MILLIMAN RESEARCH REPORT

Analysis of Dutch insurers' Solvency and Financial Condition Reports in European context

Year-end 2016

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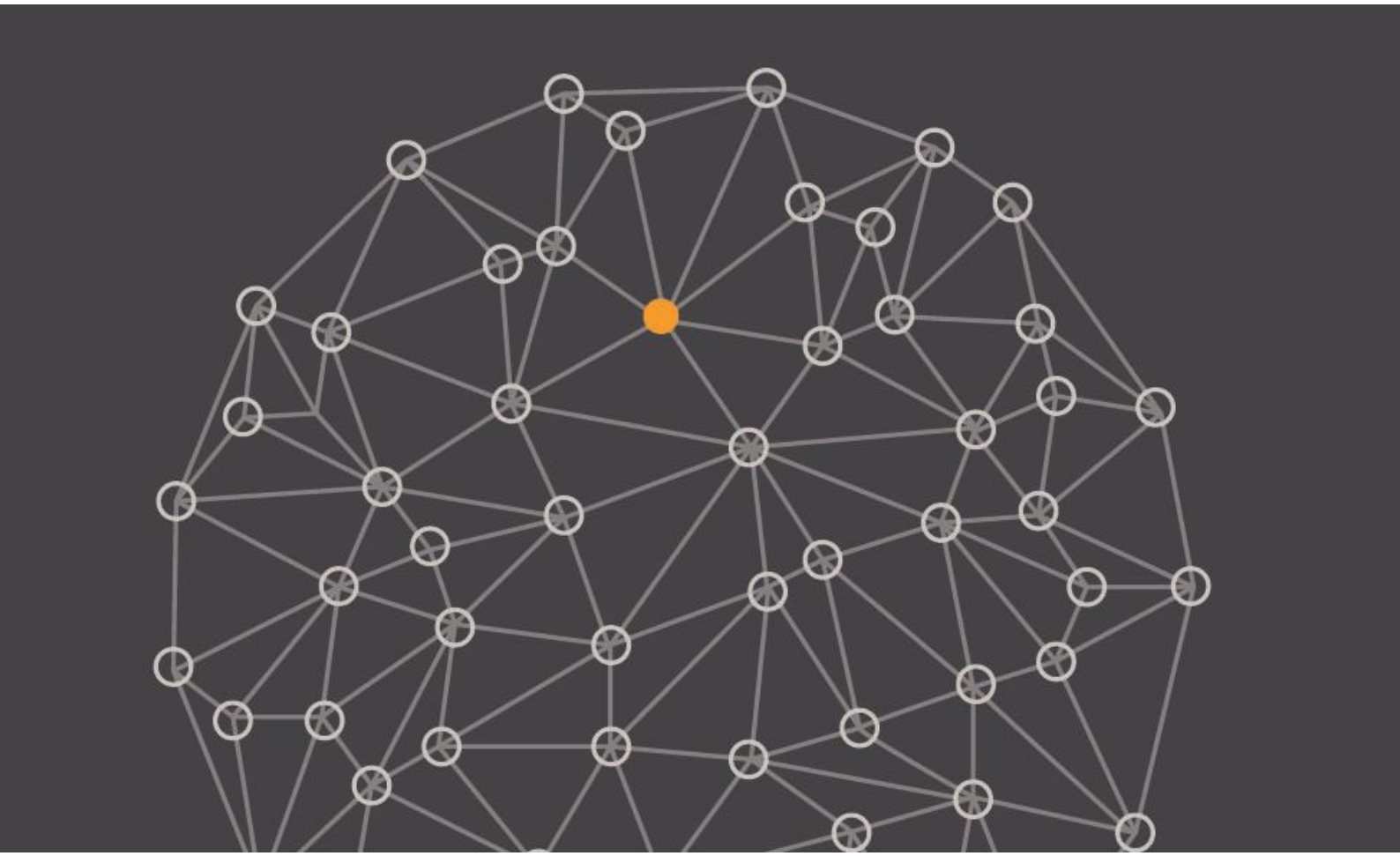

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Management Summary

In May 2017, the first Solvency and Financial Condition Reports (SFCRs) were published for year-end 2016. The SFCRs contain a significant amount of information, including details of a company's performance over the reporting period, systems of governance, risk profile, valuation basis and capital requirements.

This report provides a summary of the key solvency information of the main life and non-life insurance entities in the Netherlands, based on these SFCRs. The report focusses on the largest insurance entities in the Netherlands, as well as the main figures of the largest consolidated insurance groups.

