE COMPANY SE	1,694,905	514,738	1,484,378	452,983	804,892	301,945	54%	67%	237,690	-86,652	119%
ZENITH INSURANCE PLC	347,729	73,345	350,885	56,724	329,931	102,663	94%	181%	-2,957	-42,982	176%
TOTAL	42,330,206	26,238,585	41,616,117	26,983,724	27,108,247	16,359,332	65%	61%	11,676,502	-1,052,111	104%

Appendix C: Solvency performance by undertaking

IN £0,000	SCR	MCR	ELIGIBLE OWN FUNDS SCR	ELIGIBLE OWN FUNDS MCR	SOLVENCY RATIO SCR	SOLVENCY RATIO MCR	GROSS TECHNICAL PROVISIONS (TP AS A WHOLDE + BE + RM)	SF / PIM / FIM
ACROMAS INSURANCE COMPANY LIMITED	95,022	39,191	150,142	150,142	158%	383%	550,651	SF
ADMIRAL INSURANCE COMPANY LIMITED	276,415	110,490	532,089	412,089	192%	373%	1,647,863	SF
ADVANTAGE INSURANCE COMPANY LIMITED	179,021	55,696	251,084	251,084	140%	451%	949,023	SF
AGEAS INSURANCE LTD.	555,247	249,861	505,530	376,688	91%	151%	2,162,756	PIM
AIG EUROPE LIMITED	3,360,455	1,088,073	3,642,950	3,089,677	108%	284%	9,083,417	SF
ALLIANZ INSURANCE PLC	828,842	207,210	1,082,920	1,035,536	131%(*)	500%(*)	1,863,259	FIM
AMLIN INSURANCE S.E.	304,576	109,745	389,428	367,200	128%	335%	777,751	SF
AMTRUST EUROPE LIMITED	217,087	54,272	295,905	290,225	136%	535%	921,116	SF
ASPEN INSURANCE UK LIMITED	572,352	257,558	867,681	867,681	152%	337%	2,803,981	FIM
AVIVA INSURANCE LIMITED	1,257,923	314,481	2,635,076	2,291,405	209%	729%	5,842,713	PIM
AXA INSURANCE UK PLC	1,775,892	497,291	2,186,504	2,025,011	123%	407%	3,767,674	FIM
BERKSHIRE HATHAWAY INTERNATIONAL INSURANCE LIMITED	123,436	30,859	290,848	290,848	236%	942%	854,553	SF
BRITISH GAS INSURANCE LIMITED	73,802	33,211	103,797	103,797	141%	313%	10,438	PIM
CATLIN INSURANCE COMPANY (UK) LTD	110,768	38,743	157,832	157,832	142%	407%	593,176	SF
CHUBB	577,794	215,852	707,151	684,309	122%	317%	1,626,292	SF
CNA INSURANCE COMPANY LIMITED	243,299	73,825	328,298	324,166	135%	439%	531,084	SF
CO-OP INSURANCE	232,743	78,643	344,604	284,715	148%	362%	502,532	SF
COVEA INSURANCE PLC	204,227	103,637	275,361	275,361	135%(*)	266%	684,442	SF
ESURE INSURANCE LIMITED	234,210	89,569	348,992	249,801	149%	279%	659,480	SF
FIRST TITLE INSURANCE PLC	11,783	3,768	27,940	27,940	237%	742%	20,357	SF
HIGHWAY INSURANCE COMPANY LTD	160,376	61,720	242,784	230,530	151%	374%	581,611	SF
HISCOX INSURANCE COMPANY LIMITED	184,737	54,291	247,606	247,606	134%	456%	536,382	SF
HSB ENGINEERING INSURANCE LIMITED	44,572	11,143	114,696	114,696	257%	1029%	60,269	SF
LEGAL & GENERAL INSURANCE LTD	162,265	40,566	253,285	253,285	156%	624%	125,131	FIM
LIVERPOOL VICTORIA INSURANCE COMPANY LIMITED	427,333	176,927	460,096	445,980	108%	252%	1,376,833	SF
LLOYDS BANK GENERAL INSURANCE LIMITED	289,370	72,343	447,712	447,712	155%	619%	177,265	FIM

IN £0,000	SCR	MCR	ELIGIBLE OWN FUNDS SCR	ELIGIBLE OWN FUNDS MCR	SOLVENCY RATIO SCR	SOLVENCY RATIO MCR	GROSS TECHNICAL PROVISIONS (TP AS A WHOLDE + BE + RM)	SF / PIM / FIM
LIBERTY MUTUAL INSURANCE EUROPE LIMITED	575,687	199,252	815,973	815,973	142%	410%	1,802,995	SF
MARKEL INTERNATIONAL INSURANCE COMPANY LIMITED	261,816	88,100	542,793	542,793	207%	616%	868,518	FIM
QBE INSURANCE (EUROPE) LIMITED	909,212	403,549	1,277,106	1,257,202	140%	312%	3,479,098	FIM
ROYAL & SUN ALLIANCE INSURANCE PLC	1,793,452	712,812	3,232,547	2,478,383	180%	348%	5,821,468	FIM
SCOR UK COMPANY LIMITED	95,301	27,870	182,790	158,397	192%	568%	733,960	SF
TESCO UNDERWRITING LIMITED	160,985	72,443	162,821	108,791	101%	150%	689,134	PIM
THE NATIONAL FARMERS UNION MUTUAL INSURANCE SOCIETY LIMITED	3,544,165	886,041	6,406,049	6,406,049	181%	723%	1,964,995	PIM
TOKIO MARINE KILN INSURANCE LIMITED	100,333	30,972	124,917	97,358	125%	314%	289,729	SF
TRANSRE LONDON LIMITED	265,110	66,278	414,976	413,777	157%	624%	422,923	SF
TRAVELERS INSURANCE COMPANY LIMITED	313,249	89,291	420,646	395,843	134%	443%	766,591	SF
UK INSURANCE LIMITED	1,377,933	593,492	2,031,447	1,612,645	147%	272%	4,827,097	FIM
XL INSURANCE COMPANY SE	552,310	157,600	694,472	672,970	126%	427%	3,525,558	SF
ZENITH INSURANCE PLC	46,250	20,813	31,848	28,560	69%	137%	342,808	SF
TOTAL	22,499,34	7,417,479	33,228,697	30,284,057	148%	408%	64,224,047	
(*) THE CALCULATED RATIO IS DIFFERENT FROM THE ONE DISPLAYED IN THE QRT S.23								

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.

milliman.com

CONTACT

Lamia Amouch
lamia.amouch@milliman.com

Derek Newton
derek.newton@milliman.com

Vincent Robert
vincent.robert@milliman.com

Flavien Thery
flavien.thery@milliman.com