

Report on the 2012 MFSA Standard Formula Exercise for Solvency II

Malta Financial Services Authority
April 2013

Table of Contents

1.	Introduction	1
1.1	Purpose of this document	1
1.2	Objective of the exercise.....	1
1.3	Reference dates used.....	1
1.4	Participation	2
2.	Overall Financial Impact.....	3
2.1	Overall Financial Surplus	3
2.2	SCR Coverage	5
2.3	MCR Coverage.....	6
2.4	The quantitative impact on the overall financial position	7
3.	Valuation of assets and liabilities.....	8
3.1	Impact of valuation change on assets.....	8
3.2	Impact of valuation change on Liabilities.....	10
3.3	Impact of valuation change on Basic Own Funds (BOFs)	11
4.	The Solvency Capital Requirement (SCR) based on the Standard formula.....	12
4.1	Life Insurance Undertakings.....	14
4.2	Non-Life Insurance Undertakings (excluding captives and PCCs)	17
4.3	Captives	20
4.4	Composites.....	23
4.5	Pure Reinsurance Undertakings (excluding captives)	26
4.6	PCCs.....	29
5.	Own Funds	31
5.1	Composition of Own Funds.....	31
5.2	Breakdown of Basic Own Funds (BOF)	32
6.	Standard Formula Concerns.....	33
7.	Conclusions	36

1. Introduction

1.1 Purpose of this document

This document summarises the standard formula results for the insurance and reinsurance undertakings that participated in the 2012 MFSA standard formula exercise. For this exercise, the MFSA incorporated the proposed changes to the QIS5 Technical Specifications as set out in the working papers issued to Member States and other draft working papers dated 31st October 2011, post the QIS5 exercise.

1.2 Objective of the exercise

On the 10th of August 2012, insurance and reinsurance undertakings authorised in terms of the Insurance Business Act (Cap 403) (hereinafter referred to as “undertakings”) were requested to participate in the 2012 MFSA standard formula exercise to assess their level of preparedness and to help them prepare for the Solvency II Pillar I requirements.

The objectives of the MFSA Standard Formula Worksheet exercise were to:

- provide a tool to undertakings to calculate their capital requirement in terms of the Solvency II Pillar I requirements;
- allow undertakings which had participated in the QIS5 exercise to revise their assessment of the adequacy of their financial resources using an updated methodology;
- provide a user friendly tool to undertakings – the MFSA Standard Formula worksheets which have been provided to the undertakings retained the same format as that used in the QIS 5;
- allow the MFSA to monitor and assess the regulatory capital requirements of the undertakings it regulates, especially those which did not submit a QIS5 submission when this study was launched in 2010; and
- continue the on-going dialogue between the MFSA and undertakings in preparation for the new supervisory system.

The standard formula template calculates the capital requirement and brings together an impression of what the economic balance sheet could look like under Solvency II for each undertaking. It also captures data which shall be used for future analysis.

The focus of the review for the MFSA is to ensure the accuracy and consistency of data used to populate the different tabs within the spreadsheets and the data used to calculate the capital requirements across risk modules. This ensures that, where similarities exist, the same approach is applied by all undertakings. The detailed review conducted will result in a stronger validation of the solvency ratio, a deeper understanding of the risk profile of the undertakings and reduce any inconsistencies in the future.

1.3 Reference dates used

The reference date for this exercise was set as 31st December 2011 with the exception of some undertakings, where the financial reporting year-end did not coincide with the calendar year-end.

For the remainder of this report, please note that where comparisons were made against Solvency I, the reference dates for the Solvency I figures of each undertaking are the same as that used for Solvency II. The QIS5 figures are based on data as at 31 December 2009.

1.4 Participation

The MFSA requested 54 undertakings to participate in the 2012 MFSA standard formula exercise, of which participation was compulsory for 47 undertakings. For the remaining 7 undertakings, the exercise was optional, as these undertakings had submitted an updated submission in 2012 prior to the launch of the exercise.

The participation rate in this exercise was 93%, up from a participation rate of 86% for the QIS5 exercise.

For completeness, following terms are used throughout the report:

- (1) SCR (Solvency Capital Requirement) = the BSCR plus the loss absorbing capacity of technical provisions and deferred taxation plus the solvency capital requirement arising from operational risk.
- (2) MCR (Minimum Capital Requirement) = the minimum level of capital below which the amount of financial resources should not fall.
- (3) Solvency I surplus = the excess of the available solvency margin over the required solvency margin under Solvency I
- (4) Solvency II surplus = the excess of the eligible capital over the SCR or MCR whichever is greater under Solvency II.
- (5) In the diagrams presented in the following sections, CAT refers to catastrophe.

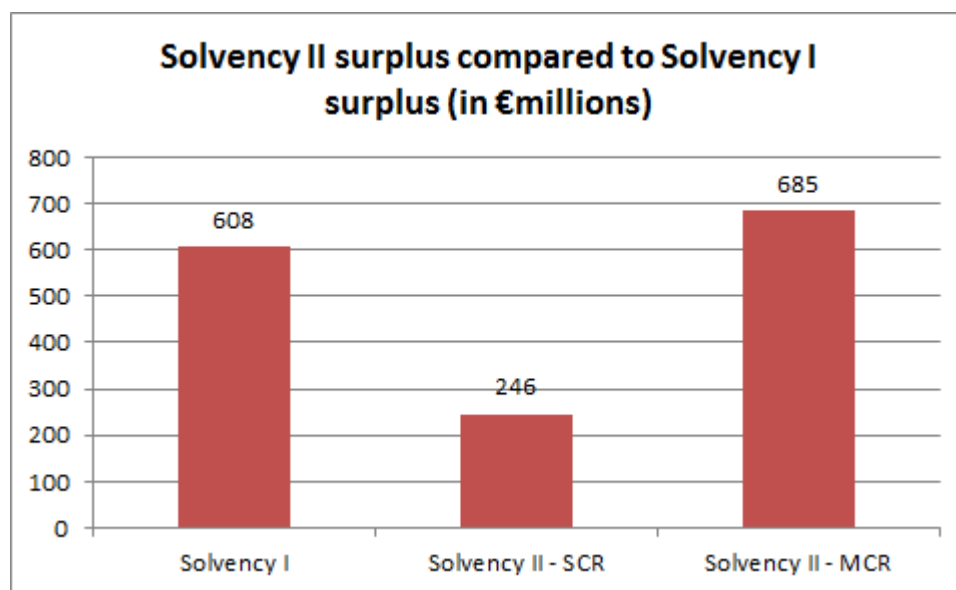
2. Overall Financial Impact

2.1 Overall Financial Surplus

The overall Solvency II surplus over the SCR amounted to €246m, lower by 60% when compared to the €608m reported under the Solvency I regime. The Solvency II surplus over the MCR amounted to €685m, almost three times the surplus over the SCR.

The Solvency II surplus over the SCR has reduced by 35% when compared to the corresponding QIS5 exercise surplus of €380m. The deterioration in the surplus observed in the recent exercise is due to a combination of the following factors:

- (1) Changes in the requirements being proposed in the current draft working papers
- (2) The onerousness of the capital requirements
- (3) The risk profiles of undertakings
- (4) Errors found in the computation of the solvency capital requirements



The main results on the solvency of the overall insurance market are summarised in the table below. This provides a high-level comparison of the results between Solvency I and Solvency II.

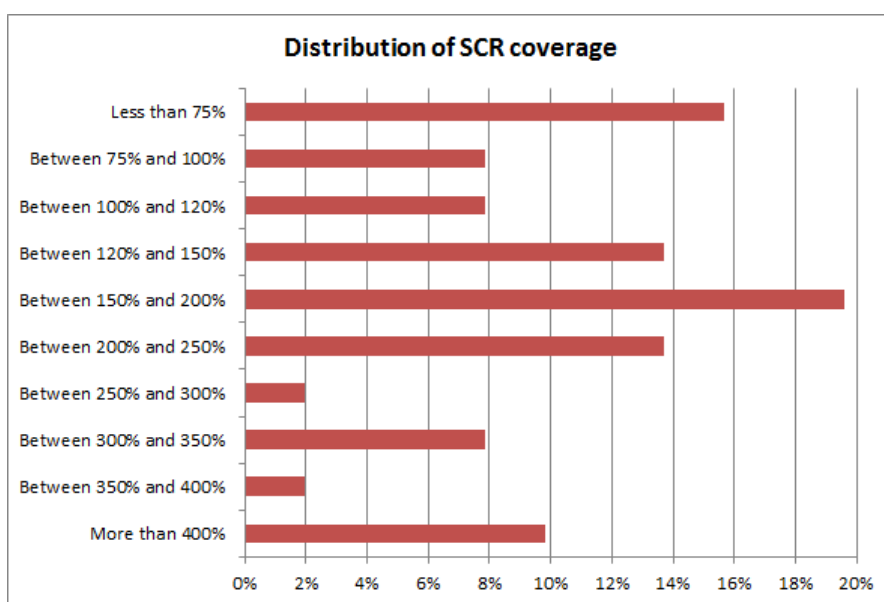
		€m
Solvency I		Available Solvency Margin
		Required Solvency Margin
		Surplus
		Solvency ratio
Solvency II QIS5	SCR	Eligible Capital
		Capital Requirement
		Surplus
		Solvency ratio
	MCR	Eligible Capital
		Capital Requirement
		Surplus
		Solvency ratio
Solvency II 2012 MFS Standard Formula	SCR	Eligible Capital
		Capital Requirement
		Surplus
		Solvency ratio
	MCR	Eligible Capital
		Capital Requirement
		Surplus
		Solvency ratio

2.2 SCR Coverage

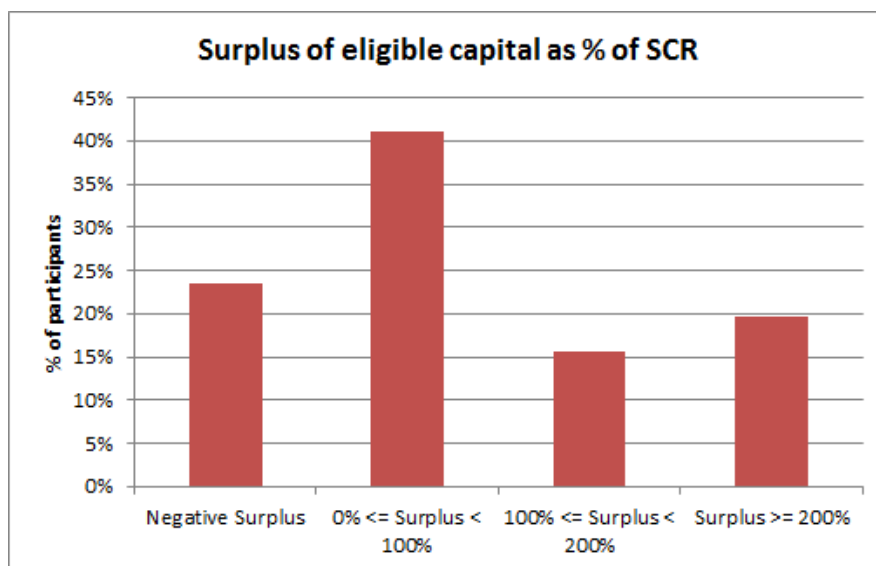
A comparison of the solvency ratio under Solvency II, as reported by undertakings, between the 2012 MFS standard formula exercise and the QIS5 exercise is provided in the table below:

Solvency ratio band	2012 MFS Standard Formula	QIS5
100% and below	23%	29%
Between 100% and 120%	8%	0%
Between 120% and 150%	14%	13%
Between 150% and 200%	20%	21%
Above 200%	35%	37%

The results show that the number of undertakings that were below the 100% solvency ratio threshold has reduced since the QIS5 exercise, resulting in the increased number of undertakings with a solvency ratio above the 100% threshold.



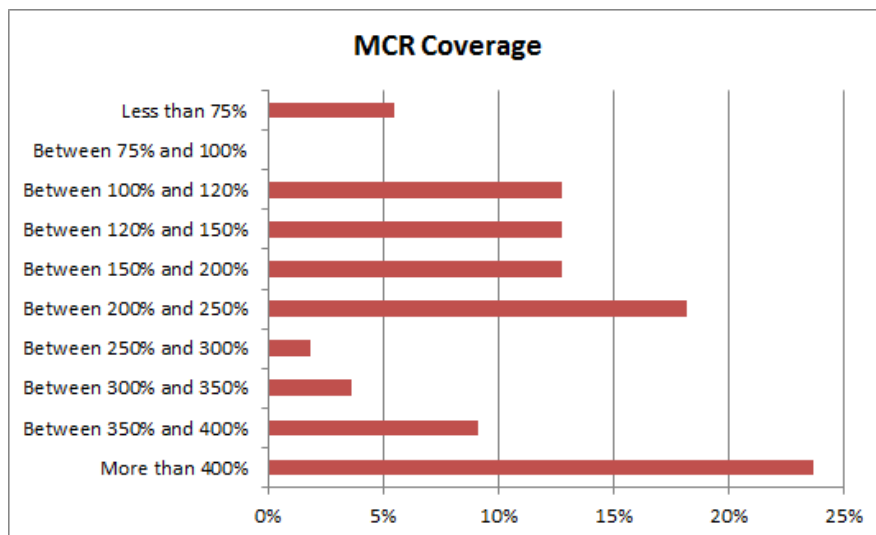
The following diagram shows the surplus of eligible capital as a percentage of the SCR.



2.3 MCR Coverage

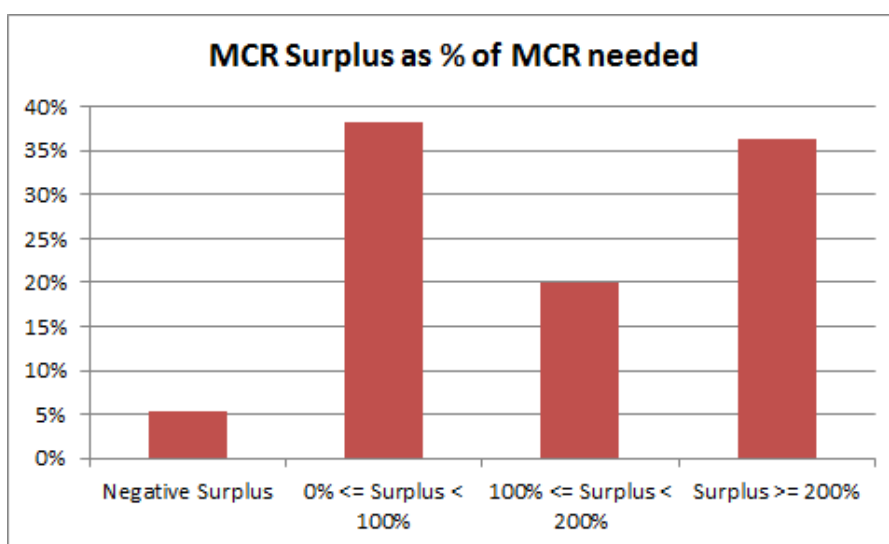
The proportion of undertakings which had insufficient eligible capital to meet their MCR remained unchanged at 5% when compared against the QIS5 exercise. The number of undertakings unable to meet the MCR requirement increased from two to three during the 2012 MFSA standard formula exercise.