This report includes an overview of the factors determining the Solvency Capital Requirement (SCR) ratio, providing an overview of the composition of both the SCR and the own funds of these insurance entities, as well as an analysis of the SCR ratio. For life insurers 87% of the Dutch market in terms of gross written premiums is covered, and for non-life insurers 74% of the market is covered.

Our sample of Dutch life insurers is shown to be well capitalised, having a weighted average solvency ratio[1] of 156%, with no life insurer having a solvency ratio below 100%. On an aggregate level, the sample of life insurers has €31.1 billion eligible own funds to cover €20.0 billion of Solvency II required capital. The solvency ratio of Dutch insurers is lower than the average of European life insurers in our sample (187%).

The Dutch non-life insurers in our sample are also well capitalised, with an average solvency ratio of 151%. On aggregate, our sample of non-life insurers has €4.8 billion of eligible own funds covering €3.1 billion of Solvency II required capital. It is notable that this is lower compared to the Dutch healthcare insurers that are not included in this sample (196%), and also to the European non-life insurers (184%).

The assets, liabilities and underwriting for life and non-life business in the Netherlands are also considered in this report, providing further insight into the solvency positions and stability of the Dutch insurance entities considered.

We hope you enjoy reading this report.

[1] The solvency ratio refers to the Solvency II coverage ratio.

Introduction

BACKGROUND

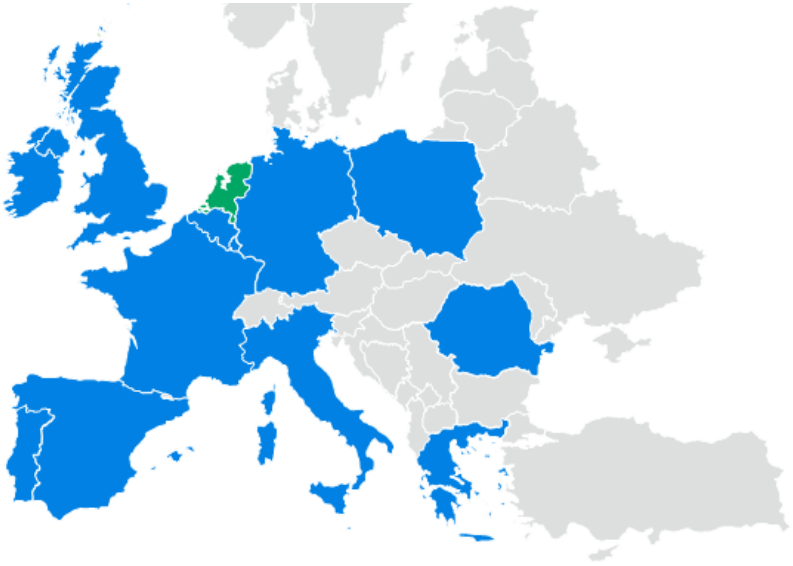
Solvency II (SII) came into effect on 1 January 2016 and introduced a number of disclosure requirements for European insurers. Under the new requirements, the majority of European insurers were required to publish detailed Solvency and Financial Condition Reports (SFCRs) for the first time in May 2017.[2] The SFCRs contain a significant amount of information on the insurance companies, including details on their business performances, risk profiles, balance sheets and capital positions, 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.

This report is structured as follows: the first section provides a detailed view of the Dutch insurance market, including life business, non-life business and an overview of the insurance groups in the Netherlands. The solvency position is presented, as well an overview of its composition and the methods used to calculate this position. Further, we provide an analysis of the loss-absorbing capacity of deferred tax (LACDT) positions and the compositions of the insurance entities considered. The next two sections of the report provide a comparison of the European insurance market for life and non-life insurance, focussing on the relative positions of the Dutch insurers to the European market.

EUROPEAN MARKET COVERAGE

The coverage in terms of market share varies by country in the EU. For some countries, such as Ireland, the UK and Luxembourg, the life companies included in our sample represent over 90% of the life market. For others, such as the Netherlands, Belgium and Romania, the coverage is slightly less, at 70% to 90% of the life market. Our analysis is based on insurers that are primarily focussed on selling life insurance business and as a result some composite companies were excluded from the analysis. For this reason, market share is lower in some territories such as Italy. In some other territories, such as Portugal, market share is again lower due to delays in the publication of the SFCRs.

