

MILLIMAN RESEARCH REPORT

Analysis of Solvency and Financial Condition Reports – Year-End 2017

Irish life insurers

December 2018

Aisling Barrett, FSAI
Matthew McIlvanna

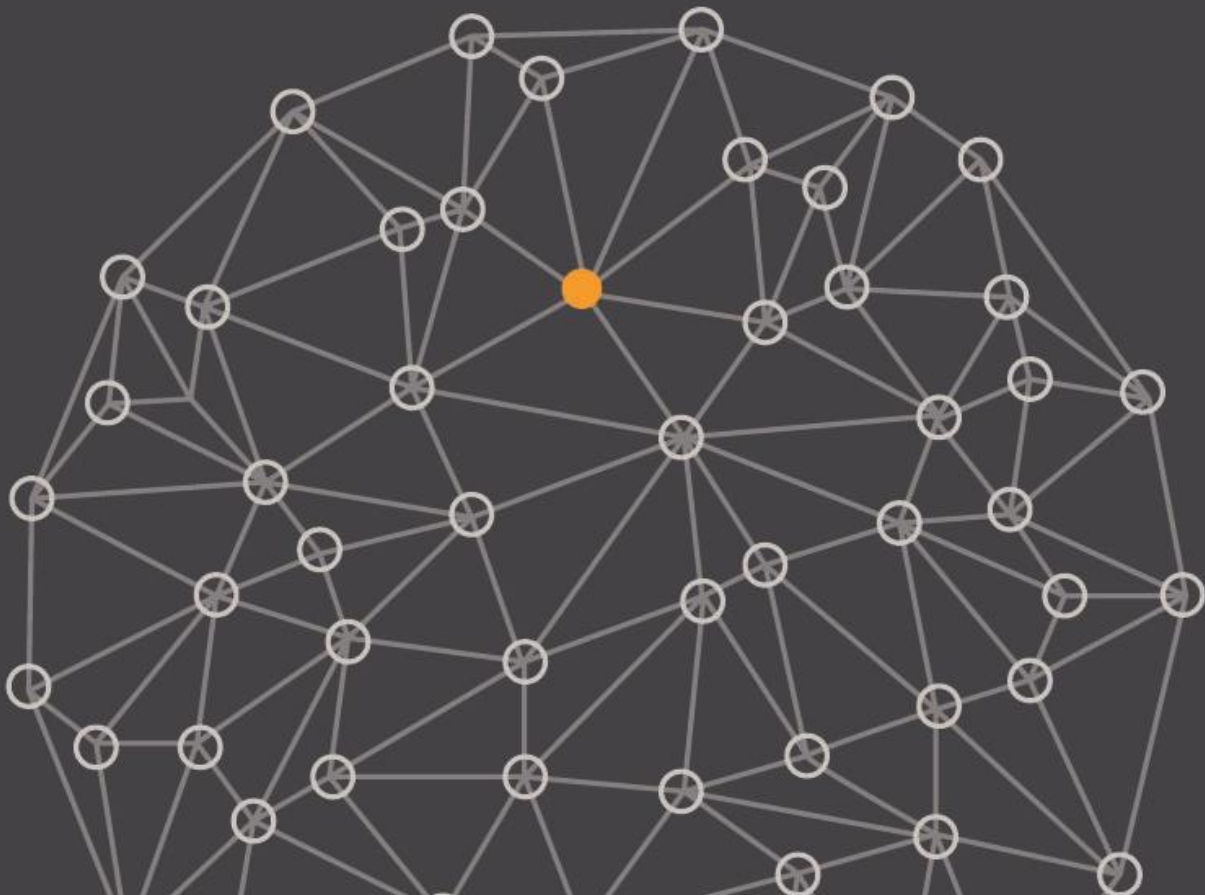


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Introduction

Solvency II came into effect on 1 January 2016 and introduced a number of disclosure requirements for European insurers. Under the new requirements, European insurers were required to publish detailed Solvency and Financial Condition Reports (“**SFCR**”) for the first time in May 2017. The second set of SFCRs were published in May 2018. The SFCRs contain a significant amount of information on the insurance companies, including details on their 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.

IRISH MARKET COVERAGE

All SFCRs for Irish companies are available on the website of the Central Bank of Ireland (“**CBI**”) for 2016 and 2017¹. On 18 December 2018 the CBI published a report (the “**CBI report**”) giving a consolidated view of the publicly available data for insurance firms under Solvency II for year ends in 2017 accompanied by a data repository spreadsheet with detailed QRT information by company. The CBI has committed to producing this report and accompanying data on an annual basis going forward. This report was not produced by the CBI for year ends in 2016.

We have also analysed the individual SFCRs of Irish companies. Our analysis is based on the 45 life insurance companies authorised in Ireland included in the CBI’s report. We have included a comparison to 2016 in some sections. This is based on our own analysis of 2016 SFCRs for 39 life insurance companies authorised in Ireland. We believe this gives close to 100% of Solvency II balance sheets in 2016.

In this report our analysis of the Irish life insurance market includes direct writers only as per the institution type categorisation in the CBI report, we have not included any reinsurers in this analysis. Appendix 1 contains a list of all Irish life companies included in our analysis.

UNDERLYING DATA

In carrying out our analysis and producing this research report, we relied on the data provided by the CBI and the data provided in the SFCRs and QRTs of our sample companies. We have not audited or verified this data and 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.

This research report is intended solely for educational purposes and presents information of a general nature. This report is not intended to guide or determine any specific individual situation and persons should consult qualified professionals before taking specific actions.

¹ <https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/solvency-ii/solvency-and-financial-condition-report-repository>