The distribution of the participants based on their MCR coverage is illustrated in the diagram hereunder:



The number of undertakings with an MCR coverage ratio under 120%, increased from 16% in the QIS5 exercise to 18% in the recent exercise.

The following diagram shows the distribution of the participants by the MCR surplus as a percentage of the final MCR:



From the diagram above, 56% of the participants have been observed to hold at least 100% of the amount of eligible capital to meet the MCR, compared to 55% observed in the QIS5 exercise.

2.4 The quantitative impact on the overall financial position

The tables below summarise the overall financial position of the insurance market split by nature of business:

Solvency I				
Nature of business	Available Solvency Margin (in €m)	Required Solvency Margin (in €m)	Surplus (in €m)	Solvency cover
Total	902	294	608	307%
Non-Life	296	99	197	299%
Life	114	64	49	177%
Reinsurers	54	18	36	300%
Composites	114	50	64	227%
Captives	292	43	249	685%
PCCs	32	20	13	165%

Solvency II - 2012 MFSa Standard Formula Exercise				
Nature of business	Eligible capital (in €m)	SCR (in €m)	Surplus (in €m)	Solvency ratio
Total	985	738	246	133%
Non-Life	323	238	85	136%
Life	124	56	69	223%
Reinsurers	67	44	23	152%
Composites	167	105	63	160%
Captives	266	276	-10	96%
PCCs	37	20	17	187%

Please note that the figures presented in the table above have been rounded to the nearest million and the percentage change stated in the following paragraphs is based on the actual unrounded values.

As observed from the tables above, the surplus under Solvency II is significantly lower when compared to the surplus under Solvency I (€246m under Solvency II when compared to €608m under Solvency I). This is because the solvency capital required under Solvency II is higher at €738m when compared to €294m under Solvency I. As a result, the solvency ratio under Solvency II is lower at 133% when compared to the 307% under Solvency I for all undertakings.

This significant reduction in the surplus is observed for the non-life and captive undertakings, where the financial surplus has reduced by 57% and 104% respectively with the corresponding increase of 140% and 548% respectively in the required solvency capital.

The solvency position for reinsurers and composites has deteriorated by a lesser extent when compared to the non-life and captive undertakings, where the financial surplus has reduced by 36% and 2% respectively between Solvency I and Solvency II with the corresponding increase of 145% and 108% respectively in the required solvency capital.

On a positive note, the solvency position for the life and PCC undertakings improved under Solvency II, where the financial surplus is higher by 39% and 36% respectively and the solvency ratio is higher by 46% and 22% under Solvency II when compared to the current solvency position.

3. Valuation of assets and liabilities

The change in the valuation principles between Solvency I and the Solvency II did not significantly affect the composition of the balance sheet for the overall insurance market. This was also observed during the QIS5 exercise.

The impact of the valuation changes on the assets, liabilities and basic own funds (BOFs) between Solvency I and Solvency II are discussed under Sections 3.1, 3.2 and 3.3 respectively.

3.1 Impact of valuation change on assets

The table below shows that the total assets for the insurance market varies insignificantly between the two solvency regimes, with a reduction of only 3.9% from €4.1bn under Solvency I to €4.0bn under the Solvency II.

The main reduction in assets is due to *reinsurance recoverables*, with a reduction of around 3.0%; followed by a reduction of 1.8% in the deferred acquisition costs which are no longer recognised as an asset under Solvency II.

Investments (other than assets held for unit-linked funds), Mortgages and loans made, Reinsurance recoverable and Cash and cash equivalents form a significant proportion of the total assets of more than 75% of the total assets under both Solvency I and Solvency II .

The most significant change between the Solvency I and the Solvency II balance sheet has been observed for *Investments (other than assets held for unit-linked funds)*, where the portion of investments increased by 2.5% from Solvency I. This change is mainly due to the revaluation of the assets to be market consistent under Solvency II.

Assets	Solvency I	Solvency II
	% of Total Assets	% of Total Assets
Total assets	€4.1bn	€4.0bn
Goodwill	0.0%	0.0%
Other intangible assets	0.1%	0.0%
Property, plant & equipment held for own use	0.5%	0.6%
Investments (other than assets held for unit-linked funds)	44.1%	46.6%
Property (other than own use)	2.2%	2.3%
Participations	0.7%	1.2%
Equities/other shares (other than participations) - listed	3.0%	3.1%
Equities/other shares (other than participations) - unlisted	0.0%	0.0%
Bonds - Government and multilateral banks	21.4%	22.4%
Bonds - Corporate (asset backed securities)	0.8%	0.9%
Bonds - Corporate (other)	5.0%	5.2%
Structured notes	0.0%	0.0%
Investment funds	7.3%	7.6%
Derivatives	0.0%	0.0%
Futures	0.0%	0.0%
Call Options	0.0%	0.0%
Put Options	0.0%	0.0%
Swaps	0.0%	0.0%
Forwards	0.0%	0.0%
Long term bank deposits	1.4%	1.4%
Other investments	2.3%	2.4%
Assets held for unit-linked funds	5.5%	5.7%
Cash deposits to cedants	0.7%	0.5%
Mortgages and loans made	12.2%	12.7%
Uncollateralized loans made	11.9%	12.4%
Collateralized loans made (other than loans on policies)	0.1%	0.1%
Loans on policies	0.3%	0.3%
Reinsurance recoverables	11.0%	8.0%
Reinsurance share of TP - non-life excluding health	8.0%	7.0%
Reinsurance share of TP - health similar to non-life	0.4%	0.2%
Reinsurance share of TP - health similar to life	0.8%	0.6%
Reinsurance share of TP - life excluding health and unit-linked	1.2%	-0.3%
Reinsurance share of TP - life unit-linked	0.0%	0.0%
Other reinsurance recoverables	0.6%	0.4%
SPV recoverables	0.0%	0.0%
Intermediaries recoverables	1.7%	1.8%
Insurance recoverables (excluding Intermediaries)	2.6%	2.9%
Deferred acquisition costs	1.8%	0.0%
Receivables (trade, not insurance)	0.5%	0.4%
Pension benefit surplus	0.0%	0.0%
Deferred tax assets	0.1%	0.7%
Deductible temporary differences	0.0%	0.6%
The carry forward of unused tax losses and unused tax credits	0.1%	0.1%
Cannot be realised in a reasonable time frame	0.0%	0.0%
Cash and cash equivalents	10.5%	11.1%
Short term bank deposits	8.3%	8.6%
Amounts due in respect of called but unpaid capital	0.0%	0.0%
Any other assets, not elsewhere shown	0.3%	0.4%
Total assets	100.0%	100.0%

*Note: The 100.0% shown in the last row of the above table is the sum of the items in bold

3.2 Impact of valuation change on Liabilities

The total liabilities have decreased by around 10.8%, from €3.1bn under Solvency I to €2.9bn under Solvency II. This reduction in the total liabilities between the two solvency regimes has mainly been driven by a reduction of around €0.3bn in the total gross technical provisions, which is the largest liability item. The main reason for the reduction is due to the decrease in the gross technical provisions for the life insurance business of around €0.2bn. This reduction was also observed during the QIS5 exercise.

The table below shows that the gross technical provisions constitute more than 80.0% of the total value of liabilities under Solvency I and Solvency II.

Liabilities	Solvency I	Solvency II
	% of Total Liabilities	% of Total Liabilities
Total Liabilities	€3.1bn	€2.9bn
Gross technical provisions – non-life (excluding health)	28.6%	28.9%
<i>TP calculated as a whole (Best estimate + Risk margin)</i>	28.6%	0.0%
<i>Best Estimate</i>	0.0%	25.6%
<i>Risk margin</i>	0.0%	3.3%
Gross technical provisions - health (similar to non-life)	1.2%	1.1%
<i>TP calculated as a whole (Best estimate + Risk margin)</i>	1.2%	0.0%
<i>Best Estimate</i>	0.0%	0.9%
<i>Risk margin</i>	0.0%	0.3%
Gross technical provisions - health (similar to life)	2.0%	1.4%
<i>TP calculated as a whole (Best estimate + Risk margin)</i>	2.0%	0.0%
<i>Best Estimate</i>	0.0%	1.3%
<i>Risk margin</i>	0.0%	0.1%
Gross technical provisions – life (excl health and unit-linked)	45.3%	42.5%
<i>TP calculated as a whole (Best estimate + Risk margin)</i>	45.3%	0.0%
<i>Best Estimate</i>	0.0%	42.0%
<i>Risk margin</i>	0.0%	0.5%
Gross technical provisions – unit-linked funds	7.3%	7.6%
<i>TP calculated as a whole (Best estimate + Risk margin)</i>	7.3%	3.1%
<i>Best Estimate</i>	0.0%	4.4%
<i>Risk margin</i>	0.0%	0.1%
Total Gross technical provisions	84.4%	81.5%
Cash deposits from reinsurers	0.0%	0.0%
(Re)insurance accounts payable	4.9%	4.5%
Derivatives	0.2%	0.2%
Deferred tax liabilities	0.2%	2.4%
Provisions other than technical provisions	5.0%	5.5%
Amounts owed to credit institutions	0.0%	0.0%
Financial liabilities other than amounts owed to credit institutions	0.8%	0.9%
Payables (trade, not insurance)	1.5%	1.7%
Pension benefit obligations	0.0%	0.0%
Uncalled investments	0.0%	0.0%
Contingent liabilities	0.0%	0.0%
Any other liabilities (excluding subordinated liabilities), not elsewhere shown	3.0%	3.3%
Total liabilities	100.0%	100.0%

*Note: The 100.0% shown in the last row of the above table is the sum of the items in bold

3.3 Impact of valuation change on Basic Own Funds (BOFs)

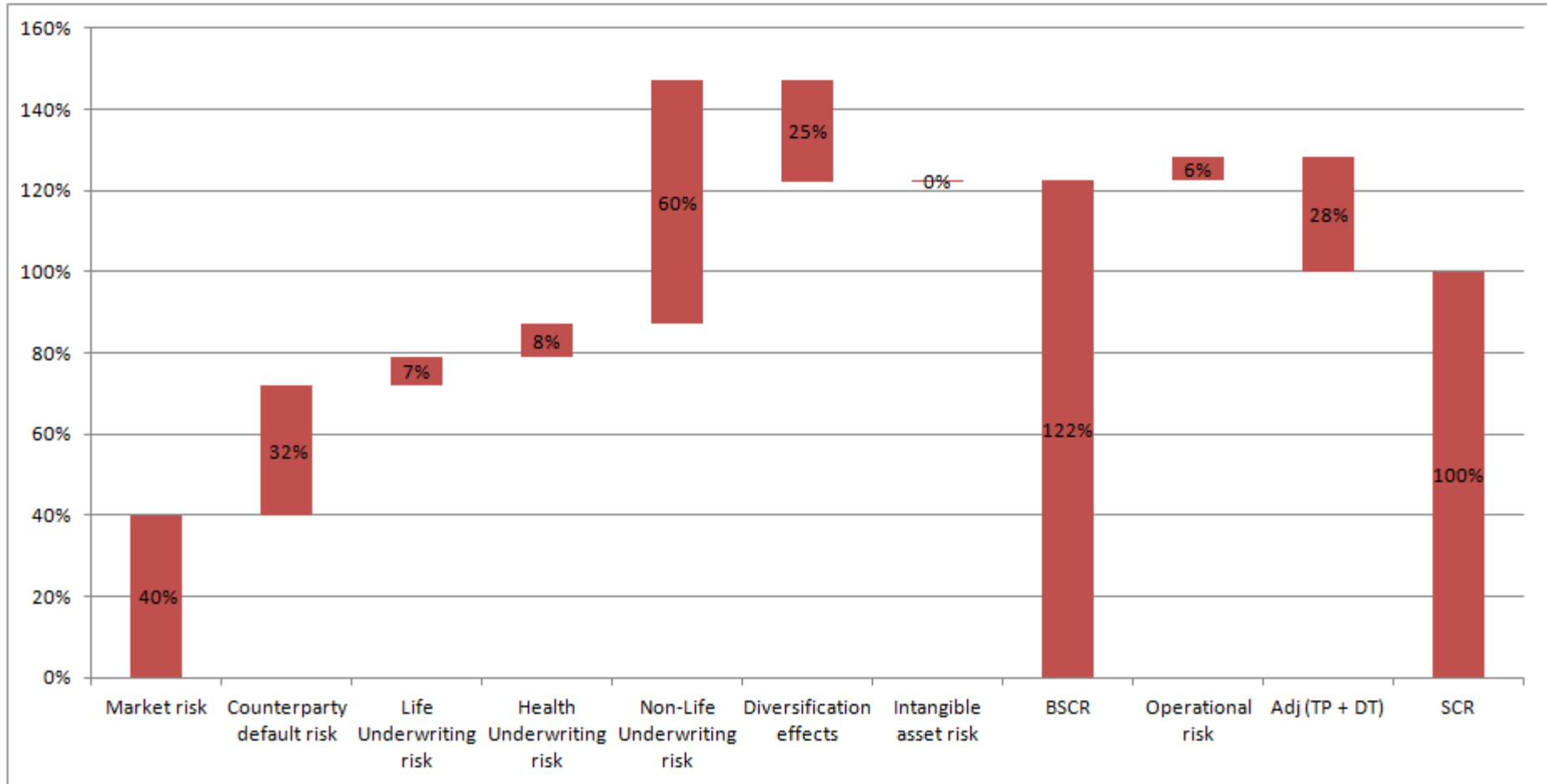
The total BOFs for the overall insurance market has been maintained at around €1bn under Solvency I and Solvency II.