- Belgium (BE)
- France (FR)
- Germany (DE)
- Greece (GR)
- Ireland (IE)
- Italy (IT)
- Luxembourg (LU)
- Netherlands (NL)
- Poland (PL)
- Portugal (PT)
- Romania (RO)
- Spain (ES)
- United Kingdom (GB)



Our European analysis of the non-life market covers 140 companies from all the same countries but Portugal. Our analysis is based on non-life insurers that are primarily focussed on selling non-life insurance and as a result some composite companies were excluded from the analysis. Also note that we excluded insurers that primarily sell health insurance (non-similar to life health business) as they have been covered in our European health analysis report.[3] However, for comparison reasons we have included some relevant figures from this report.

[2] Group SFCRs were published in July 2017 and some insurers were required to publish their SFCRs earlier where they had a year-end reporting date between 30 June 2016 and 31 December 2016.

[3] Clarke, S. et al. (12 December 2017). Analysis of Insurers' First Set of Solvency and Financial Condition Reports: European Health Insurers. Milliman Research Report. Retrieved 1 April 2018 from http://www.milliman.com/insight/2017/Analysis-of-insurers-first-set-of-Solvency-and-Financial-Condition-Reports-European-health-insurers/.

DUTCH MARKET COVERAGE

In selecting the companies included in this analysis, we focussed on a subset of insurers in the Dutch market. Our focus was on life and non-life solo entities: in total, 11 life solo entities and 10 non-life solo entities. Note that this sample might deviate slightly from the ones shown in the European comparison sections. Additionally, we focus on seven insurance groups. The entities and groups were selected to ensure that all of the most significant insurers in the Dutch life and non-life market were included. Our sample of solo companies pursuing primarily life business in the Netherlands represents circa 87% of the total gross written premiums (GWP) of the Dutch life market in 2016. For non-life, our sample represents circa 74% of the GWP of the Dutch non-life market in 2016. Appendix A contains a list of all the Dutch solo entities and groups that were included in our analysis.

UNDERLYING DATA

The analysis underlying this report focusses on the quantitative information contained in the public QRTs. Where relevant we have also studied the SFCRs to gain additional insights into some companies, in particular if they displayed characteristics that differed from market norms. The focus of this report is the Dutch insurance market, the main life insurance entities, non-life insurance entities and insurance groups. Note that all figures published in this report have been converted into euros, using exchange rates as at 31 December 2016, with the unit stated where applicable. The numbers in the report are presented in the currency euros.

Analysis of Dutch life and non-life insurance market

MAIN DESCRIPTIVES OF UNDERTAKINGS IN OUR SAMPLE

In the Netherlands, life and non-life business are written in different legal entities, but are usually consolidated to combined groups. In our sample, we have covered 11 solo life companies and 10 non-life companies of the large insurance groups. An overview of the mapping between the solo insurance entities and the groups is provided in Appendix A. Note that healthcare insurers (with health business non-similar to life) are not considered in this report, but are discussed in our European health analysis report.[4]

In Figure 1 and Figure 2, an overview is given of the gross written premium (GWP) per undertaking for the life and non-life companies in our sample. From these figures, it is clear that Nationale Nederlanden Levensverzekering Maatschappij (NN Life) is the largest of the life insurance companies of our life sample (with a 20% market share in terms of gross written premiums with respect to our sample) and Achmea Schadeverzekeringen is the largest of the non-life insurance companies of our non-life sample (with a 32% market share in terms of gross written premiums with respect to our sample).