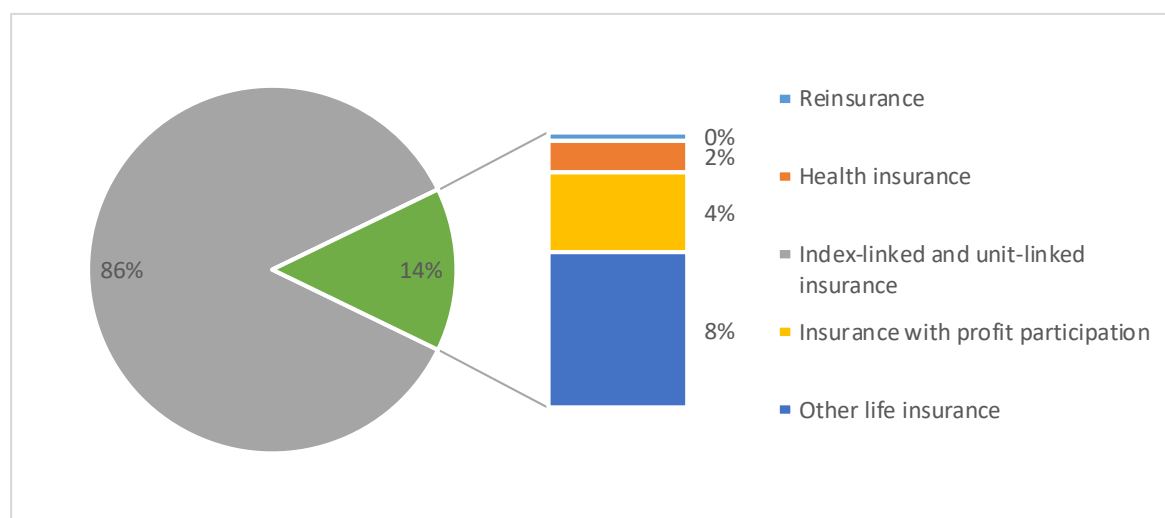
Analysis of Irish Life Insurers

Our analysis covers the 45 life insurers included in the CBI report for year ends in 2017 and a sample of 39 life insurers for year ends in 2016². This gives 100% market coverage for 2017 and close to 100% for 2016. The CBI's aggregate statistical data³ indicates that there were 44 life insurance undertakings (and 1 life and non-life undertaking) authorised at both 31 December 2016 and at 31 December 2017⁴. Our analysis of the Irish life insurance market includes direct writers only, we have not included any reinsurers in this analysis. Appendix 1 contains a list of all Irish life companies included in our analysis.

Analysis of Premiums

Our analysis of gross written premiums shows that unit-linked business represents 86% of life insurance premiums written in the Irish market in 2017. This is largely unchanged from 2016. Unit-linked business has dominated the Irish market for a number of years now, with pure protection business making up a much smaller portion of total premium volumes.

FIGURE 1: SPLIT OF 2017 GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS



The remaining premiums include other life insurance (8%) (traditional protection and annuity business) and insurance with profit participation (4%). There are some health insurance premiums (2%) and a very small amount of reinsurance premiums (<1%) written by direct writers.

In 2016 the split of gross written premiums by line of business was almost identical to 2017. The total volume of gross written premiums increased by 8% in 2017 to €39.8 billion from approximately €36.8 billion in 2016.

The ten Irish life insurers with the highest total written premiums (gross of reinsurance) in 2017 are shown below along with a comparison to the 2016 figure. These figures are those provided in the QRT S.05.01 and gross written premiums are defined as all amounts due during the financial year in respect of insurance contracts. Therefore it represents premium income during the year (and not new business premiums) including recurring premiums on regular premium business.

² The 2016 figures shown differ slightly to the figures shown in our previous 2016 report due to the inclusion of more insurers' SFCRs in this report. In our 2016 report we used a sample of 27 life insurance companies.

³ <https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/solvency-ii/supervisory-disclosures>

⁴ The CBI aggregate statistical data at 31 December 2017 has 44 life companies, 1 life and non-life, 92 non-life companies and 60 reinsurance companies. The CBI report on QRTs for year ends in 2017 has 45 life companies, 89 non-life companies and 57 reinsurance companies.

TABLE 1: TOP 10 GROSS WRITTEN PREMIUMS

Total Gross Written Premiums (€ million)	2017	2016
Intesa SanPaolo Life dac	7,941	8,986
Irish Life Assurance Plc	7,268	5,199
Zurich Life Assurance plc	3,233	2,684
Darta Saving Life Assurance dac	3,075	2,590
New Ireland Assurance Company plc	1,792	1,671
AXA MPS Financial DAC	1,642	1,310
AZ Life dac	1,526	3,533
Metlife Europe d.a.c.	1,486	1,887
Utmost PanEurope dac	1,449	1,226
Allianz Global Life DAC	1,359	105

At year end 2016 there was some confusion in the Irish industry regarding the definition of premiums and some companies report on the basis of the IFRS definition of premiums⁵. This may be the reason for much lower premium amounts in 2016 for some companies such as Allianz Global Life in the table above.

Total expenses incurred during the year is also available from the QRTs. The total expenses incurred in 2017 for the ten Irish life insurers with the highest gross written premiums in 2017 is shown below.

TABLE 2: EXPENSES

2017 (€ million)	Total Gross Written Premiums	Total Expenses
Intesa SanPaolo Life dac	7,941	394
Irish Life Assurance Plc	7,268	390
Zurich Life Assurance plc	3,233	269
Darta Saving Life Assurance dac	3,075	223
New Ireland Assurance Company plc	1,792	202
AXA MPS Financial DAC	1,642	101
AZ Life dac	1,526	11
Metlife Europe d.a.c.	1,486	465
Utmost PanEurope dac	1,449	42
Allianz Global Life DAC	1,359	37

We note that the definition of expenses may differ between companies. In particular items such as Third Party Administrator fees, commissions, and investment management expenses may or may not be included and may have a significant impact.

⁵ Under IFRS 17 written premiums includes only premiums written on insurance classified contracts. Many Irish life insurance policies are defined as investment contracts and therefore would be investment classified contracts and therefore excluded from IFRS written premiums.

DOMESTIC BUSINESS

Within the Irish insurance industry, there are a significant number of companies selling cross-border life insurance, generally into the EU on a Freedom of Services or Freedom of Establishment basis. Of the €39.8 billion gross written premiums in 2017 we estimate €12.8 billion were written in the “home country” (i.e. Ireland). We estimate €10.3 billion of domestic Irish gross written premiums in 2016. This is a significant increase driven mainly by Irish Life Assurance plc which had an increase in gross written premium from €5.2 billion in 2016 to €7.3 billion in 2017. The five Irish life insurers with the highest written premiums (gross of reinsurance) in the domestic Irish market in 2017 are shown below along with a comparison to the 2016 figure.

TABLE 3: TOP 5 GROSS WRITTEN PREMIUMS IN HOME COUNTRY

Ireland Gross Written Premiums (€ million)	2017	2016
Irish Life Assurance plc	7,268	5,199
Zurich Life Assurance plc	2,620	2,027
New Ireland Assurance Company plc	1,792	1,672
Friends First Life Assurance Company dac	744	1,083 ⁶
Acorn Life DAC	107	123

As can be seen the Irish domestic market is heavily dominated by Irish Life Assurance. Zurich Life, New Ireland and Friends First are the other material players.