	Solvency I	Solvency II
	% of Total BOF	% of Total BOF
Total Basic Own Fund (BOF) Items	€1.0bn	€1.1bn
Ordinary share capital (net of own shares)	71.3%	64.4%
<i>Paid up</i>	71.3%	64.4%
<i>Called up</i>	0.0%	0.0%
The initial fund (less item of the same type held)	3.5%	3.2%
<i>Paid up</i>	3.5%	3.2%
<i>Called up</i>	0.0%	0.0%
<i>Callable</i>	0.0%	0.0%
Share premium account	8.3%	7.5%
Retained earnings including profits from the year net of foreseeable dividends	15.2%	19.2%
Other reserves from accounting balance sheet	4.7%	4.2%
Reconciliation reserve	-0.6%	-13.1%
<i>Adjustments to assets</i>	0.0%	-29.5%
<i>Adjustments to technical provisions</i>	0.0%	27.6%
<i>of which equalisation provisions</i>	-0.6%	0.0%
<i>less expected profit in future premiums</i>	0.0%	-10.0%
<i>Adjustments to other liabilities</i>	0.0%	-0.5%
<i>Others</i>	0.0%	-0.7%
Surplus funds	0.0%	0.0%
Expected profit in future premiums	0.0%	10.0%
Other paid in capital instruments	1.4%	1.3%
<i>of which Preference shares</i>	0.1%	0.1%
<i>of which Dated</i>	0.1%	0.1%
<i>of which undated with a call option</i>	0.0%	0.0%
<i>of which Undated with no contractual opportunity to redeem</i>	0.0%	0.0%
<i>of which Subordinated liabilities</i>	1.3%	1.2%
<i>of which Dated</i>	1.1%	1.0%
<i>of which undated with a call option</i>	0.2%	0.2%
<i>of which Undated with no contractual opportunity to redeem</i>	0.0%	0.0%
<i>of which Subordinated mutual member accounts</i>	0.0%	0.0%
Other items not specified above	-3.9%	3.3%
Minority interests	0.0%	0.0%
Total Basic own funds before adjustments	100.0%	100.0%

*Note: The 100.0% shown in the last row of the above table is the sum of the items in bold

4. The Solvency Capital Requirement (SCR) based on the Standard formula

The composition of the SCR for the overall insurance market is demonstrated in the following diagram:



The diagram above shows that the BSCR for the overall insurance market is 122% of the SCR, which together with the operational risk at 6% of the BSCR and the negative adjustment for the loss absorbing capacity of technical provisions and deferred taxes (Adj(TP+DT)) at 28% of the BSCR, sums to the SCR.

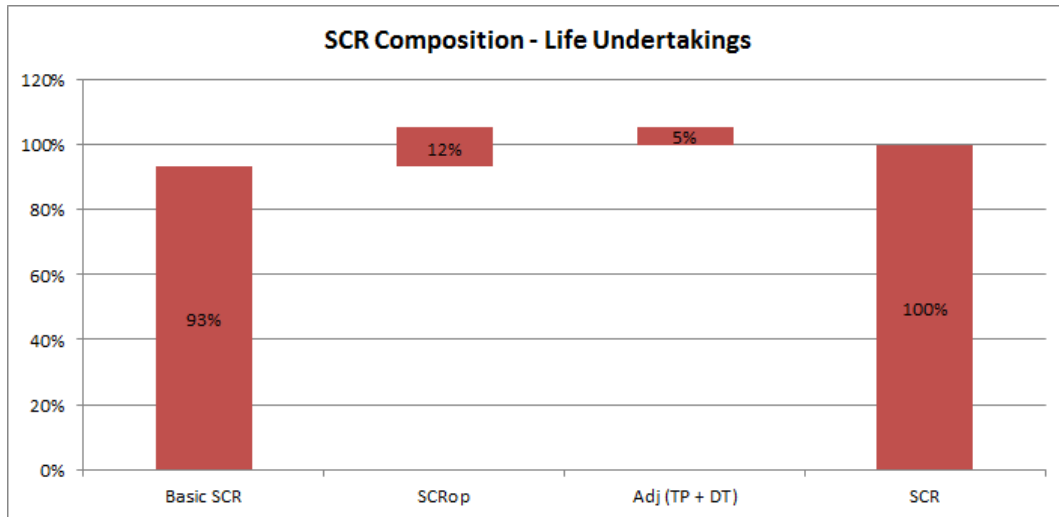
The overall BSCR for the insurance market is composed mainly of the non-life underwriting risk, which has the largest percentage at 60% of the BSCR; followed by the market risk and the counterparty default risk, which form 40% and 32% respectively of the BSCR. In contrast, the life and health underwriting risks form 7% and 8% respectively of the BSCR for the overall insurance market.

The composition of the BSCR and SCR shall be further analysed by the type of undertaking in the following sub-sections, as explained hereunder:

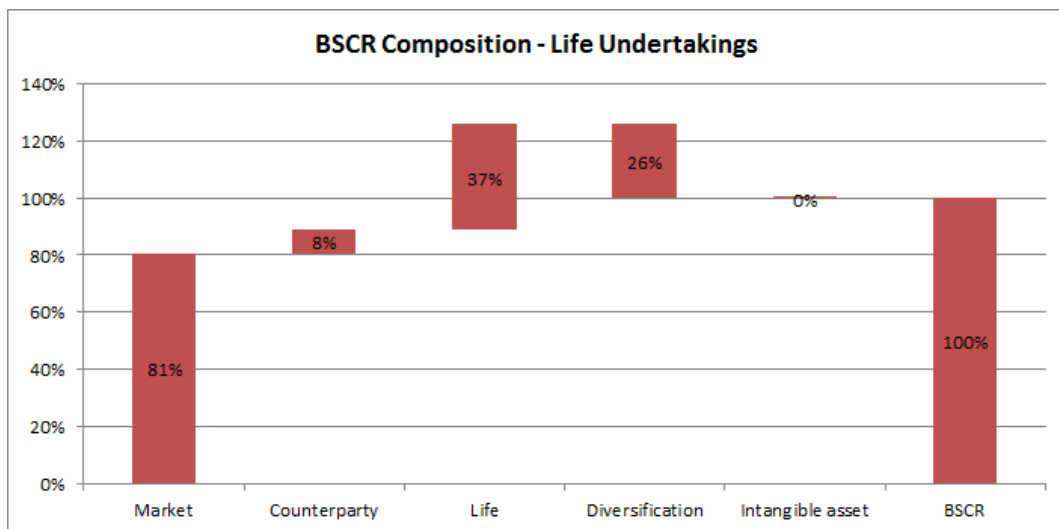
- 1) Life insurance undertakings, covered under Section 4.1;
- 2) Non-life insurance undertakings (excluding captives and PCCs), covered under Section 4.2;
- 3) Captives, covered under Section 4.3;
- 4) Composites, covered under Section 4.4;
- 5) Pure reinsurance undertakings (excluding captives), covered under Section 4.5; and
- 6) Protected Cell Companies (PCCs), covered under Section 4.6.

4.1 Life Insurance Undertakings

For undertakings which solely underwrite life business, the BSCR is 93% of the SCR, which together with the operational risk at 12% of the BSCR and the negative adjustment of 6% of the BSCR for the loss absorbing capacity of technical provisions and deferred taxes (Adj (TP+DT)), sum to the SCR for life undertakings.

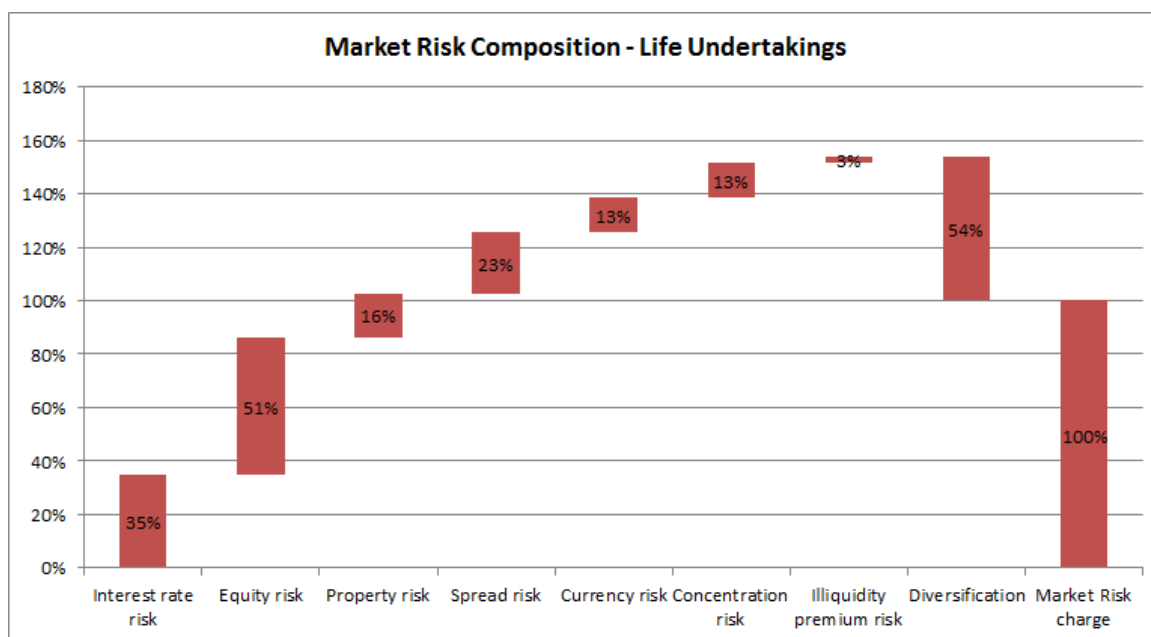


The composition of the BSCR for the life undertakings is shown in the diagram below:



The largest BSCR for the life undertakings is market risk, which forms 81% of the BSCR.

The significant capital requirement for market risk is due to equity risk (forming 51% of the diversified market risk charge); followed by spread risk and market concentration risk which in total amount to 36% of the diversified market risk charge; and interest rate risk, which amounts to 35% of the diversified market risk charge.

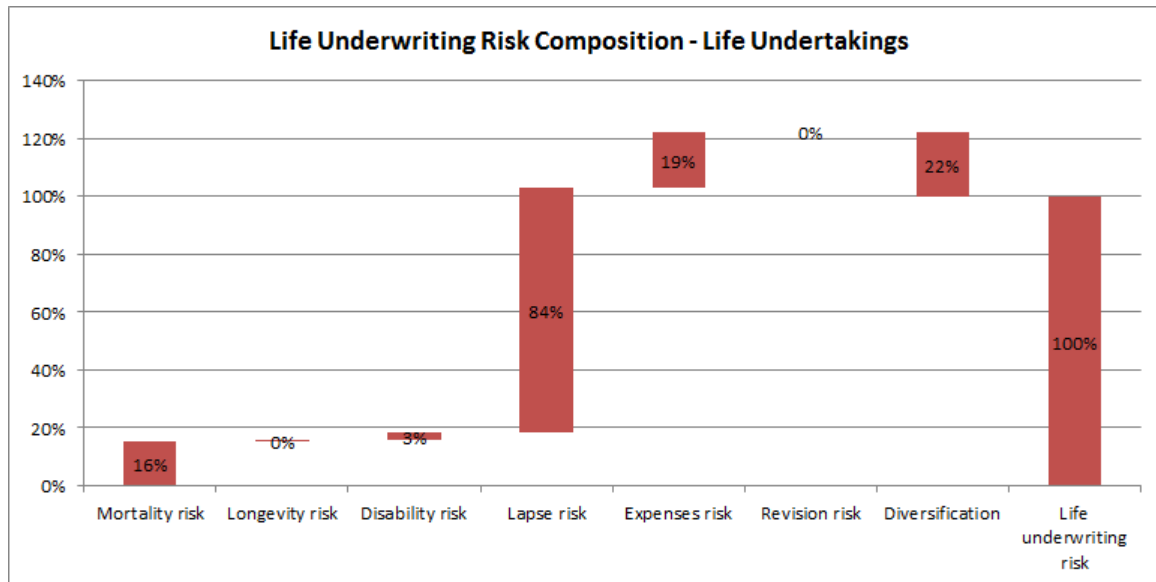


The significant capital requirement for equity risk for life undertakings is due to the significant amounts of direct investments in equities and indirectly through investment funds, which in total amount to 20% of the total market value of the main assets for the life business. The spread and market concentration risks allow for the credit risk exposures arising from the bond investments, in particular corporate bonds which make up 12% of the total market value of the main assets for the life business. The interest rate risk is mainly due to the large investments in bonds and short-term bank deposits (as shown in the table below), and the technical provisions and reinsurance recoverables which are sensitive to the changes in the interest rates.

Life undertakings	% of Total market value for the main assets of the life undertakings
Property (other than own use)	5%
Participations	1%
Equities/other shares (other than participations) - listed	8%
Equities/other shares (other than participations) - unlisted	0%
Bonds - Government and multilateral banks	47%
Bonds - Corporate (asset backed securities)	0%
Bonds - Corporate (other)	12%
Structured notes	0%
Investment funds	12%
Derivatives	0%
Long term bank deposits	0%
Other investments	0%
Uncollateralized loans made	0%
Collateralized loans made	0%
Loan policies	1%
Cash and cash equivalents	1%
Short term bank deposits	13%
Reinsurance recoverables	-1%
Total	100%

The second largest BSCR for the life undertakings arises from the life underwriting risk, mainly from the lapse risk and expense risk, which form 84% and 19% respectively of the diversified life underwriting risk capital requirement.

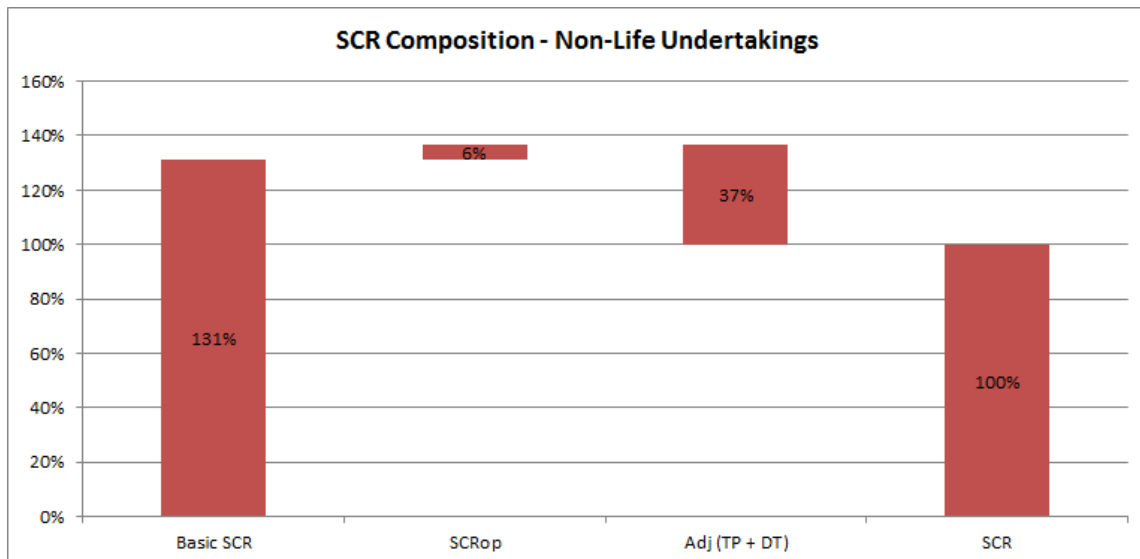
This result is in line with the nature of the products sold by the life undertakings in the insurance market which have the following features: [1] payout on the surrender of a policy; [2] minimum guaranteed surrender value, and [3] the application of market value adjustments on surrender.