FIGURE 1: GROSS WRITTEN PREMIUMS PER LIFE INSURER

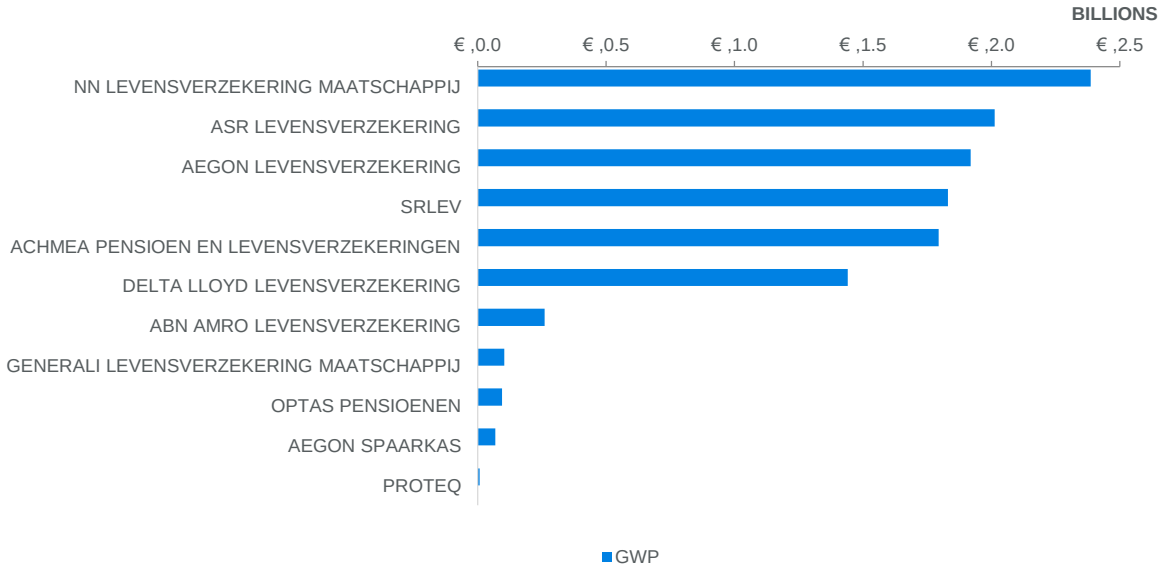
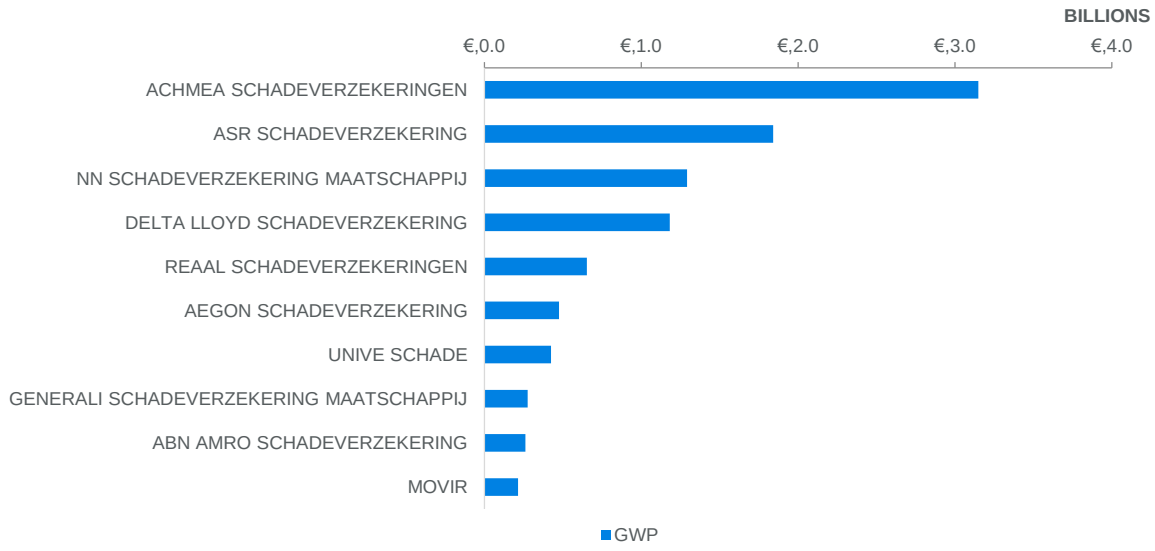


FIGURE 2: GROSS WRITTEN PREMIUMS PER NON-LIFE INSURER



[4] Clarke, S. et al., ibid.

The two largest life insurers in terms of total assets are NN Life and Aegon Levensverzekeringen. The two largest non-life insurers in terms of total assets are Achmea Schadeverzekeringen and ASR Schadeverzekering.

Moreover, it is noteworthy to mention that the level of assets compared to premium volume differs significantly within the sample. Especially non-life companies with a high share of health business similar to life (i.e., disability products) have relatively high technical provisions, compared to premium levels. In addition, as expected, non-life insurers typically have a higher premium volume relative to their total assets compared to life insurers.

Within our life sample we note that ASR Levensverzekering has relatively low technical provisions and assets compared to its premium level and therefore has a much lower market share in terms of gross technical provisions and assets than in terms of gross written premiums.