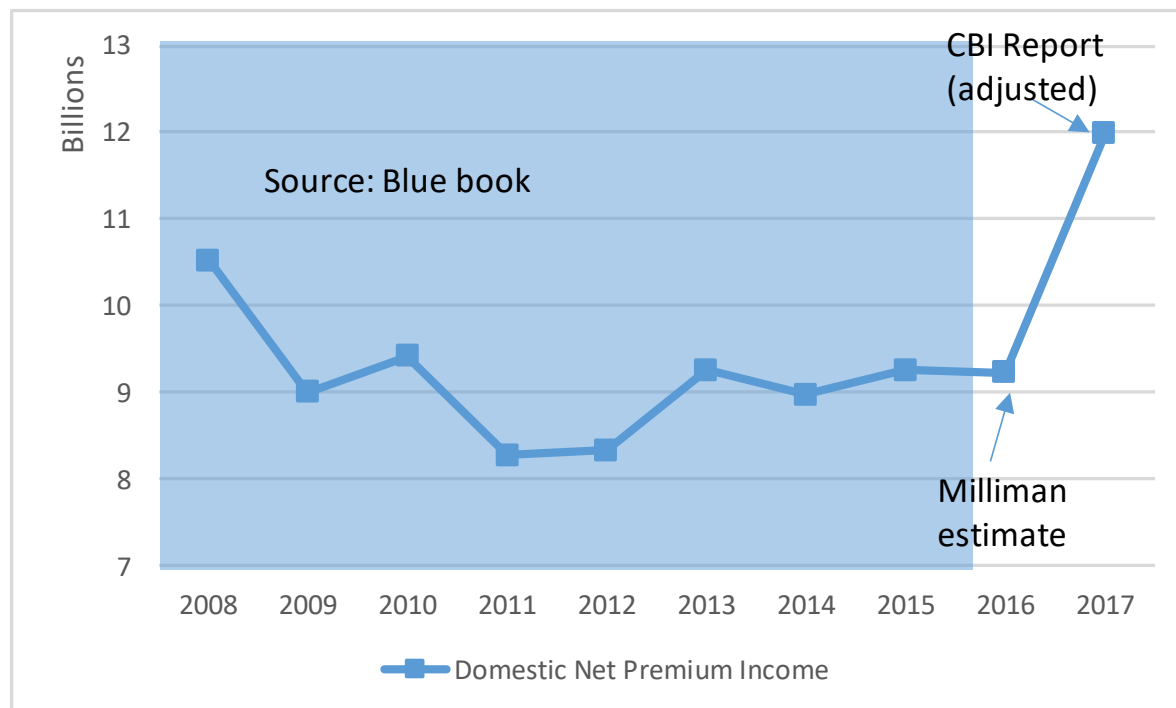
Note Aviva is not included in these figures as it sells in Ireland via a Branch of its UK company (and therefore its premium figures are not included in the Irish CBI QRTs and published SFCRs). Insurers show a split of gross written premiums between their top 5 countries in the QRT S.05.02 (Premiums, claims and expenses by country). The SFCR for Aviva Life & Pensions UK Limited at year-end 2017 shows gross written premium in Ireland of €961 million, which would put it between New Ireland and Friends First in the table above. AVIVA completed its acquisition of Friends First in Ireland in June 2018 and also announced its intention to establish a head office in Ireland for its life and non-life business in Ireland and the EU as part of its Brexit planning. Standard Life Assurance and Royal London also write business in Ireland via a branch. Royal London has also announced it is opening a subsidiary in Ireland and Standard Life is planning to use its existing Irish subsidiary to write business in Ireland and the EU.

Note that of the top 5 life insurance companies selling in Ireland only Zurich Life Assurance has gross written premiums in countries other than Ireland as shown in the QRT S.05.02.

⁶ 2016 figure for Friends First includes Friends First Managed Pension Funds dac. This business was transferred into Friends First Life Assurance Company dac during 2017.

Prior to 2016, the CBI produced a “Blue Book” of statistical information on insurers in Ireland. This included new business premiums and premium income information. From 2016 new business premiums are not available in Solvency II public QRTs. Up to 2016 premium income is only available in the Blue Book net of reinsurance. A comparison of the net premium income from the Blue Book and net written premiums from our 2016 sample estimate and the 2017 CBI figures for domestic business (with some adjustments as explained below) is shown in the graph below⁷.

FIGURE 2: NET PREMIUM INCOME FOR DOMESTIC IRISH BUSINESS



Similar to gross written premiums, the domestic net premium income shows a significant increase between 2016 and 2017. Again this is largely driven by Irish Life Assurance whose net premium income increased from €4.9 billion in 2016 to €7.1 billion in 2017. As noted above, the 2016 figure is an estimate based on our sample companies. It may also be lower due to some companies reporting the IFRS definition of written premiums as mentioned under Table 1 above.

The 2017 figure is based on the CBI report, however the QRT S.05.02 (Premiums, claims and expenses by country) is not populated by all insurers. We have therefore supplemented the CBI figures with figures from the QRT S.05.01 (Premiums, claims and expenses by line of business) for insurers that did not populate the QRT S.05.02 (as they only sell in one country). There are also some insurers with premiums allocated to home country that do not sell in Ireland. We have therefore removed these from the CBI home country figures.

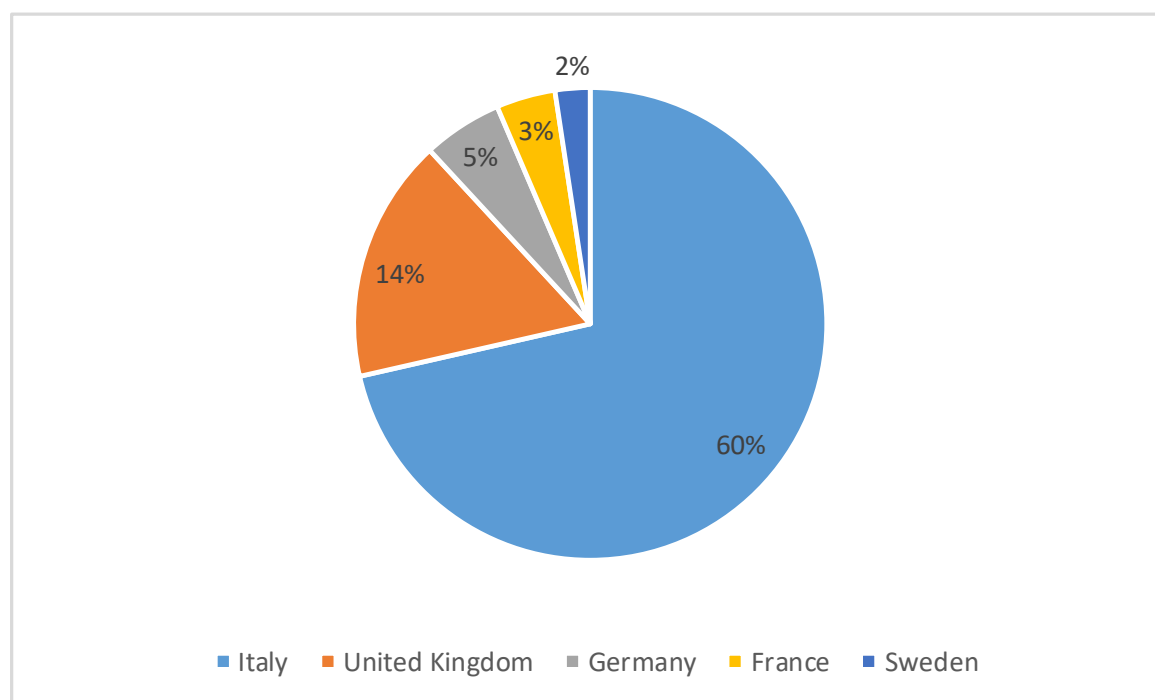
⁷ Note gross to net of reinsurance premiums can be volatile from year to year as this includes some 100% reinsurance of single premiums relating to with-profits business in some companies.