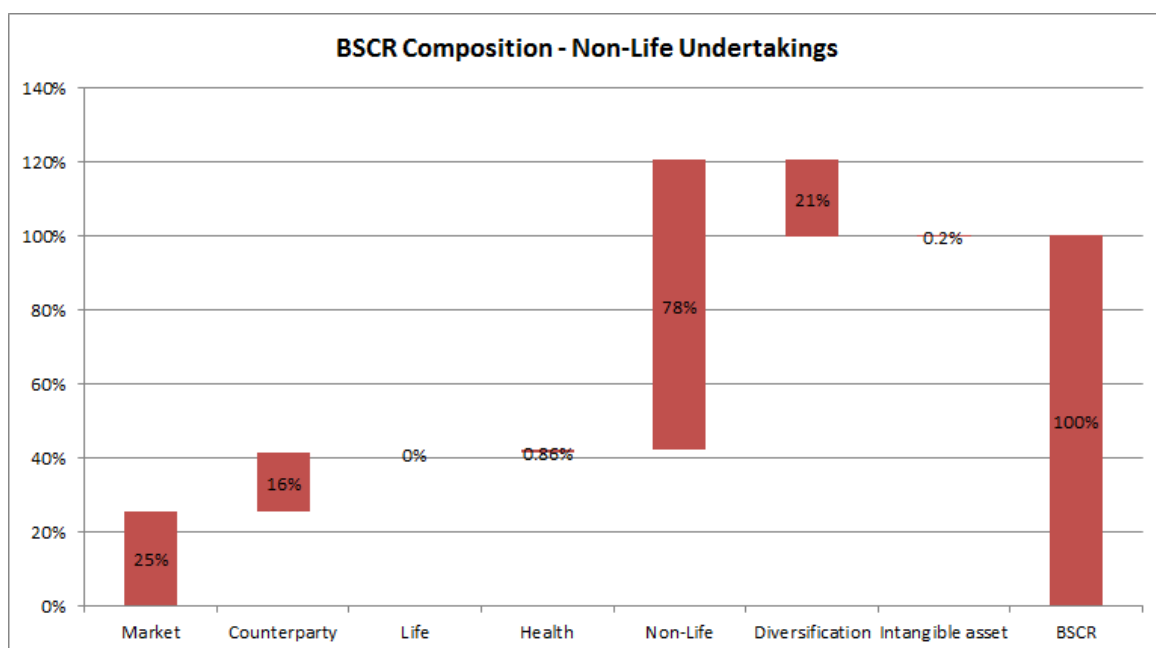
The third largest BSCR arises from the counterparty default risk, which amounts to 8% of the BSCR for the life business. This is mainly attributed to Type 1 exposures such as reinsurance recoverables and cash at bank; and Type 2 exposures such as insurance recoverables.

4.2 Non-Life Insurance Undertakings (excluding captives and PCCs)

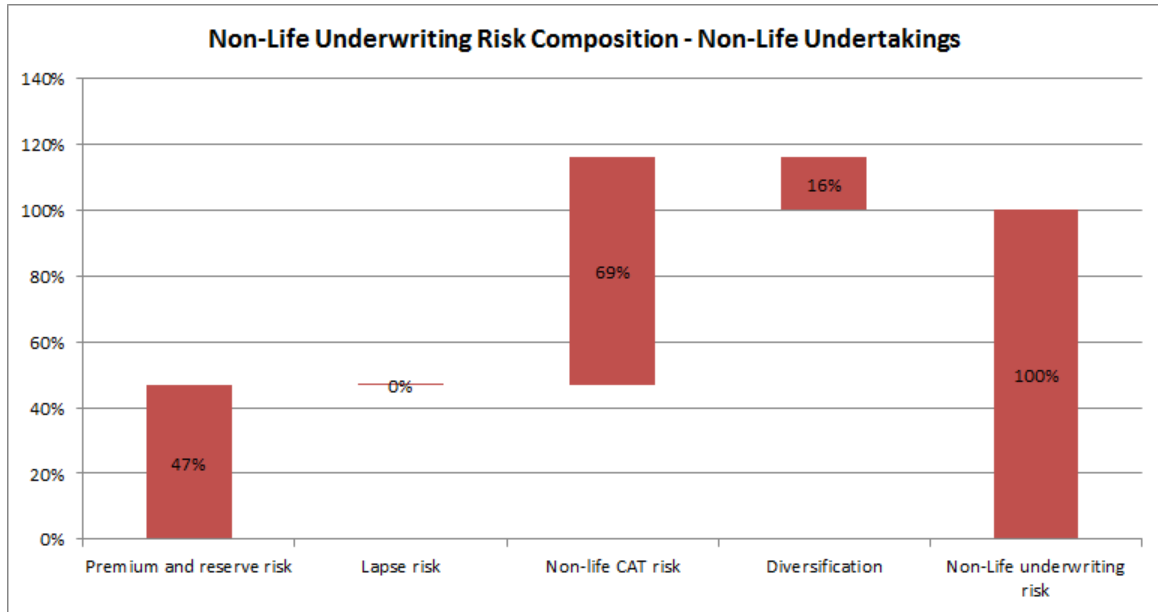
For undertakings which solely underwrite non-life business, the BSCR is 131% of the SCR, which together with the operational risk at 6% of the BSCR and the negative adjustment of 37% of the BSCR for the loss absorbing capacity of technical provisions and deferred taxes (Adj (TP+DT)), sum to the SCR for non-life undertakings.



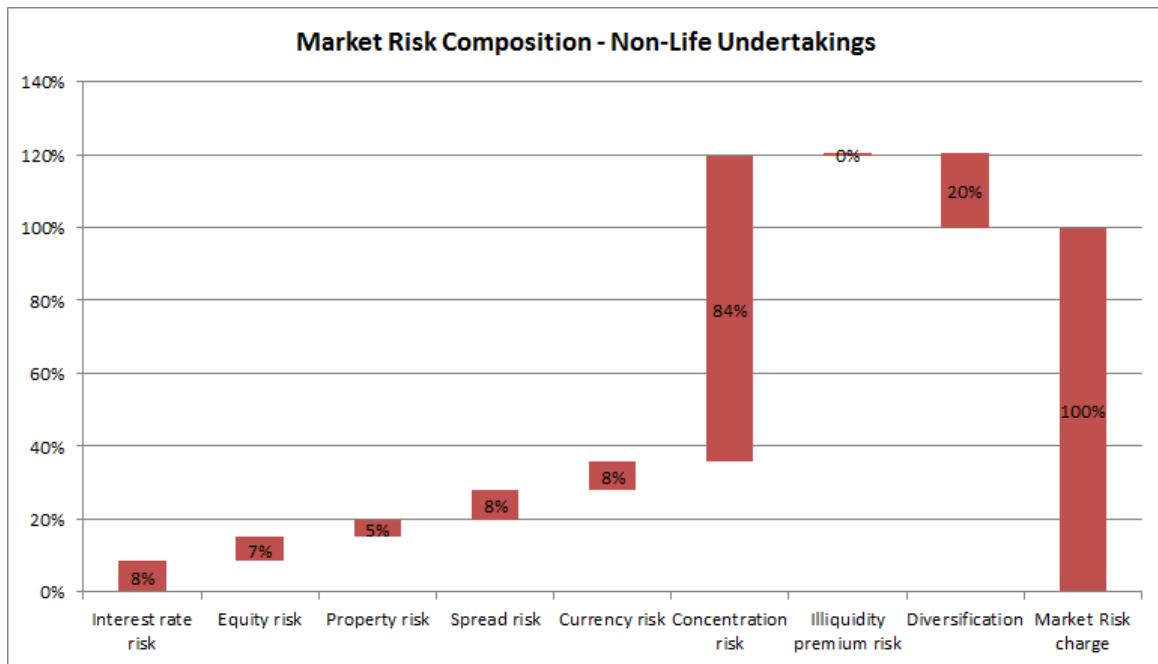
The BSCR for the overall non-life business is dominated by the non-life underwriting risk of 78%, as expected.



The significant capital requirement within the non-life underwriting risk is due to the non-life catastrophe risk, which amounts to 69% of the total diversified non-life underwriting risk charge. In particular, the natural catastrophe risk makes up around 86% of the diversified non-life catastrophe risk charge for the non-life business, followed by the man-made catastrophe risk at 42% of the non-life catastrophe risk charge and the other non-life catastrophe risk at 5% of the non-life catastrophe risk charge. This is then followed by the non-life premium and reserve risk components at 47% of the total diversified non-life underwriting risk, as shown in the diagram below.



The second most significant BSCR component for the non-life undertakings is the market risk, which amounts to 25% of the BSCR. This risk was mainly driven by the spread and market concentration risk sub-modules, which in total amount to 92% of the total diversified market risk charge.



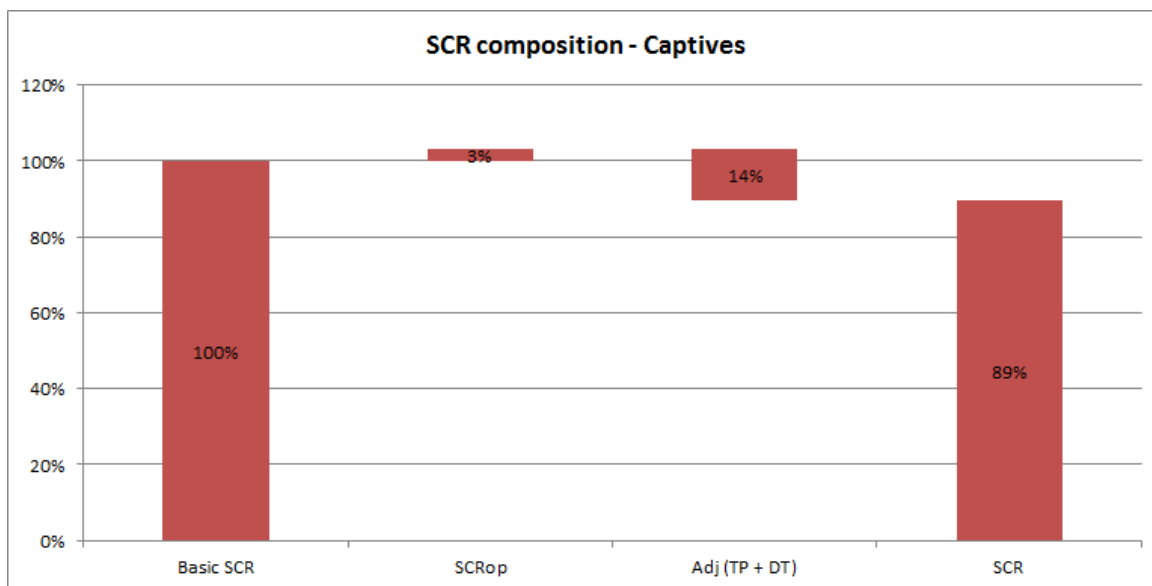
The significant capital requirement for spread and market concentration risks is due to significant investments in short-term deposits, which amount to 21% of the total market value for the main assets of the non-life insurance undertakings; followed by uncollateralized intra-group loans which amount to 13% of the total market value for the main assets of the non-life insurance undertakings; and bonds, in particular corporate bonds, which amount to 8% of the total market value for the main assets of the non-life insurance undertakings, as shown in the table hereunder:

Non-Life undertakings	% of Total market value for the main assets of the non-life undertakings
Property (other than own use)	1%
Participations	0%
Equities/other shares (other than participations) - listed	1%
Equities/other shares (other than participations) - unlisted	0%
Bonds - Government and multilateral banks	12%
Bonds - Corporate (asset backed securities)	0%
Bonds - Corporate (other)	2%
Structured notes	0%
Investment funds	1%
Derivatives	0%
Long term bank deposits	1%
Other investments	1%
Uncollateralized loans made	36%
Collateralized loans made	0%
Cash and cash equivalents	33%
Short term bank deposits	6%
Reinsurance recoverables	4%
Total	100%

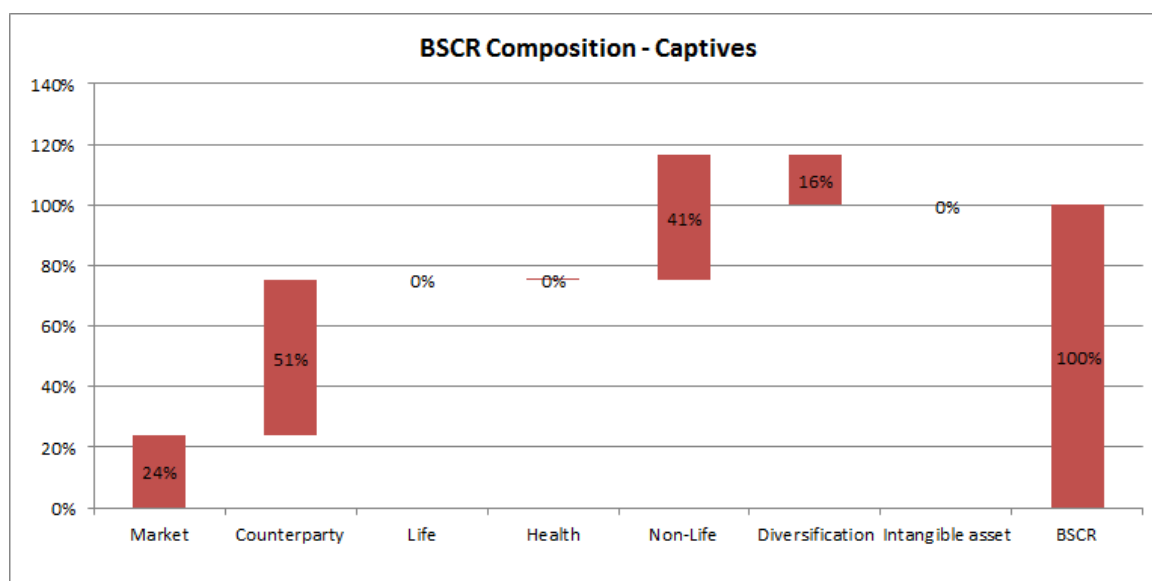
The third largest BSCR for the overall non-life business is the counterparty default risk, mainly due to cash at bank which amount to 32% of the total market value for the non-life business and reinsurance recoverables which amount to 5% of the total market value for the non-life business as shown in the table above.