FIGURE 3: GROSS TECHNICAL PROVISIONS AND TOTAL ASSETS PER LIFE INSURER

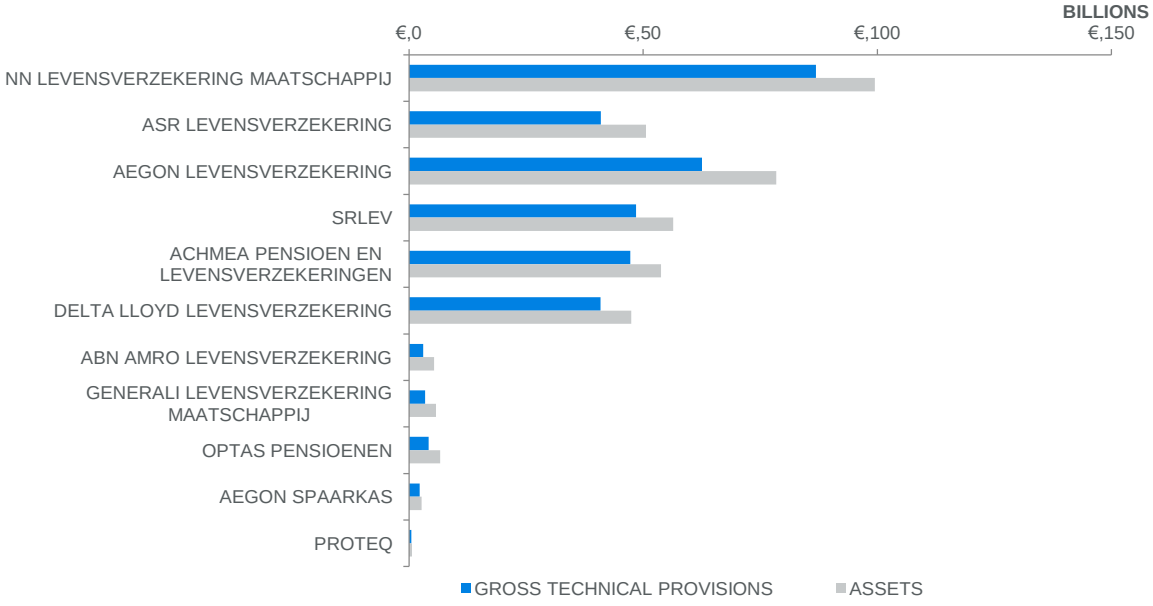
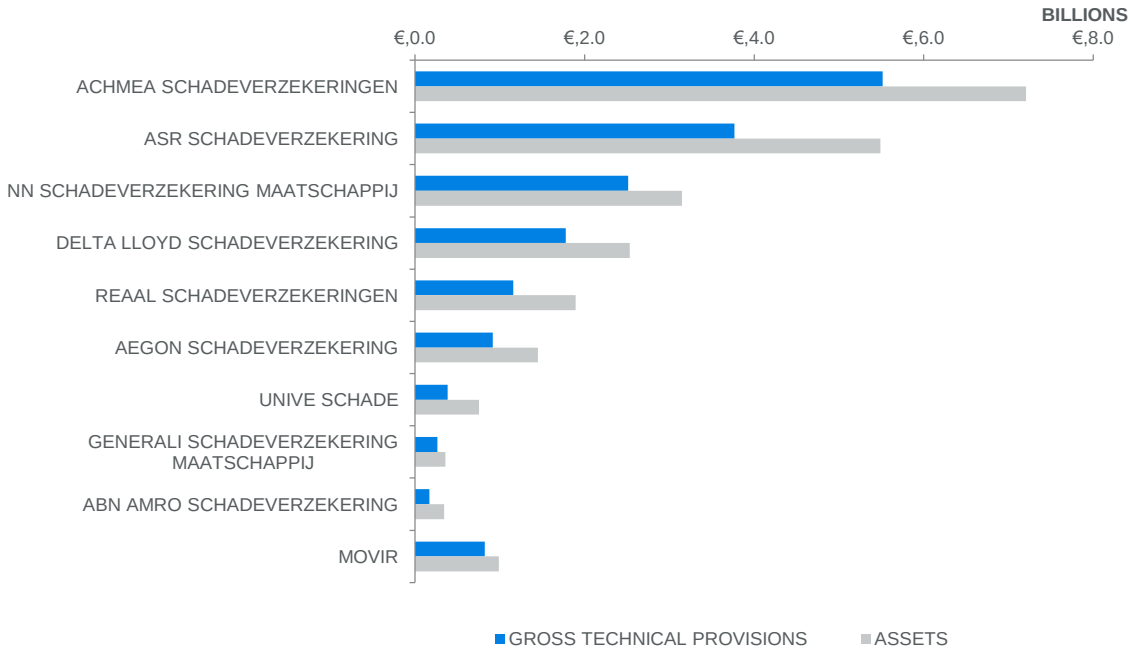


FIGURE 4: GROSS TECHNICAL PROVISIONS AND TOTAL ASSETS PER NON-LIFE INSURER



SOLVENCY COVERAGE RATIOS: HOW SOLVENT IS THE DUTCH MARKET?