CROSS BORDER BUSINESS

Insurers show a split of gross written premiums between their top 5 countries in the QRT S.05.02. The top 5 countries shown by cross border life insurance companies at year-end 2017 account for €26.5 billion of the 2017 gross written premiums of €39.8 billion. (After removing our estimated €12.7 billion in Ireland this leaves just €0.5 billion in other countries that don't make the top 5.)

The split by country of Irish life insurers' top 5 countries excluding Ireland in the QRT S.05.02 in 2017 is shown in the graph below.

FIGURE 3: 2017 PROPORTION OF IRISH LIFE INSURERS' TOP 5 CROSS-BORDER GROSS WRITTEN PREMIUMS BY COUNTRY



The largest cross-border market for Irish life insurers is Italy, which accounts for 60% of the top 5 countries cross-border gross written premiums in 2017. The five Irish life insurers with the highest written premiums (gross of reinsurance) in Italy in 2017 are shown below along with a comparison to the 2016 figures.

TABLE 4: TOP 5 GROSS WRITTEN PREMIUMS IN ITALY

Italy Gross Written Premiums (€ million)	2017	2016
Intesa SanPaolo Life dac	7,941	8,986
Darta Saving Life Assurance dac	3,075	2,590
AXA MPS Financial Limited	1,641	1,310
AZ Life	1,526	3,533
Utmost PanEurope dac	953	819

Note that of the top 5 life insurance companies writing business in Italy, only Utmost PanEurope has any material gross written premiums in countries other than Italy, as shown in the QRT S.05.02. (Darta shows a small amount in Lithuania in its QRT S.05.02.)

The United Kingdom is the second most popular destination for gross written premiums. The five Irish life insurers with the highest written premiums (gross of reinsurance) in the UK in 2017 are shown below.

TABLE 5: TOP 5 GROSS WRITTEN PREMIUMS IN UK

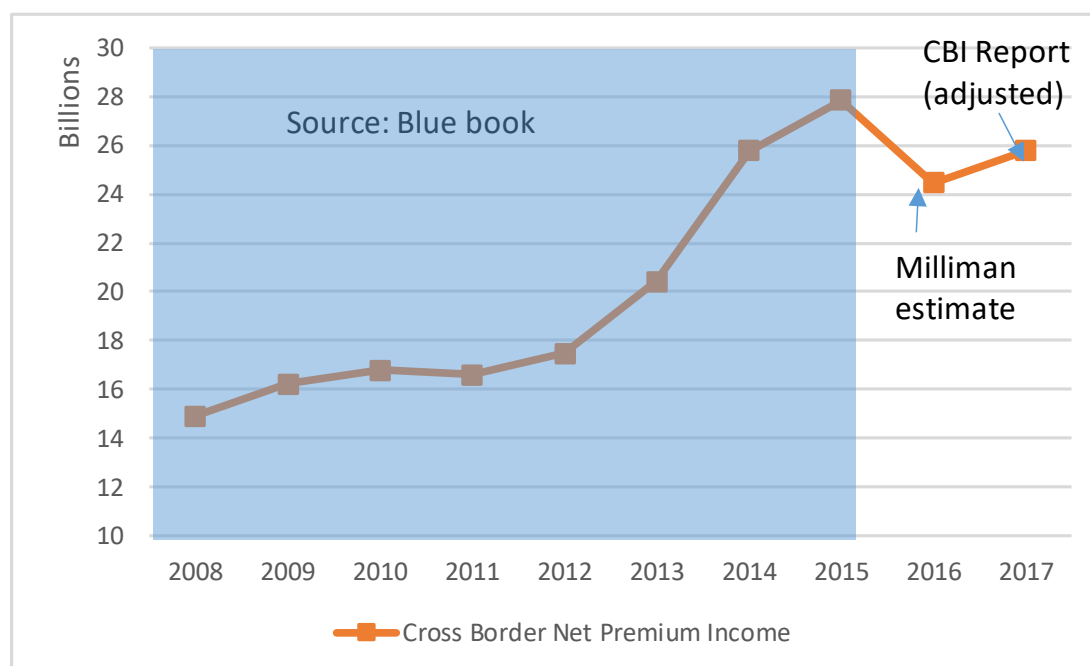
UK Gross Written Premiums (€ million) ⁸	2017	2016
Standard Life International Limited	844	775
Prudential International Assurance	762	814
Canada Life International Assurance Ireland	715	469
MetLife Europe d.a.c. ⁹	601	1,031
St James's Place International plc	539	27

As noted in relation to Table 1 above, at year end 2016 there was some confusion in the Irish industry regarding the definition of premiums and some companies reported on the basis of the IFRS definition of premiums. This may be the reason for much lower premium amounts in 2016 for some companies such as St James's Place International in the table above.

Note that of the top 5 life insurance companies writing business in the UK, Prudential International Assurance and MetLife Europe have gross written premiums in countries other than the UK, as shown in their QRT S.05.02 (Canada Life International has a very small amount in Italy).

A comparison of the net premium income from the Blue Book prior to 2016, net written premiums from our 2016 sample estimate and the 2017 CBI figures for cross border business is shown in the graph below.