4.3 Captives

For captive undertakings, the SCR is 89% of the BSCR.



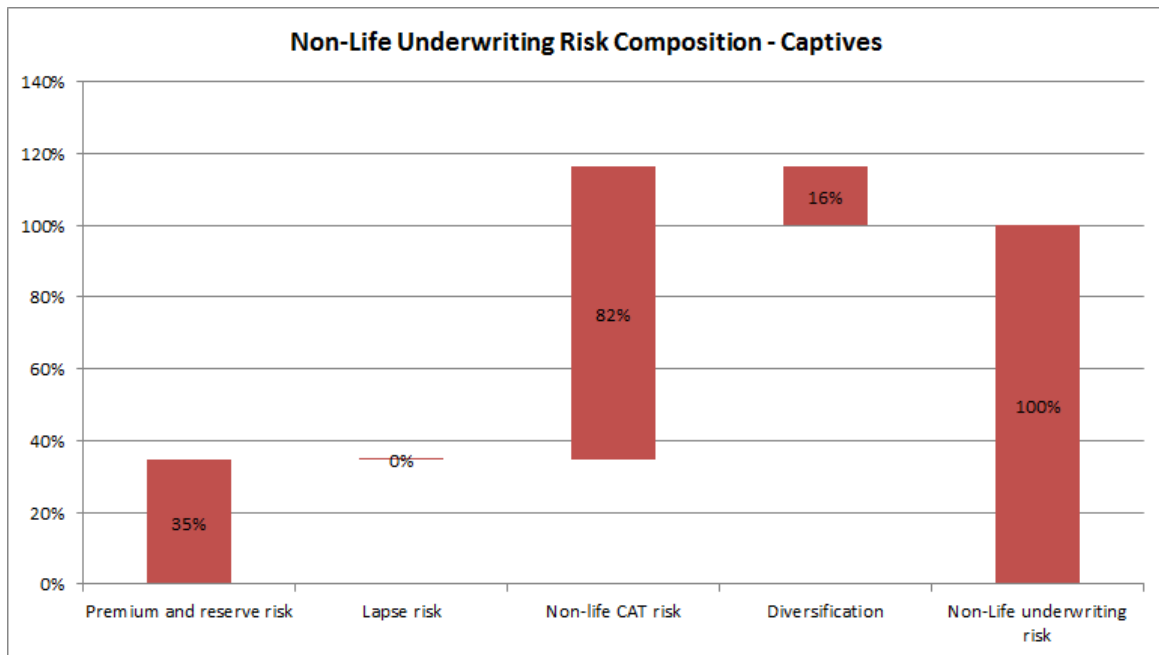
The most significant BSCR for captives relates to the counterparty default risk module, which amount to slightly more than half of the BSCR, as shown in the following diagram:



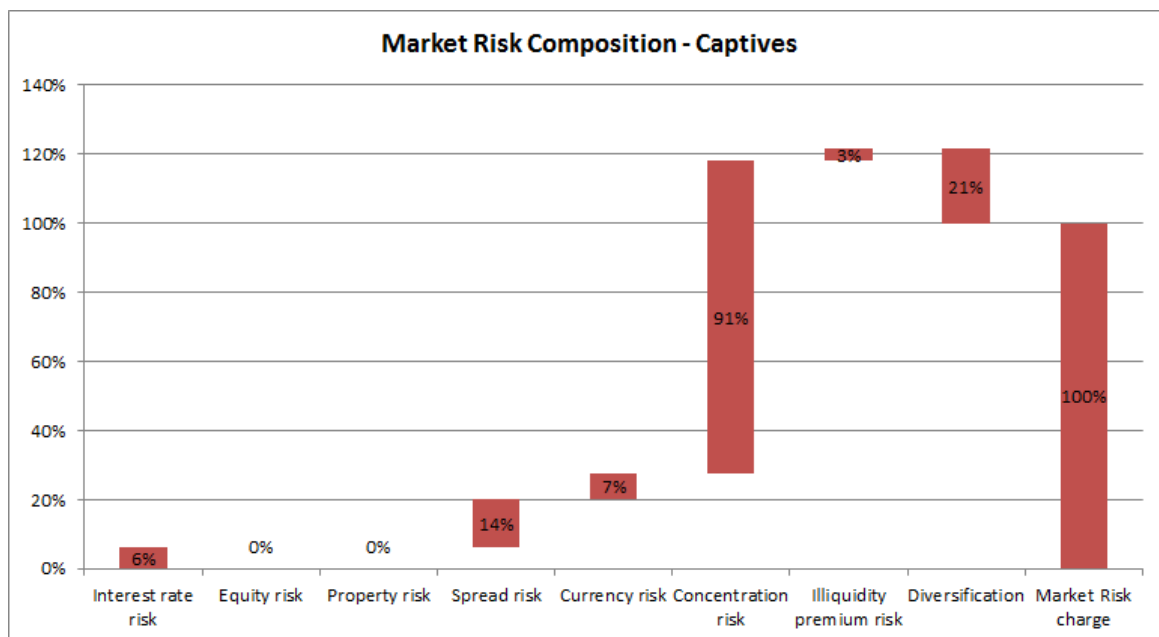
The significant counterparty default risk capital requirement is due to significant exposures held with reinsurance counterparties (amounting to 29% of the total market value of the main assets for captives), in particular proportional reinsurance. This capital requirement is the most significant for captives which reinsure with only one unrated reinsurer.

The second largest BSCR for captives is the non-life underwriting risk, which amount to 41% of the BSCR. This is mainly attributed to catastrophe risks, where the capital requirement amounts to 82% of the total diversified non-life underwriting risk capital requirement of which the non-life man-made catastrophe risk makes up 87% of the total diversified non-life catastrophe risk charge.

The substantial exposure to catastrophe risks is expected given the nature of the risks and exposures underwritten by captives, which would typically have a low probability of occurrence but high severity when a claim event occurs.



The third largest component of the BSCR for captives is the market risk, which amount to 24% to the BSCR.



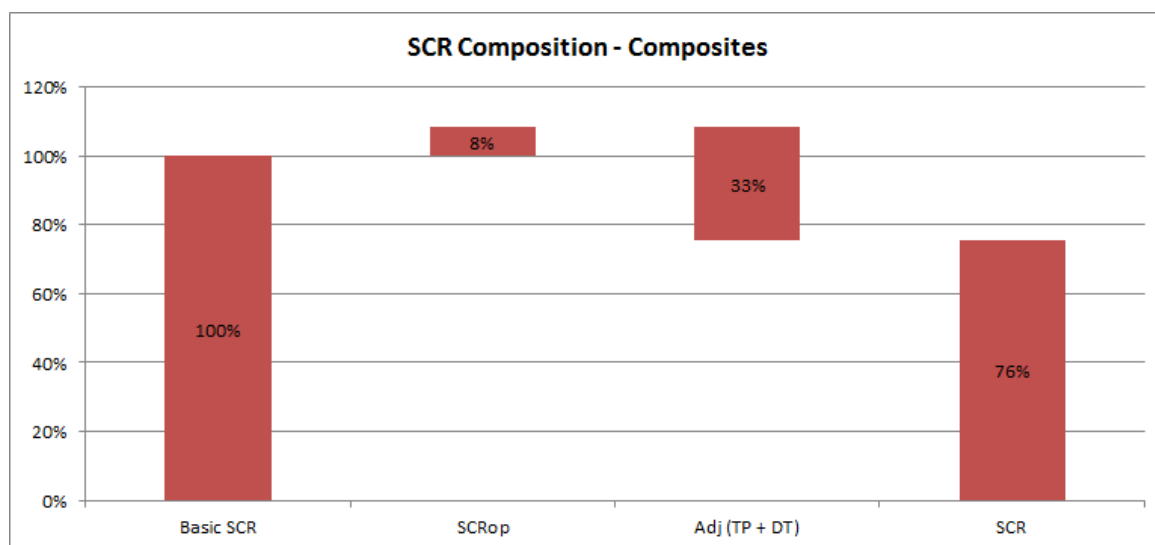
The market risk is mainly driven by the spread and market concentration risks (which in total amount to about 105% of the total diversified market risk charge for captives) arising from the significant exposures to uncollateralized intra-group loans held with unrated non-insurance parent undertakings, or with subsidiaries within the group of undertakings, where the market value amounts to 24% of the total market value of the main assets for captives, as shown in the following table:

Captives	% of Total market value for the main assets of captives
Property (other than own use)	0%
Participations	0%
Equities/other shares (other than participations) - listed	0%
Equities/other shares (other than participations) - unlisted	0%
Bonds - Government and multilateral banks	12%
Bonds - Corporate (asset backed securities)	4%
Bonds - Corporate (other)	0%
Structured notes	0%
Investment funds	12%
Derivatives	0%
Long term bank deposits	0%
Other investments	0%
Uncollateralized loans made	24%
Cash and cash equivalents	18%
Short term bank deposits	0%
Reinsurance recoverables	29%
Total	100%

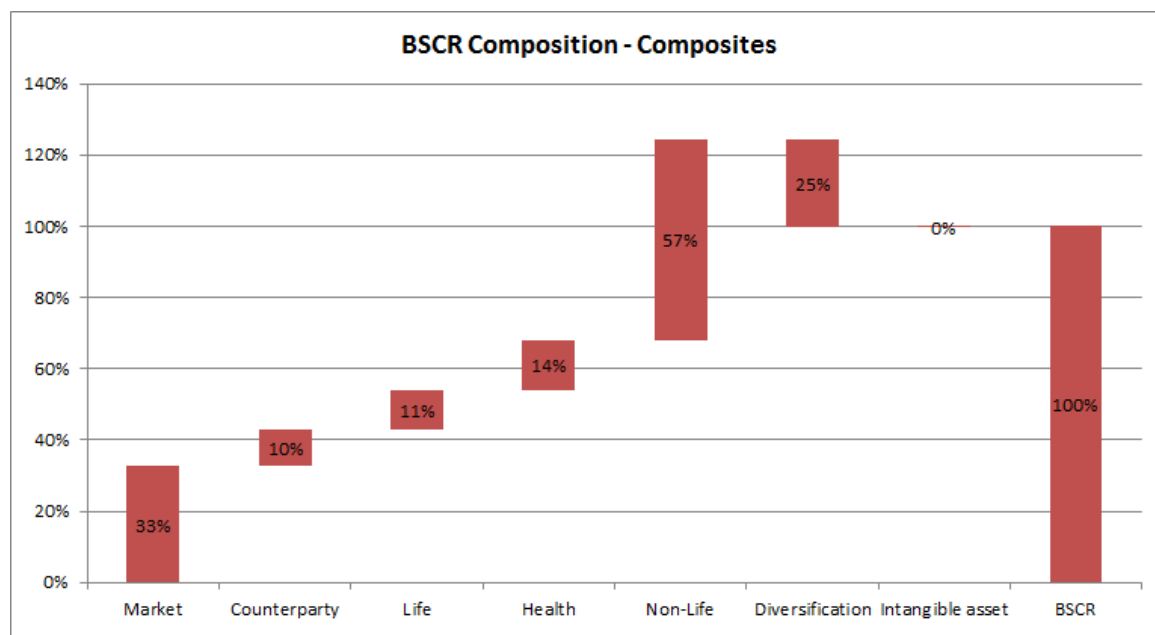
The observations mentioned in this section are consistent with the numerous studies and articles published by various insurance bodies in recent years on the impact that Solvency II has on captives.

4.4 Composites

For composite undertakings¹, the SCR is 76% of the BSCR.

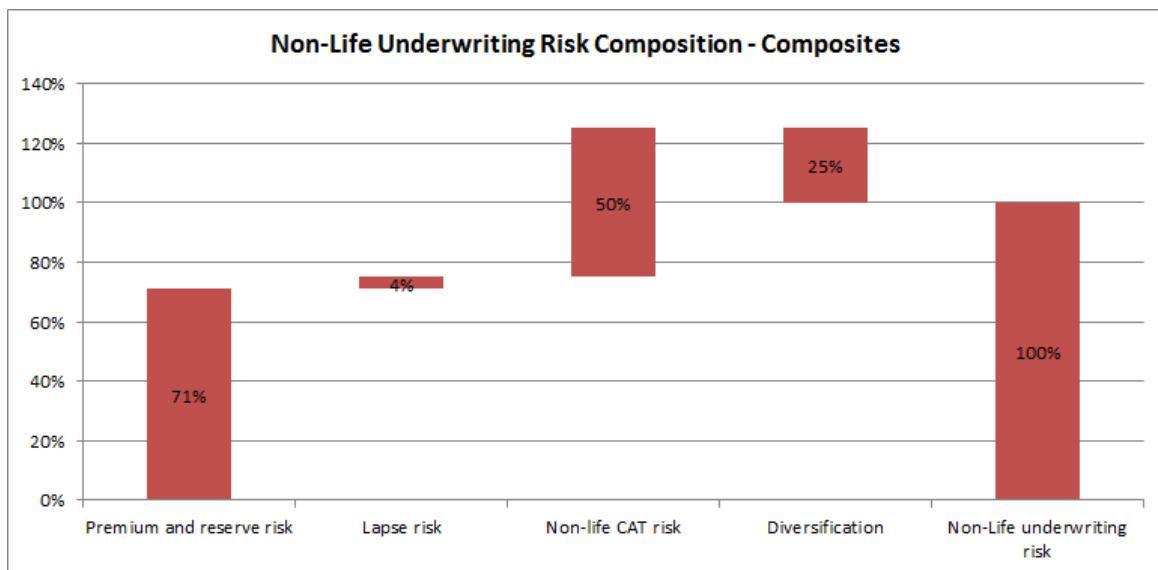


The largest component of the BSCR for composites is the non-life underwriting risk, as evident from the following diagram, whereby the non-life underwriting risk capital requirement forms more than half of the BSCR for these undertakings.