SII ratios: Life insurance entities

On an aggregate level, life insurance undertakings from our sample are well capitalised, with a weighted average solvency coverage ratio (Eligible Own Funds / Solvency Capital Requirement) equal to 156% and an average Minimum Capital Requirement (MCR) ratio of 349% (Figure 5). None of the life insurers have a solvency ratio below 100%. Based on these numbers, Optas (540%), Aegon Spaarkas (440%), NN Life (203%) and ASR Levensverzekering (182%) have the highest solvency ratios among the life insurers, compared to ABN AMRO Levensverzekeringen (120%), Aegon Levensverzekering (120%) and Generali Levensverzekering (115%) with the lowest solvency ratios.

FIGURE 5: SOLVENCY II FIGURES, DUTCH LIFE INSURERS AT YEAR-END 2016 (€ MILLIONS)

NAME UNDERTAKING	NAME PARENT	ELIGIBLE OWN FUNDS TO SCR	SCR	SCR RATIO	MCR RATIO	RANK SCR RATIO
NN LEVENSVERZEKERING MAATSCHAPPIJ	NN	7,645	3,771	203%	397%	3
ASR LEVENSVERZEKERING	ASR	4,825	2,654	182%	433%	4
AEGON LEVENSVERZEKERING	AEGON	3,863	3,213	120%	328%	10
SRLEV	VIVAT	3,424	2,295	149%	247%	6
ACHMEA PENSIOEN EN LEVENSVERZEKERINGEN	ACHMEA	3,113	2,389	130%	269%	8
DELTA LLOYD LEVENSVERZEKERING	DELTA LLOYD	2,545	1,891	135%	248%	7
OPTAS PENSIOENEN	AEGON	1,212	224	540%	1575%	1
AEGON SPAARKAS	AEGON	225	51	440%	1260%	2
PROTEQ LEVENSVERZEKERING	VIVAT	110	61	181%	725%	5
ABN AMRO LEVENSVERZEKERING	DELTA LLOYD	3,863	3,213	120%	328%	9
GENERALI LEVENSVERZEKERING MAATSCHAPPIJ	GENERALI	221	193	115%	399%	11
ALL		**31,044**	**19,954**	**156%**	**349%**	

SII ratios: Non-life insurance entities

The average solvency ratio of the non-life insurers (Figure 6) is equal to 151%. The average MCR ratio is 346%. Of the non-life insurers, ABN AMRO Schadeverzekering (208%), ASR Schadeverzekering (180%), Aegon Schadeverzekering (159%) and Reaal Schadeverzekeringen (152%) have the highest solvency ratios. Movir (129%), NN Schadeverzekering (127%) and Generali Schadeverzekering (111%) have the lowest solvency ratios.

FIGURE 6: SOLVENCY II FIGURES, DUTCH NON-LIFE INSURERS AT YEAR-END 2016 (€ MILLIONS)

NAME UNDERTAKING	NAME PARENT	ELIGIBLE OWN FUNDS TO SCR	SCR	SCR RATIO	MCR RATIO	RANK SCR RATIO
ACHMEA SCHADEVERZEKERINGEN	ACHMEA	1,029	750	137%	305%	6
ASR SCHADEVERZEKERING	ASR	1,389	773	180%	399%	2
NN SCHADEVERZEKERING MAATSCHAPPIJ	NN	485	381	127%	283%	9
DELTA LLOYD SCHADEVERZEKERING	DELTA LLOYD	471	345	137%	281%	7
REAAL SCHADEVERZEKERINGEN	VIVAT	554	365	152%	362%	4
AEGON SCHADEVERZEKERING	AEGON	395	249	159%	628%	3
UNIVE SCHADE	UNIVE	232	154	151%	341%	5
GENERALI SCHADEVERZEKERING MAATSCHAPPIJ	GENERALI	74	66	111%	247%	10
ABN AMRO SCHADEVERZEKERING	DELTA LLOYD	135	65	208%	462%	1
MOVIR	NN	76	59	129%	287%	8
ALL		**4,764**	**3,148**	**151%**	**346%**	

SII ratios: Dutch insurance groups

Of the Dutch insurance groups (Figure 7), the average solvency ratio is equal to 201% and the average MCR ratio 411%. The groups with the highest capitalisations are Unive Group (324%), NN Group (241%) and ASR Group (185%). Aegon Group (157%) and Delta Lloyd Group (143%) have the lowest solvency ratios. It is notable that the group solvency ratios are higher than the solvency ratios of the corresponding solo entities. Reasons for this include: entities within the group that are outside the Netherlands, the omission of health insurers, and the double-leverage effect[5] occurring in group entities. Moreover, groups benefit from diversification between life and non-life business line and own funds directly related to the group.