FIGURE 4: NET PREMIUM INCOME FOR CROSS BORDER BUSINESS



As noted for domestic business above, the 2016 figure is an estimate based on our sample companies. The 2017 figure is based on the CBI report with some adjustments. There seems to have been a fall in cross border net written premiums between 2015 and 2016 but this may be due to differences between figures reported in the Blue Book and those reported in the QRTs. It may also be due to some companies reporting IFRS written premium figures in 2016 as mentioned above.

⁸ Where the undertaking's reporting currency is not euro, figures are taken from the CBI report which are converted from reporting currency using exchange rates as published by the European Central Bank.

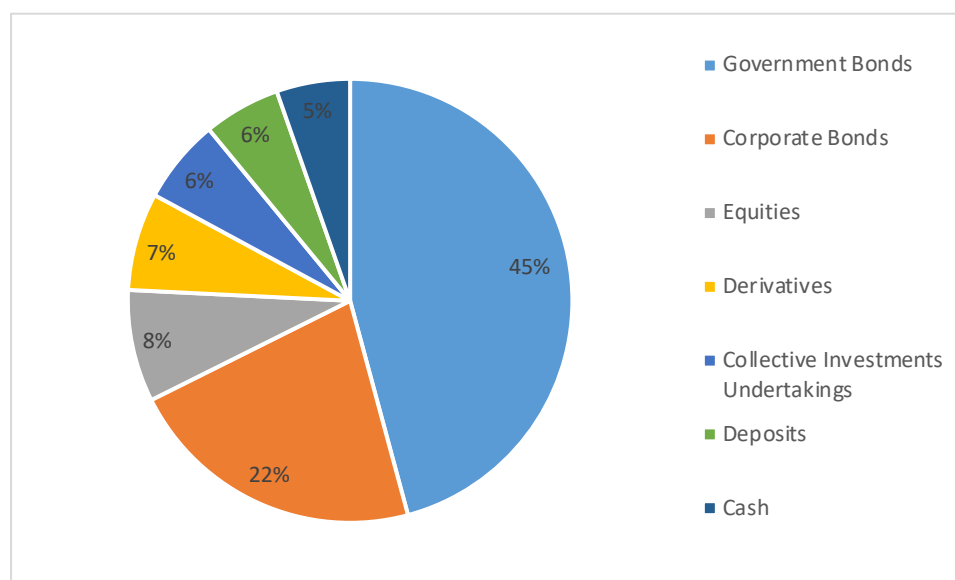
⁹ MetLife closed its UK wealth management business to new business during 2017.

Analysis of Investments

The assets side of the balance sheets for the Irish life companies are primarily composed of financial investments. Total balance sheet assets for 2017 in the CBI report are €260.5 billion. Most of these relate to assets held for index-linked and unit-linked contracts (€216.7 billion). There are €30.6 billion in financial investments and €9.9 billion in reinsurance recoverables.

The breakdown of the financial investments of €30.6 billion for the Irish life insurance market is as follows.

FIGURE 5: SPLIT OF FINANCIAL INVESTMENTS BY ASSET CLASS



The majority of Irish life insurers are heavily invested in bonds, with 45% of total investments in government bonds and 22% of investments in corporate bonds. This is largely unchanged from 2016.

The remainder of investments are split between equity (8%), derivatives (7%), collective investments undertakings (6%), deposits (6%) and cash (5%).

Analysis of Solvency Coverage

SOLVENCY COVERAGE RATIOS

The total SCR coverage ratio for Irish life insurers was 179%¹⁰ as at year-end 2017 based on figures reported in the public QRTs. This is significantly in excess of the required 100% coverage level, indicating that Irish life insurers were in a very healthy solvency position at year-end 2017. We estimate the SCR coverage rate at year-end 2016 to have been 190%. The European Insurance Overview 2018 (Year-end 2017) produced by EIOPA¹¹ for all insurers covering 31 countries indicates that at an aggregated EEA level the European SCR coverage ratio was 220% at year-end 2017.

The distribution of the SCR coverage ratio for Irish life insurers is shown in the box and whisker chart below.