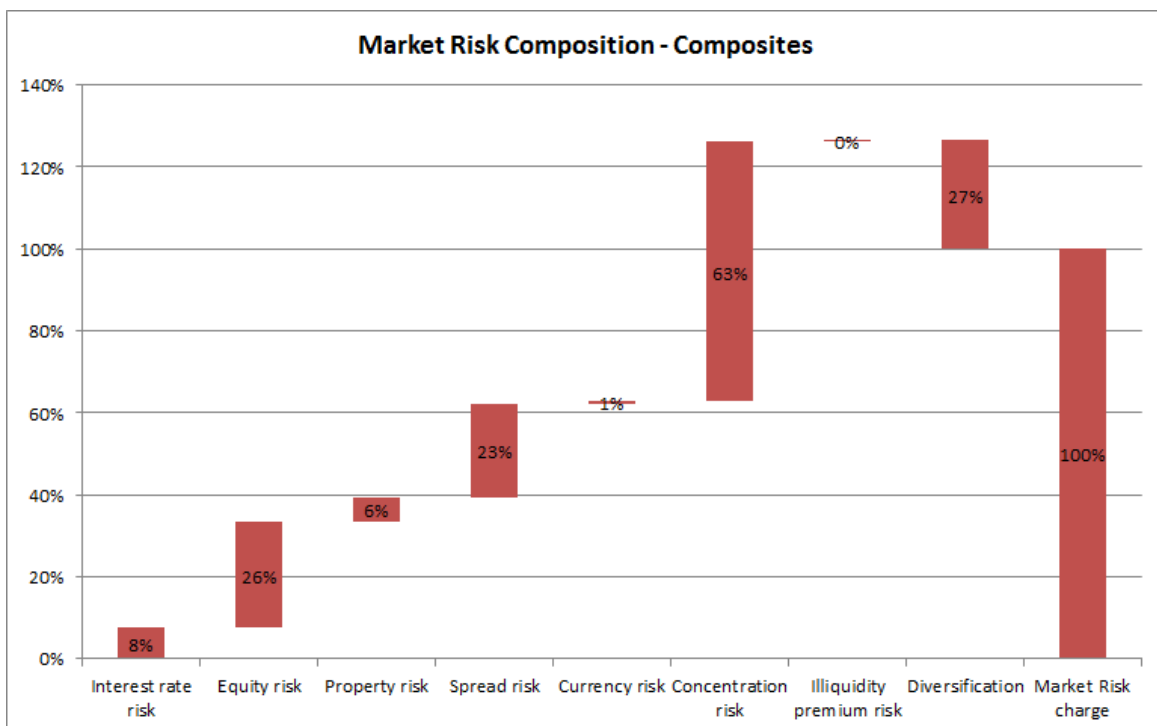
¹Apart from those undertakings which have been authorised as composites to underwrite both non-life and life business, composite undertakings for the purpose of this document also incorporate the undertakings and PCCs which have been authorised to underwrite solely non-life or life business but which are part of the same group.

The non-life underwriting risk charge is mainly composed of the premium and reserve risk and the non-life catastrophe risk, which amount to 71% and 50% respectively of the total diversified non-life underwriting risk charge for composites, as observed from the diagram below:



Where composites have used the revised approach to calculate the non-life catastrophe risk for the other non-life catastrophe risk, the solvency capital required has been more significant when compared to the scenario-based approach. The other non-life catastrophe risk charge contributed 95% to the total diversified non-life catastrophe risk charge.

The second largest BSCR for composites is market risk, which amounts to 33% of the BSCR for composites.



The largest sub-modules within the market risk module are the spread and market concentration risk sub-modules, which in total amount to 86% of the total diversified market risk capital requirement; followed by the equity risk sub-module at 26% of the total diversified market risk capital requirement. This is due to the

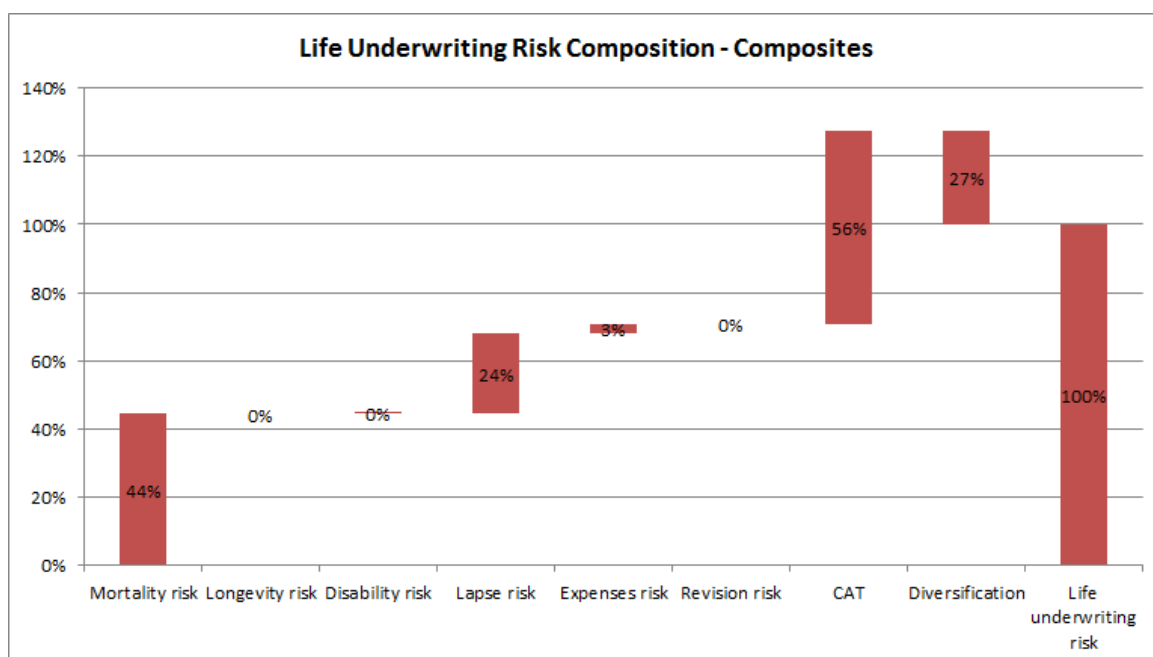
significant investments in term deposits which amount to 19% of the total market value for the main assets of composites and equities through participations and investment funds which amount to 19% of the total market value for the main assets of composites respectively, as shown in the table below:

Composites	% of Total market value for the main assets of composites
Property (other than own use)	2%
Participations	11%
Equities/other shares (other than participations) - listed	1%
Equities/other shares (other than participations) - unlisted	0%
Bonds - Government and multilateral banks	12%
Bonds - Corporate (asset backed securities)	0%
Bonds - Corporate (other)	2%
Structured notes	0%
Investment funds	8%
Derivatives	0%
Long term bank deposits	11%
Other investments	0%
Uncollateralized loans made	15%
Cash and cash equivalents	12%
Short term bank deposits	19%
Reinsurance recoverables	7%
Total	100%

In contrast, the health and the life underwriting risk modules amount to 14% and 11% respectively of the BSCR for composites.

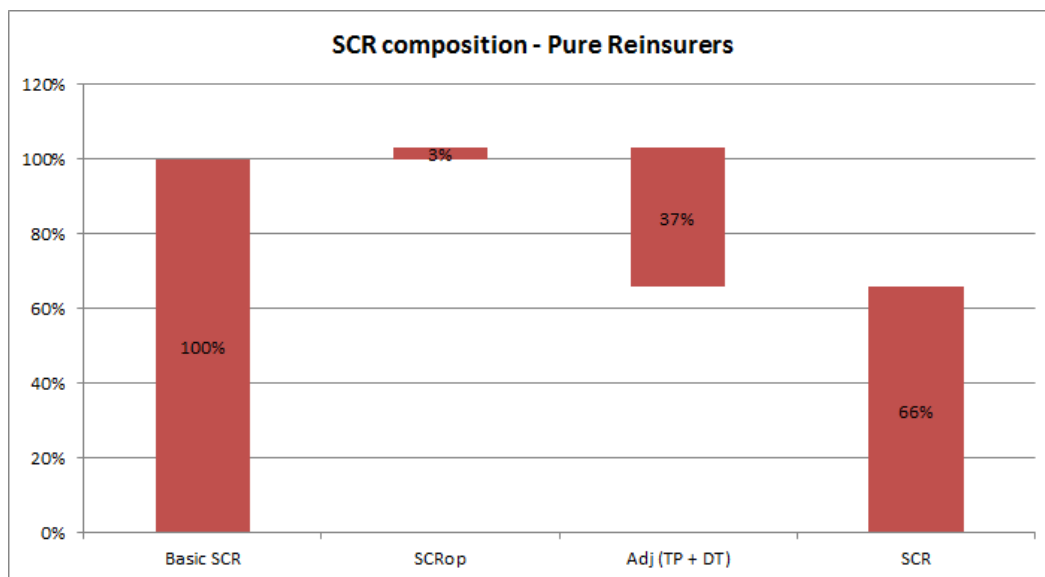
Around half of the diversified health underwriting risk for this type of undertaking relates to health non-similar to life (Non-SLT) business; another 49% relates to health similar to life (SLT) business, and with only a small percentage at 3% relates to health catastrophe risk.

The life underwriting risk for composites is mainly dominated by the life catastrophe risk, which amounts to 56% of the diversified life underwriting risk charge; followed by mortality risk at 44%, as observed from the diagram below:

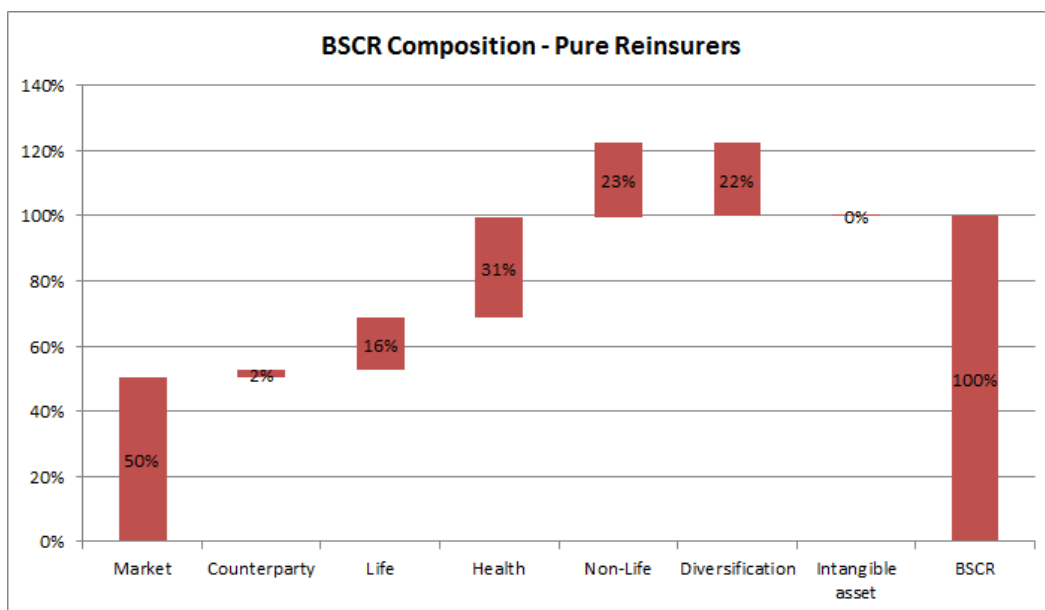


4.5 Pure Reinsurance Undertakings (excluding captives)

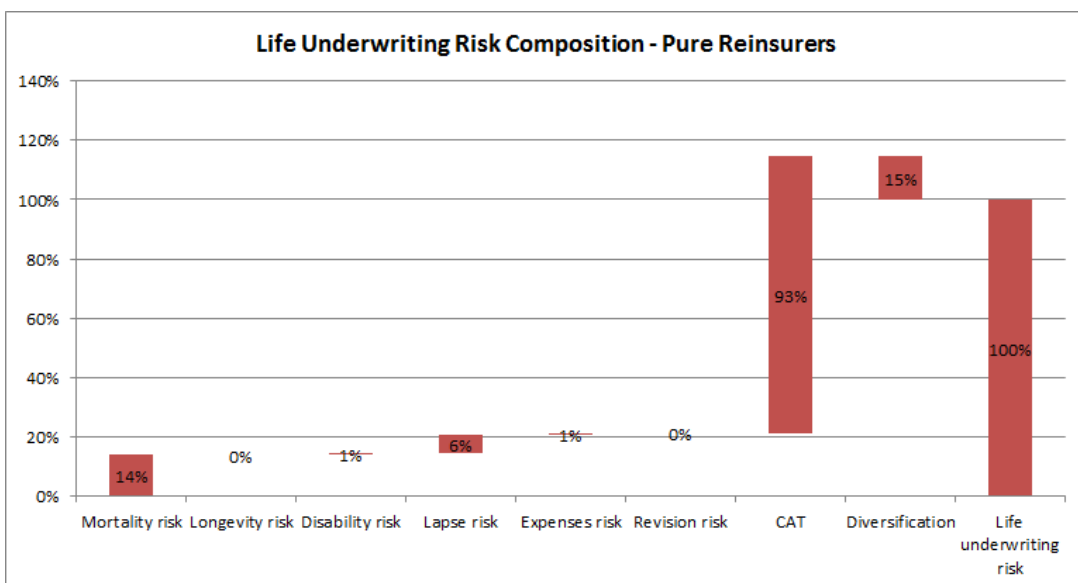
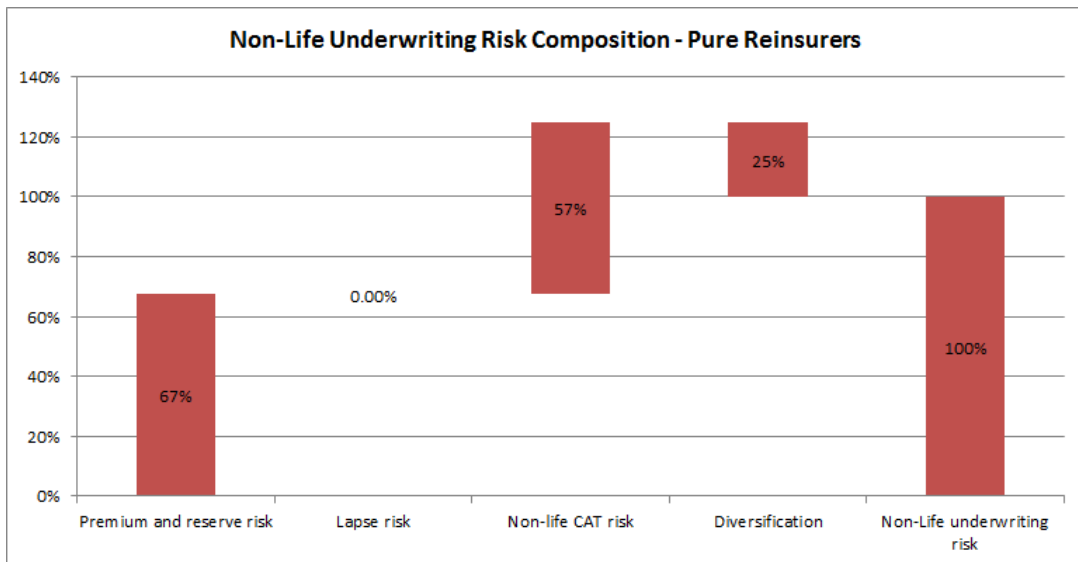
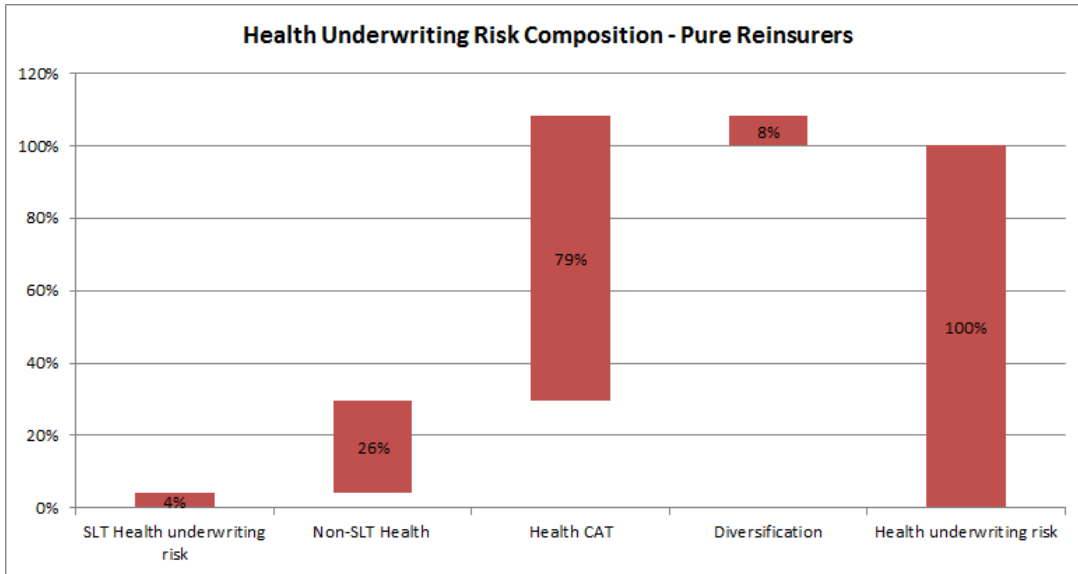
For the pure reinsurance undertakings, the SCR is 66% of the BSCR.