FIGURE 7: SOLVENCY II FIGURES, DUTCH INSURANCE GROUPS AT YEAR-END 2016 (€ MILLIONS)

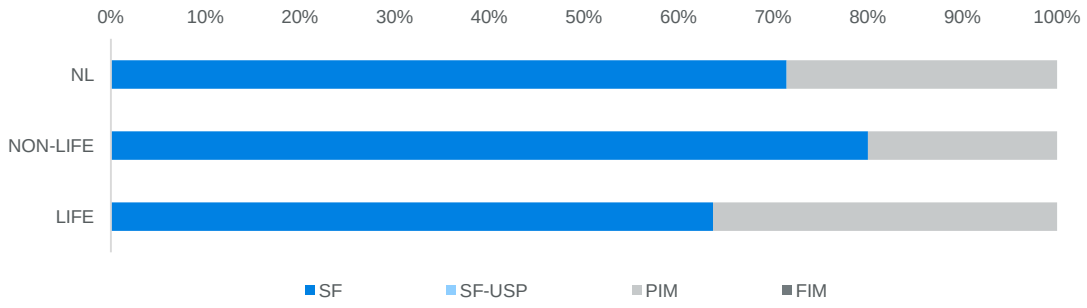
NAME INSURANCE GROUP	ELIGIBLE OWN FUNDS TO SCR	SCR	SCR RATIO	MCR RATIO	RANK SCR RATIO
ACHMEA GROUP	8,345	6,757	181%	278%	4
ASR GROUP	6,299	5,526	185%	444%	3
NN GROUP	13,149	10,803	241%	460%	2
DELTA LLOYD GROUP	4,002	2, 839	143%	223%	7
VIVAT GROUP	4,319	3,291	175%	283%	5
AEGON GROUP	18,119	4,417	157%	238%	6
UNIVE GROUP	676	676	324%	952%	1
ALL	**54,910**	**34,310**	**201%**	**411%**	

It is useful to note that the life and non-life insurers of NN Group, Aegon Group and Achmea Group do not apply the Solvency II (SII) standard formula for their capital calculations, but rather use a partial internal model (PIM). All other Dutch companies apply the standard formula.

ANALYSES OF SCR METHOD USED

All but three insurance groups in the Dutch market (Aegon Group, NN Group and Achmea Group) use the Solvency II standard formula (SF) to calculate their SCRs. In terms of solo entities in our sample, 64% of all life insurers versus 80% of all non-life insurers did use the Solvency II SF. Of those that did not use the SF, a partial internal model (PIM) was used instead. No undertaking-specific parameters (USPs) or full internal models (FIMs) are being used yet. The four life insurers using a PIM in our sample account for 33% of total gross written premiums in the total Dutch life market, whereas the two non-life insurers using a PIM in our sample account for 11% of total gross written premiums in the total Dutch non-life market.