FIGURE 6: DISTRIBUTION OF SCR COVERAGE RATIOS

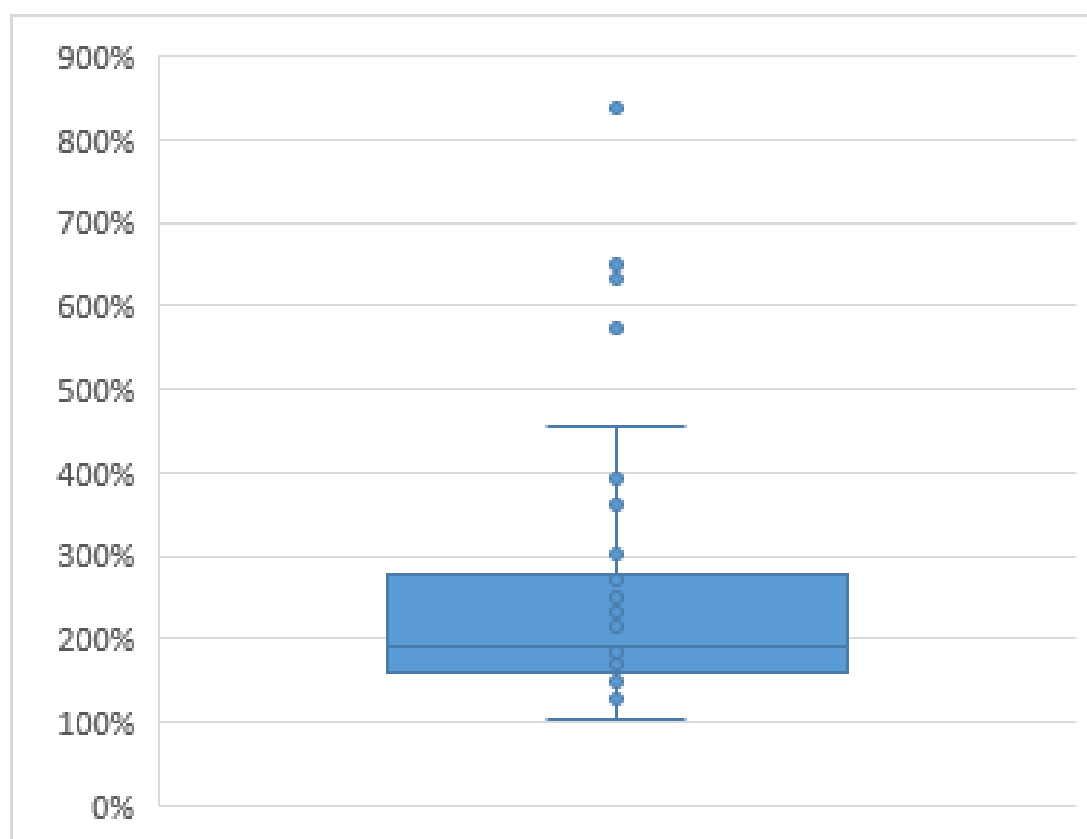


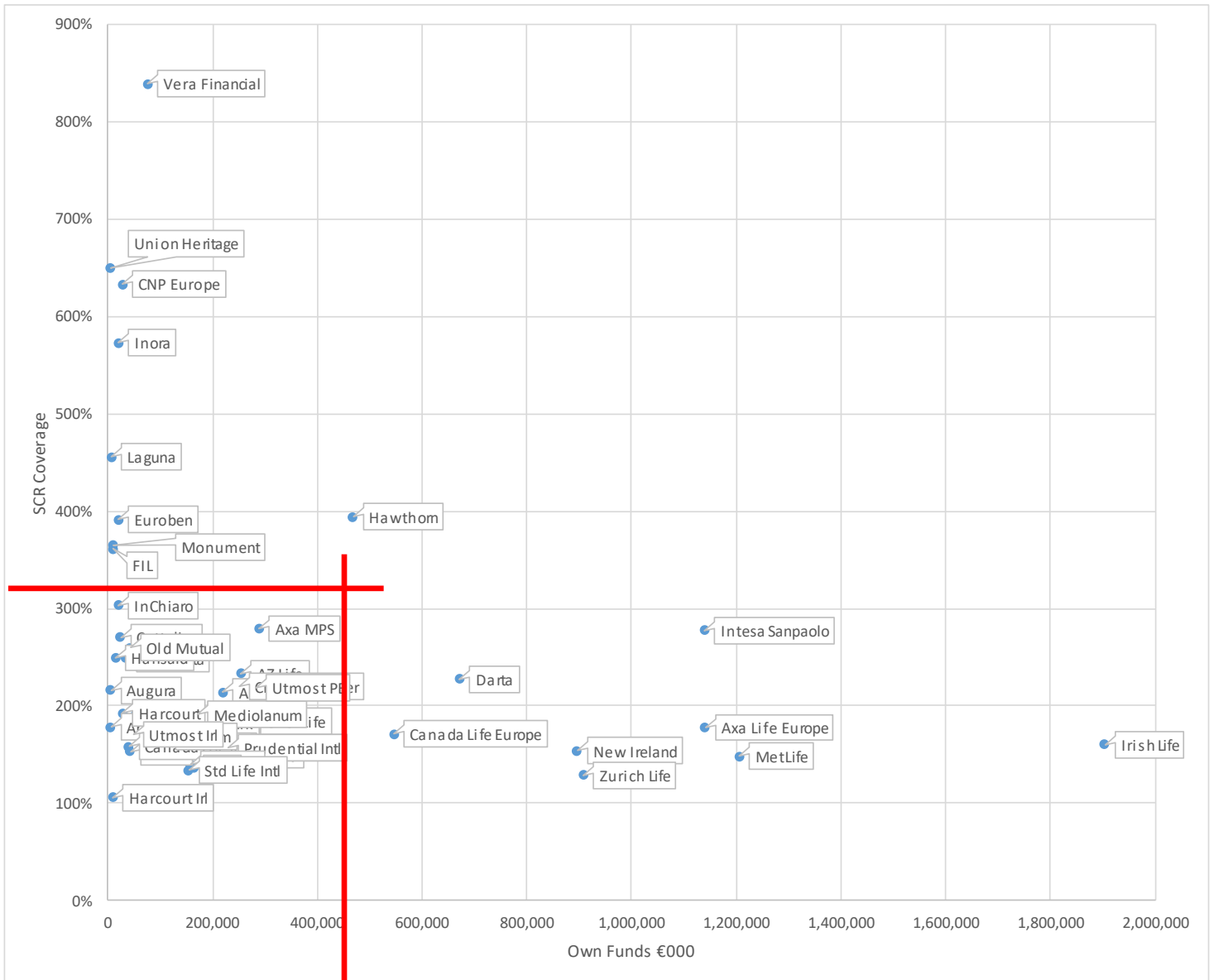
Figure 6 above shows that the solvency coverage of Irish life insurers has a wide distribution, with SCR coverage ratios ranging from 106% to 839% for companies. The distribution of coverage ratios is heavily concentrated around the median of 193% (shown by the horizontal blue line in the chart), with 50% of companies having a coverage ratio between 158% and 278% (shown by the blue box in the chart).

The graph below shows the individual solvency coverage ratios by company. The horizontal axis shows the corresponding own funds by company.