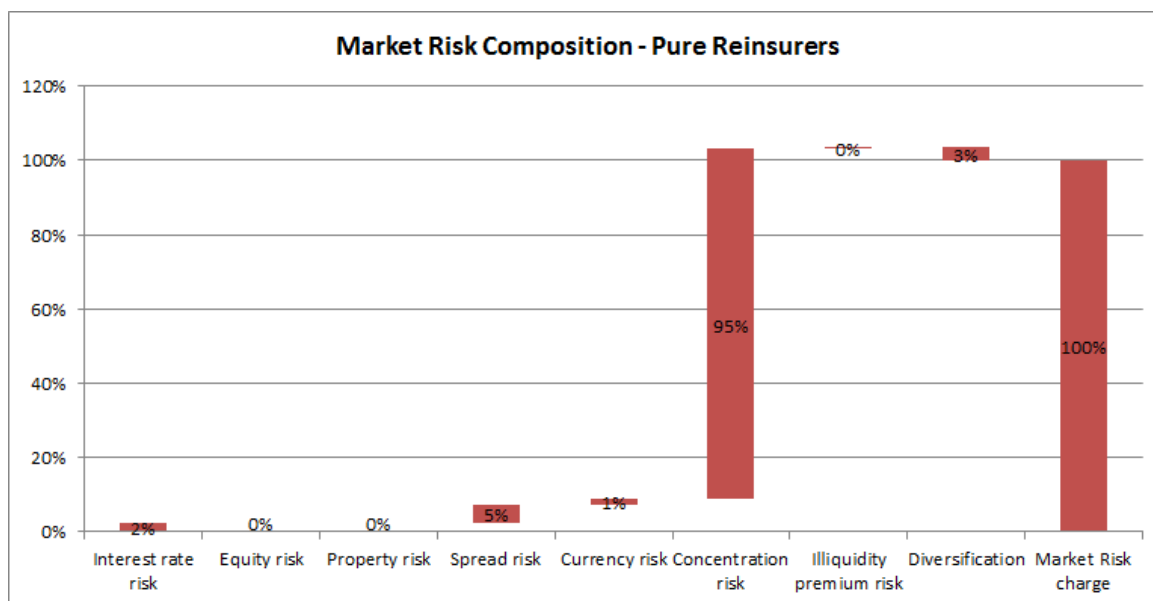
The BSCR composition for pure reinsurers is provided in the diagram hereunder:



For the reinsurance undertakings, the underwriting risk in total for health, life and non-life risks has the most significant capital requirement at 70% of the BSCR. One of the most significant components of the underwriting risk module is the catastrophe risk sub-module which is expected due to the nature of the risks that are reinsured. This is evident from the diagrams presented below:



The second largest BSCR for pure reinsurers is market risk, which makes up half of the total BSCR for these undertakings and which is almost entirely driven by the spread and market concentration risks as evident from the diagram below:



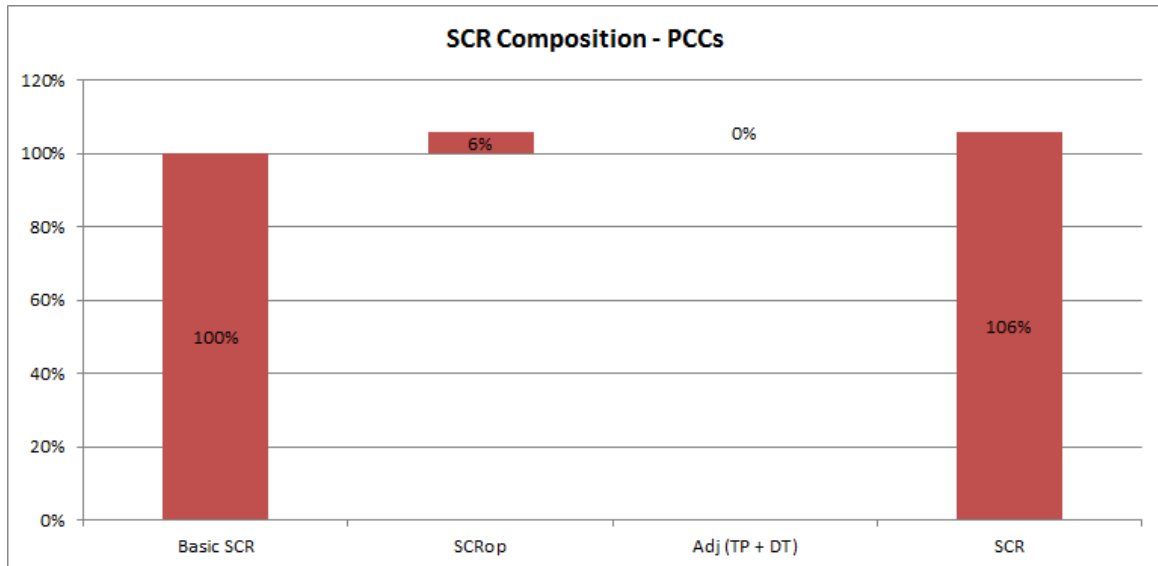
This result is mainly due to the significant exposures in unrated non-insurance parent undertakings and/or subsidiaries in the form of intra-group loans within the group of undertakings; and short-term deposits, which amount to 49% and 13% respectively of the total market value of the main assets for these undertakings, as shown in the table below:

Pure reinsurers	% of Total market value for the main assets of pure reinsurers
Property (other than own use)	0%
Participations	0%
Equities/other shares (other than participations) - listed	0%
Equities/other shares (other than participations) - unlisted	0%
Bonds - Government and multilateral banks	7%
Bonds - Corporate (asset backed securities)	0%
Bonds - Corporate (other)	1%
Structured notes	0%
Investment funds	4%
Derivatives	0%
Long term bank deposits	0%
Other investments	0%
Uncollateralized loans made	49%
Cash and cash equivalents	10%
Short term bank deposits	13%
Reinsurance recoverables	16%
Total	100%

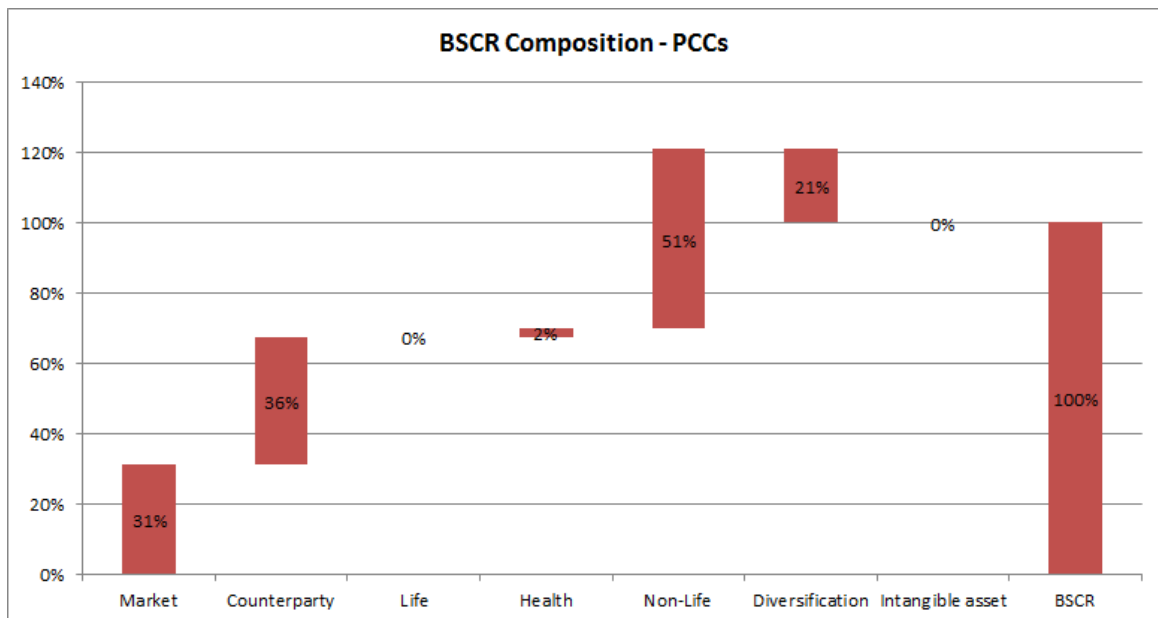
The third largest BSCR is the counterparty default risk which is due to reinsurance recoverables from retrocessionaires which amount to 16% of the total market value of the main assets for pure reinsurers and cash at bank which amount to 10% of the total market value of the main assets for pure reinsurers.

4.6 PCCs

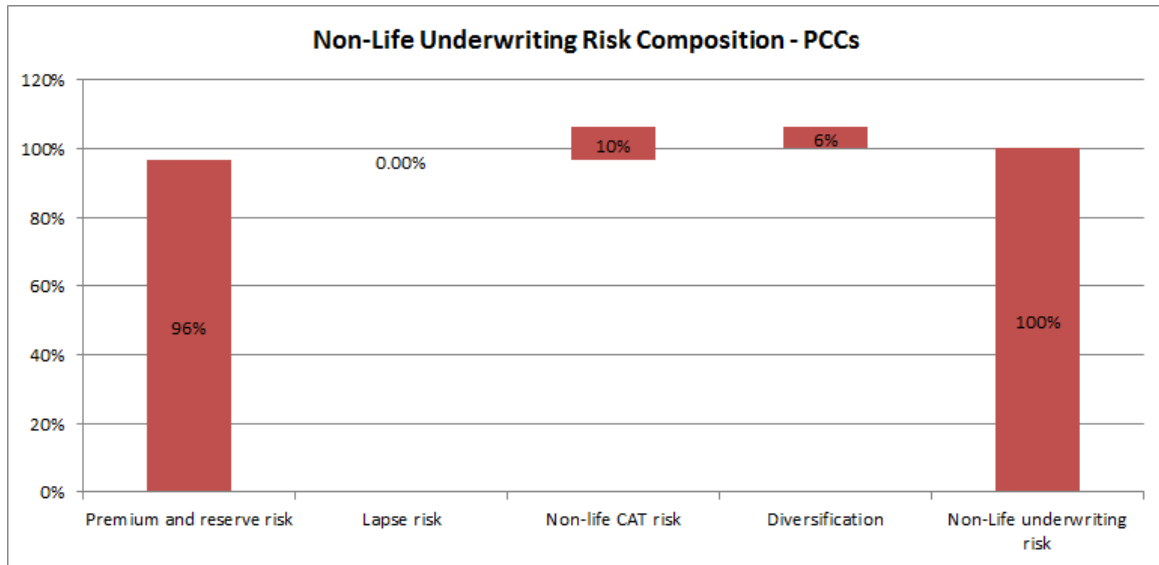
For the 2012 MFS standard formula exercise, the solvency capital requirement calculations for PCCs were performed in line with the Solvency II principles for ring-fenced funds as set out in the technical specifications. The SCR for PCCs is 106% of the BSCR.