¹⁰ Taking total Eligible Own Funds and dividing it by the SCR

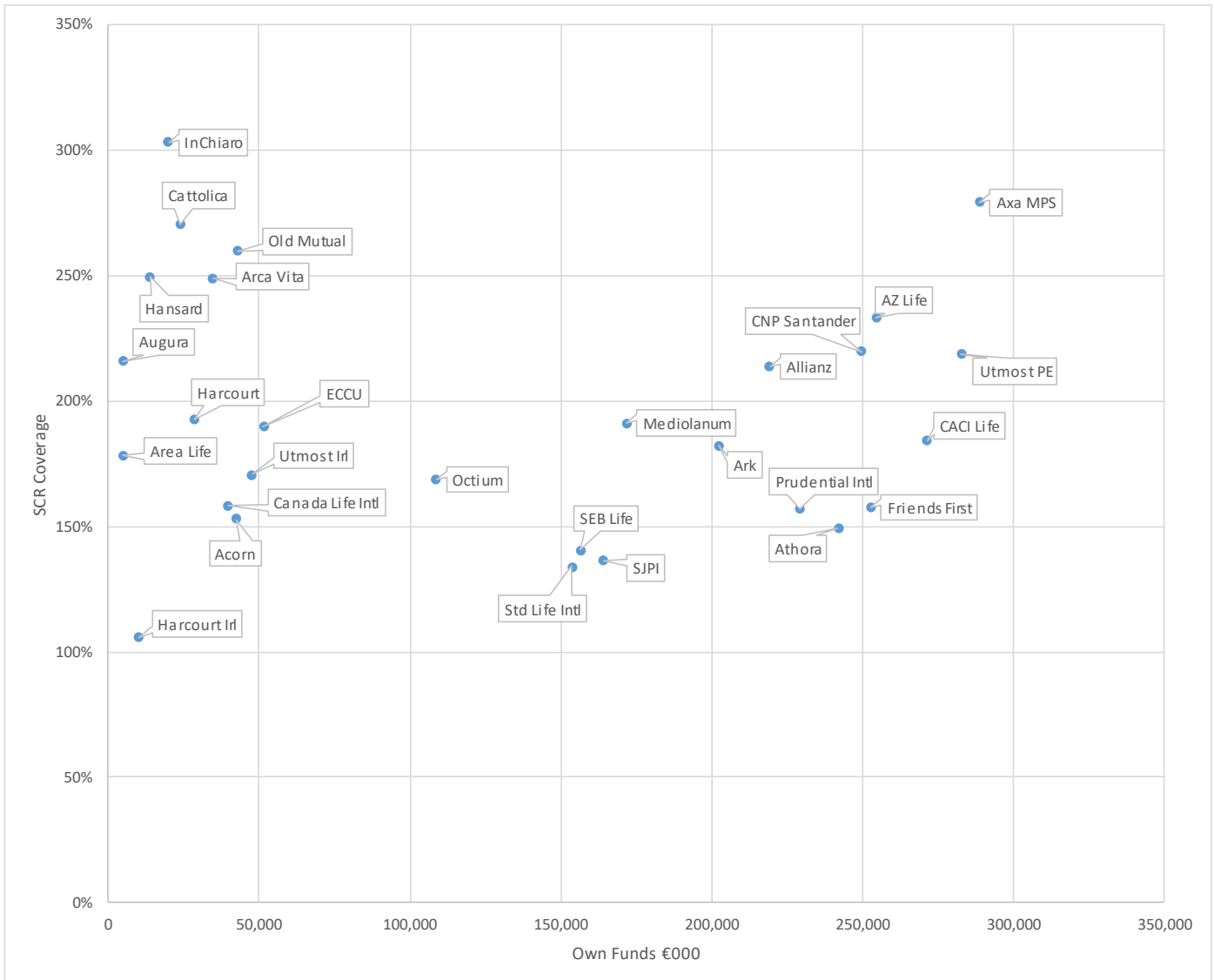
¹¹ https://eiopa.europa.eu/Publications/Insurance%20Statistics/SA_EIO.pdf

FIGURE 7: 2017 DISTRIBUTION OF SOLVENCY COVERAGE RATIOS



Magnifying the lower left quadrant makes the remaining cluster of companies clearer as shown in the next chart.

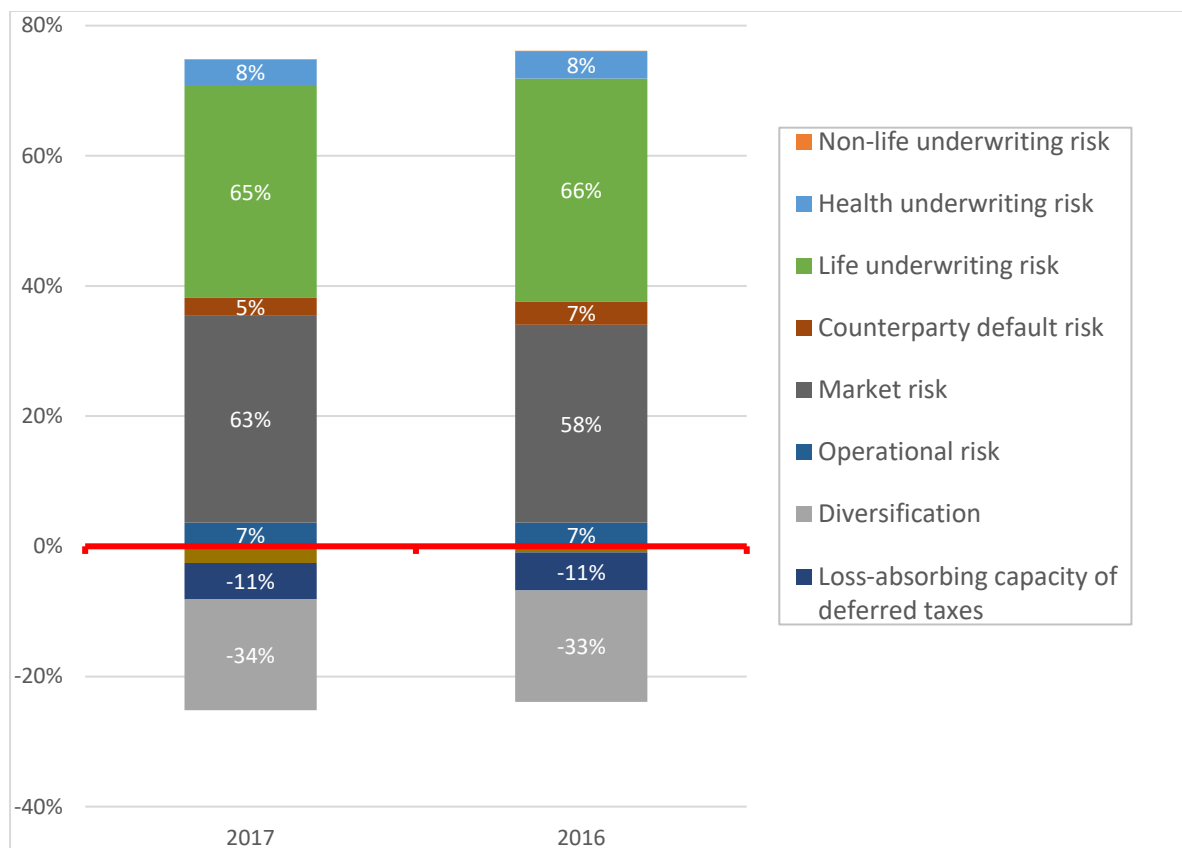
FIGURE 8: 2017 DISTRIBUTION OF SOLVENCY COVERAGE RATIOS – LOWER LEFT QUADRANT ONLY



SCR - STANDARD FORMULA COMPANIES

We analysed the various SCR components of standard formula companies in order to calculate the total contribution to the SCR for each sub module. The results of this analysis are shown below:

FIGURE 9: BREAKDOWN OF SCR



In the graph above, everything above the red line represents a capital charge such as life underwriting risk, market risk, operational risk etc. Everything below the line represents a reduction to the SCR, for example for diversification benefits or the loss-absorbing capacity of deferred taxes.

The graph above shows that Irish life insurers are mostly exposed to underwriting risks. As expected, the main risk exposure is life underwriting risk making up 65% of the total SCR. Market risk is the second largest risk exposure for Irish life companies, making up 63% of the SCR.

The overall diversification benefits for Irish life companies give a 34% reduction in SCR reflecting a spread of risks between the sub-modules (i.e. between market, counterparty and underwriting risks).

The CBI's Aggregate Statistical Data¹² indicates that there are two Irish companies holding a capital add-on in addition to the calculated SCR at year-end 2017 and the average capital add on is €43.7 million. At year-end 2016 there was one Irish company holding a capital add on with a value of €93.6 million.

SCR - INTERNAL MODEL COMPANIES

At year-end 2017, there was one Irish life insurer with a partial internal model (Prudential International Assurance plc) and three Irish life insurers with a full internal model (Allianz Global Life dac, AXA Life Europe dac and AXA MPS Financial dac)

The overall SCR coverage ratio for companies using partial or full internal models (189%) is broadly in line with the total for standard formula companies (179%). This implies that even though internal model companies are calculating their SCR in a manner that should better reflect the companies individual risk profile, these companies are still choosing to hold a significant capital buffer in excess of the SCR.

¹² <https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/solvency-ii/supervisory-disclosures>

Long-Term Guarantee and Transitional Measures

Under Solvency II, there are a number of measures available to insurers both in terms of transitioning to the new regime and in terms of allowing for the impact of long term guarantees. The measures include the use of the volatility adjustment or the matching adjustment (long term guarantee measures), transitional measures on technical provisions or the risk free interest rate term structure and transitional measures relating to the SCR.

The following Irish life insurers were using the volatility adjustment as at year-end 2017:

- Friends First Life Assurance Company DAC
- Irish Life Assurance Plc
- Utmost Ireland dac

Utmost Ireland is also applying the transitional measure on the equity risk component of the SCR. Utmost Ireland states in its SFCR that it has received permission from the CBI to use the transitional measure on technical provisions from March 2018.

No Irish insurer (or reinsurer) is using the matching adjustment.

One non-life insurance company is using the volatility adjustment (Allianz). Two reinsurance companies are using the volatility adjustment (Allianz Re and Canada Life International Re). Canada Life International Re is also using the transitional measure on the risk free interest rate term structure on its closed book of UK annuity liabilities.

Appendix 1: Irish life insurers included in the analysis

The following table sets out the 45 life insurers included in the CBI report at year end 2017.

Company	Eligible Own Funds €000	SCR €000	SCR coverage ratio
Acorn Life DAC	42,323	27,651	153%
Allianz Global Life Designated Activity Company	219,270	102,561	214%
Arca Vita International dac	34,588	13,895	249%
Area Life International Assurance DAC	4,905	2,749	178%
Ark Life Assurance Company dac	202,378	111,053	182%
Athora Ireland Plc	241,975	162,038	149%
Augura Ireland dac	4,894	2,265	216%
AXA Life Europe Designated Activity Company	1,140,262	640,865	178%
AXA MPS Financial DAC	288,970	103,461	279%
AZ Life dac	254,447	109,018	233%
CACI Life dac	271,350	147,303	184%
Canada Life Assurance Europe PLC	545,537	318,445	171%
Canada Life International Assurance (Ireland) DAC	39,591	25,015	158%
Cattolica Life dac	23,837	8,812	271%
CNP Europe Life dac	27,284	4,310	633%
CNP Santander Insurance Life DAC	249,715	113,642	220%
Darta Saving Life Assurance dac	671,419	295,404	227%
ECCU Assurance dac	51,501	27,106	190%
Euroben Life & Pension Limited	20,091	5,135	391%
FIL Life Insurance (Ireland) dac	9,182	2,540	362%
Friends First Life Assurance Company DAC	252,831	160,410	158%
Hansard Europe DAC	13,655	5,477	249%
Harcourt Life Corporation Dac	28,500	14,793	193%
Harcourt Life Ireland dac	9,824	9,300	106%
Hawthorn Life Designated Activity Company	467,544	118,666	394%
InChiaro Life dac	19,811	6,534	303%
Inora Life dac	20,598	3,594	573%
Intesa SanPaolo Life dac	1,139,081	410,241	278%
Irish Life Assurance Plc	1,903,274	1,188,964	160%
Laguna Life dac	6,332	1,389	456%
Mediolanum International Life dac	171,824	89,860	191%
Metlife Europe d.a.c.	1,205,096	812,529	148%
Monument Assurance dac	10,858	2,974	365%
New Ireland Assurance Company plc	896,096	582,679	154%
Octium Life dac	108,646	64,398	169%
Old Mutual International Ireland dac	42,728	16,436	260%
Prudential International Assurance plc	229,256	145,968	157%
Seb Life International Assurance Company DAC	156,405	111,563	140%
St James's Place International plc	164,109	120,302	136%
Standard Life International DAC	153,724	114,787	134%
Union Heritage DAC	5,179	797	650%
Utmost Ireland dac	47,580	27,878	171%
Utmost PanEurope dac	282,737	129,246	219%
Vera Financial dac	75,135	8,954	839%
Zurich Life Assurance plc	907,872	704,841	129%

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The list of companies included in our 2016 comparison figures is shown below.

Company	
Acorn Life Designated Activity Company	Harcourt Life Assurance DAC
Aegon Ireland	Hawthorn Life Limited
Allianz Global Life DAC	Inora Life Dac
Arca Vita International DAC	Intesa Sanpaolo Life D.A.C.
Ark Life Assurance Company Ltd	Irish Life Assurance plc
Augura Life Ireland DAC	Laguna Life Limited
AXA MPS Financial Limited	Mediolanum International Life Dac
AZ Life dac	MetLife Europe d.a.c.
Barclays Assurance (Dublin) DAC	New Ireland Assurance Company plc
CACI Life Limited	Old Mutual International Ireland Limited
Canada Life Assurance Europe	Prudential International Assurance
Canada Life International Assurance Ireland	Seb Life International Assurance Company Limited
Cattolica Life dac	St James's Place International plc
CNP Santander Insurance Life dac	Standard Life International Limited
Darta Saving Life Assurance dac	UBS International Life DAC
ECCU Assurance DAC	Utmost Ireland dac
Friends First Life Assurance Company dac	Vera Financial dac
Friends First Managed Pension Funds dac	Zurich Life Assurance plc
Generali PanEurope dac	

Note that the following companies changed name between 2016 and 2017:

- Aegon Ireland changed to Athora Ireland Plc
- Barclays Assurance (Dublin) DAC changed to Monument Assurance dac
- Generali PanEurope dac changed to Utmost PanEurope dac



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CONTACT

Aisling Barrett
aisling.barrett@milliman.com
+353 (0)1 647 5511

Sinead Clarke
sinead.clarke@milliman.com
+353 (0)1 647 5512

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