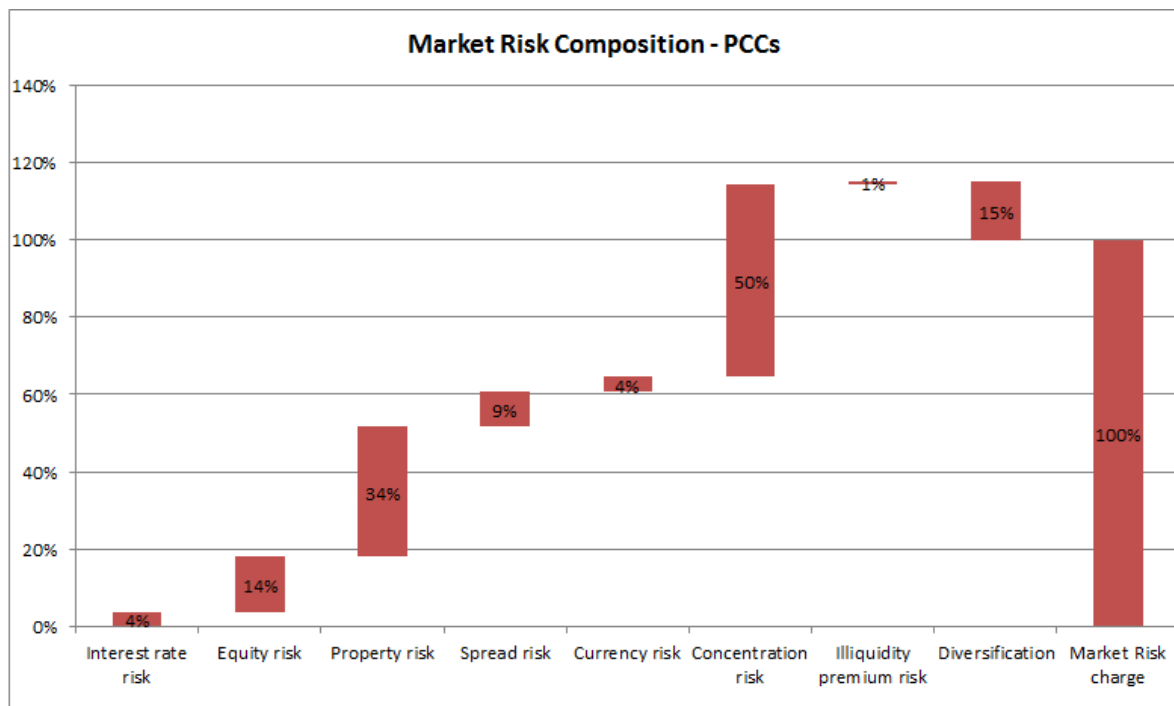
Since PCCs mainly underwrite non-life insurance and reinsurance business, the largest BSCR arises from the non-life underwriting risk, which amounts to more than half of the BSCR for PCCs.



The diagram below shows that the premium and reserve risk is the main driver (forming 96% of the total diversified non-life underwriting risk charge for PCCs) of the significant non-life underwriting risk capital requirement incurred by PCCs.



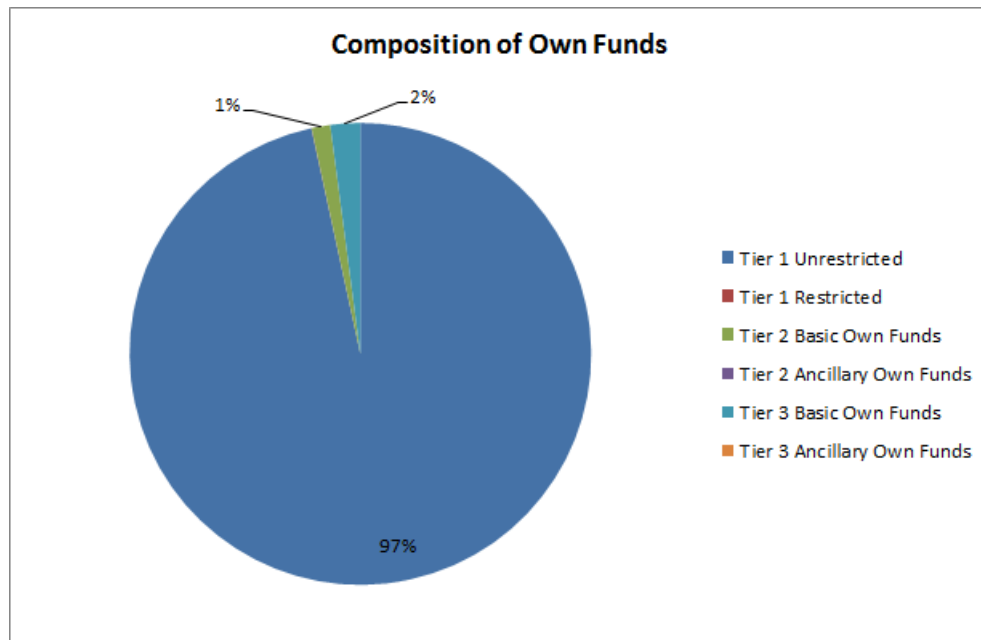
This is then followed by the counterparty default risk and the market risk, which amount to 36% and 31% respectively of the overall BSCR for PCCs. The market risk capital requirement for PCCs was observed to have mainly arisen from the spread and concentration risk sub-modules and the property risk sub-module, which amount to 59% and 34% respectively of the total diversified market risk charge for PCCs.



5. Own Funds

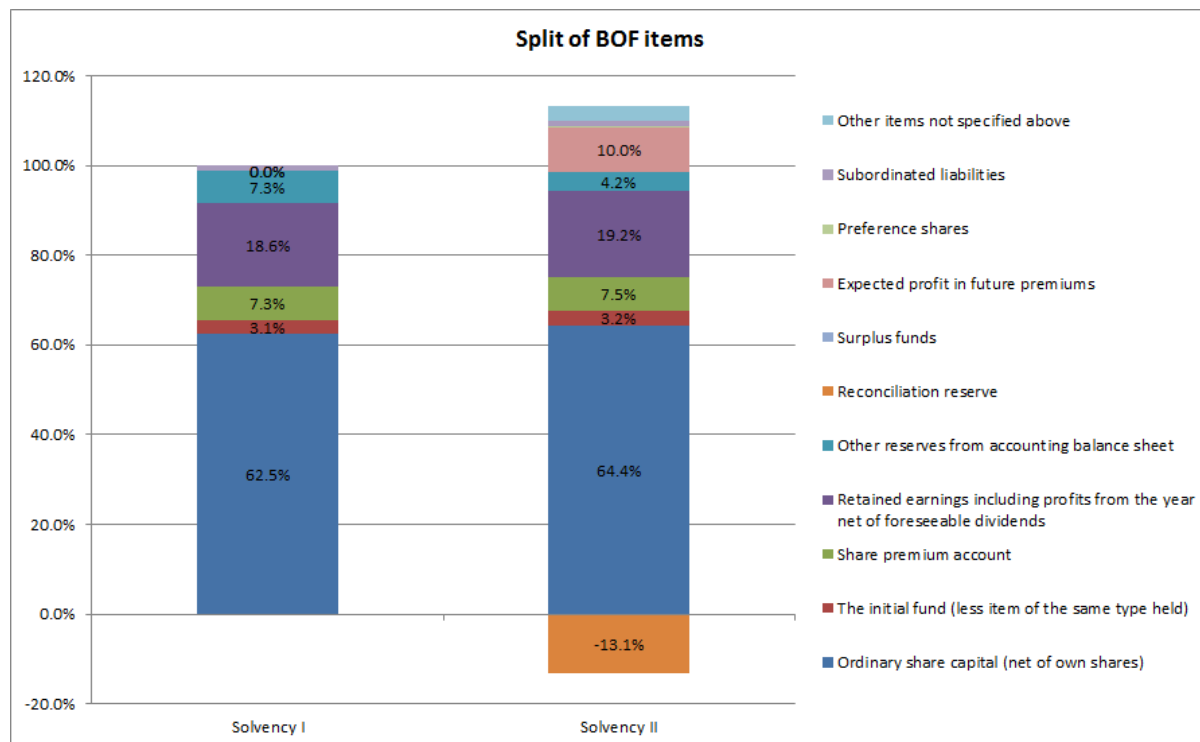
5.1 Composition of Own Funds

The composition of own funds held by the insurance market mainly relates to only basic own funds; no undertaking holds any ancillary own funds and the total Tier 1 restricted own funds comprises only 0.02% of the total own funds. As is evident from the diagram below, 97% of the total basic own funds relates to the highest quality type of capital (Tier 1); and with only 1% and 2% of the total basic own funds which relate to Tier 2 and Tier 3 capital respectively. Tier 2 basic own funds is composed of *preference shares, subordinated liabilities* and *Other reserves from the accounting balance sheet*. Tier 3 basic own funds is mainly composed of *net deferred tax assets – relegate from Tier 1 to Tier 3*.



5.2 Breakdown of Basic Own Funds (BOF)

The ordinary share capital forms the largest share of the total basic own funds. This is then followed by retained earnings including profits from the year net of foreseeable dividends with a percentage of almost 20% of the total basic own funds.



6. Standard Formula Concerns

The table below provides a summary of the main items that raised concerns for the MFSA whilst reviewing the standard formula submissions.

Subject	Comment number	Description
Deferred Taxation	1	There remains level of uncertainty around the application and the calculation of deferred taxation under Solvency II.
Discounting	2	<p>Some undertakings found difficulty understanding the concept of discounting.</p> <p>One example is that some undertakings use the Solvency I figure for the outstanding claims reserves and discounting this value, instead of splitting out the cash flows according to the years where the reserves are expected to be paid and then discounting these cash flows.</p> <p>Another example is when calculating the market consistent value of the bonds. This is often done by splitting the total market value of the bond equally over the outstanding duration of the bond and discounting these cash flows. Some undertakings do not work out the expected coupon payment for each future year and the notional value at maturity and then discounting these cash flows.</p>
Valuation of technical provisions and reinsurance recoverables	3	The expected default of the reinsurers as part of the calculation of the Reinsurance recoverables under Solvency II valuation principles (for the input into the economic balance sheet in Column H of the <i>1.Valuation</i> tab of the main workbook) was not being taken into consideration by some undertakings. The expected default of the reinsurers should be included as part of the total reinsurance recoverables in the economic balance sheet and excluded from the calculation of the counterparty default risk, so as to avoid double counting when calculating the counterparty default risk charge in one year's time, as part of the SCR calculation in the <i>SF.SCR_G</i> tab of the main workbook.
	4	Some undertakings applied pro-rata calculations based on the QIS5 2009 results to estimate the technical provisions, risk margins and reinsurance reserves to reflect the 2011 base portfolio.
	5	<p>Risk Margin can only be calculated as follows:</p> <ul style="list-style-type: none"> • Separately for technical provisions and reinsurance recoverables • For the best estimate net of reinsurance recoverables <p>It was noted that some undertakings calculated the risk margin on the best estimate only and not the reinsurance recoverables.</p>
	6	The best estimate value of technical provisions was sometimes calculated as the sum of the value of the technical provisions under Solvency I plus an adjustment which the undertaking inferred was the best estimate value.

Subject	Comment number	Description
	7	<p>Most companies used either the simplification method 3 (<i>Approximate the whole SCR for each future year, e.g. by using a proportional approach</i>) or simplification method 5 (<i>Approximate the risk margin by calculating it as a percentage of the best estimate</i>) in calculating the risk margin. For the majority of companies, the MFSA had to revert with minor queries as minor errors were identified. These errors could have been avoided if there was an independent checker of the results.</p> <p>With regards to simplification method 5, the fixed percentages used in the calculation were previously provided in the QIS5 technical specifications. Going forward, undertakings that intend to use this method to calculate the risk margin, will need to justify and document the rationale for the percentages used by line of business. This justification and rationale should consider any specific characteristics of the portfolios being assessed. This again highlights the importance of internal validation.</p>
	8	For some companies, the definition of the residual market risk used in the calculation of the risk margin remains unclear.
Stressing exposures under the different risk modules of the SCR calculation	9	<p>Short-term bank deposits shall only be subjected under the counterparty default risk module (rather than under spread and concentration risk sub-modules) if and only if the deposits are liquid and callable on demand with no penalties to the undertaking.</p> <p>Short-term bank deposits have been subjected to the counterparty default risk module by many undertakings, rather than the spread and the concentration risk sub-modules, even though the above criteria has not been met by these undertakings.</p>
	10	Undertakings did not always provide profit projections to substantiate that the adjustment for deferred tax is recoverable within a reasonable timeframe.
	11	<p>Some undertakings have input the cash flows for the individual bonds incorrectly. Instead of inputting the coupon values for each future year and notional value at maturity, the market value of the bond as at 31st December 2011 in each future year depending on the maturity has instead been input.</p> <p>For example, if the market value of a bond is €100k as at 31st December 2011 and it matures in 2 years' time, the market value of €100k is input in the cash flow column for year 2.</p>
	12	The dirty price of the bond, which is the clean price plus the accrued interest, should be subjected in the relevant risk modules and not just the clean price.
	13	A number of undertakings have applied the Solvency I figures to the different risk modules as opposed to the Solvency II figures.
	14	Certain undertakings took the approach of selecting certain risk modules that appeared less penal rather than performing the calculation as required by the technical specifications.
	15	Following the MFSA's review comments, several undertakings changed figures in cells which were correct and had not been queried. This would result in a re-review of all the figures which is very time consuming.
Re-submissions of the Standard Formula workbook	16	A number of undertakings made changes to the helper tabs without reflecting the changes in the relevant sections of the <i>SF.SCR_G</i> tab contained in the main workbook.

Subject	Comment number	Description
Product segmentation under the Solvency II principles	17	The Solvency I technical provisions split by class of business populated in the standard formula main results sheet for many undertakings did not reconcile to the respective figures reported in the business of insurance statements.
Inconsistencies across tabs of the main standard formula workbook and across other sources (such as the audited financial statements/management accounts and the business of insurance statements)	18	<p>Various inconsistencies across the tabs of the main standard formula workbook were observed. For example:</p> <p>The net PCO calculated in the <i>I.Geographical Diversification</i> tab (when used) is based on reinsurance recoverables that were gross of default. Therefore, they are not the same as the net PCO calculated in the <i>I.QIS5 insurance obligations</i> tab.</p> <p>The best estimate of technical provisions presented in the <i>I.Valuation</i> tab as part of the economic balance sheet did not reconcile to the respective figures in the <i>I.QIS5 insurance obligations</i> tab.</p> <p>The net written and net earned premiums presented in the <i>I.Premiums</i> tab did not reconcile against the <i>I.Geographical Diversification</i> tab when used.</p>

7. Conclusions

Our view is that some undertakings are more prepared than others. Based on the recent submissions, the undertakings generally still have a lot to do to get prepared in respect of the Pillar I requirements and to further understand the standard formula calculations. It is also imperative that undertakings have in place a checking and independent validation process internally to reduce the number of errors.

The 2012 MFSAs standard formula exercise enabled the MFSAs to understand better the risks of the undertakings and understand the undertakings' and insurance managers' approach to calculating the solvency requirements under Solvency II and completing the standard formula templates. This exercise has also highlighted that further work is required to understand the Solvency II principles when calculating the solvency requirements using the standard formula, especially since the technical specifications continue to change until the full implementation of Solvency II.

The MFSAs intend to organize standard formula workshops in May 2013 to help undertakings better understand the standard formula requirements under Solvency II.