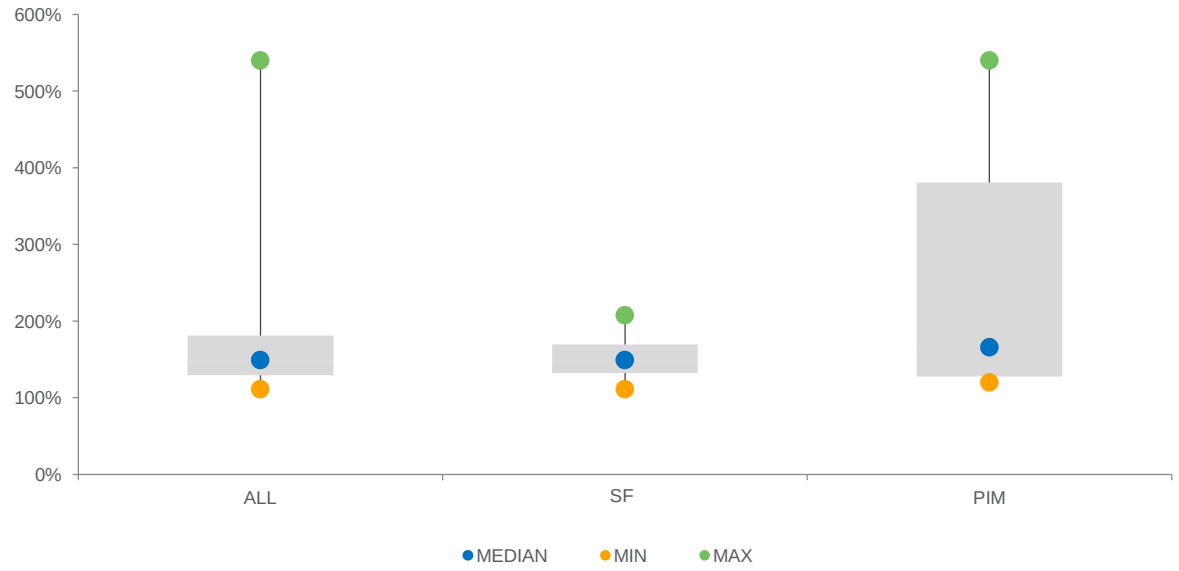
FIGURE 8: DISTRIBUTION OF THE SCR METHOD USED BY SEGMENT IN OUR DUTCH SAMPLE



The average SCR ratio of undertakings using a PIM is higher than the average of the insurance companies using the standard formula. There is a wide range of SCR ratios for undertakings. Four insurers show SCR ratios of over 200%, with Optas Pensioenen having the highest at 540%. Figure 9 shows how the SCR ratio is distributed within the sample of insurers.

[5] For example, where group level provides a subordinated loan to one of its subsidiary entities, increasing the eligible own funds of that subsidiary.

FIGURE 9: SCR RATIOS AND SCR CALCULATION METHODS ACROSS OUR DUTCH SAMPLE



ANALYSIS OF SCR AND MCR: WHERE IS THE RISK

Undertakings are required to cover all risks affecting their balance sheets, i.e., their solvency positions. In Figure 10, the breakdown of the SCR is shown on an aggregate basis for SF undertakings. Market risk is the highest risk, covering 56% of the overall SCR. The second-highest risk is life underwriting, which covers 51%, followed by counterparty default risk (15%). Diversification benefit accounts for 39% of total SCR.

FIGURE 10: BREAKDOWN OF SCR BY RISK MODULE ON AN AGGREGATE BASIS (FOR SF COMPANIES)

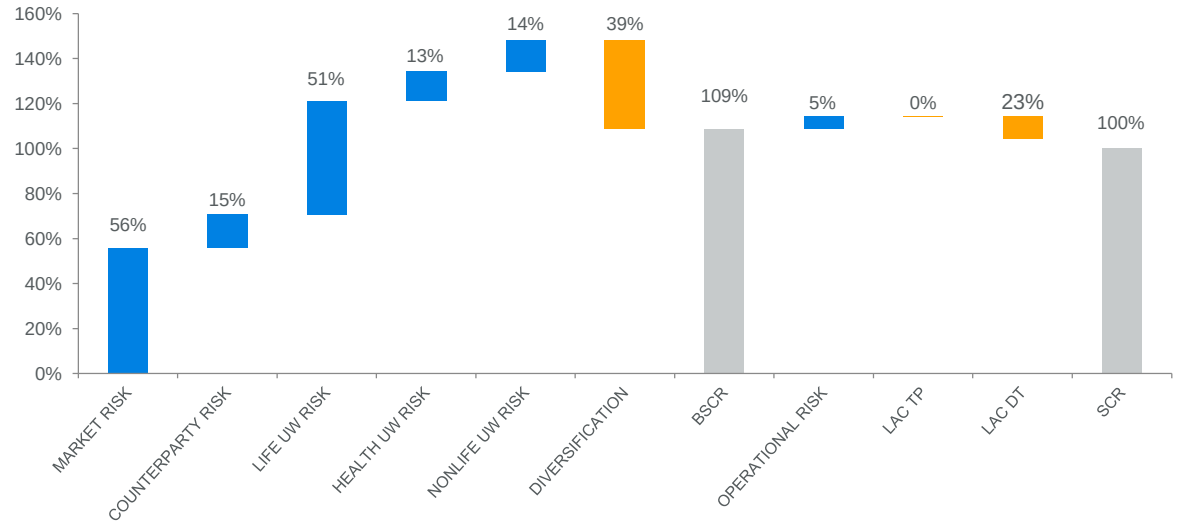
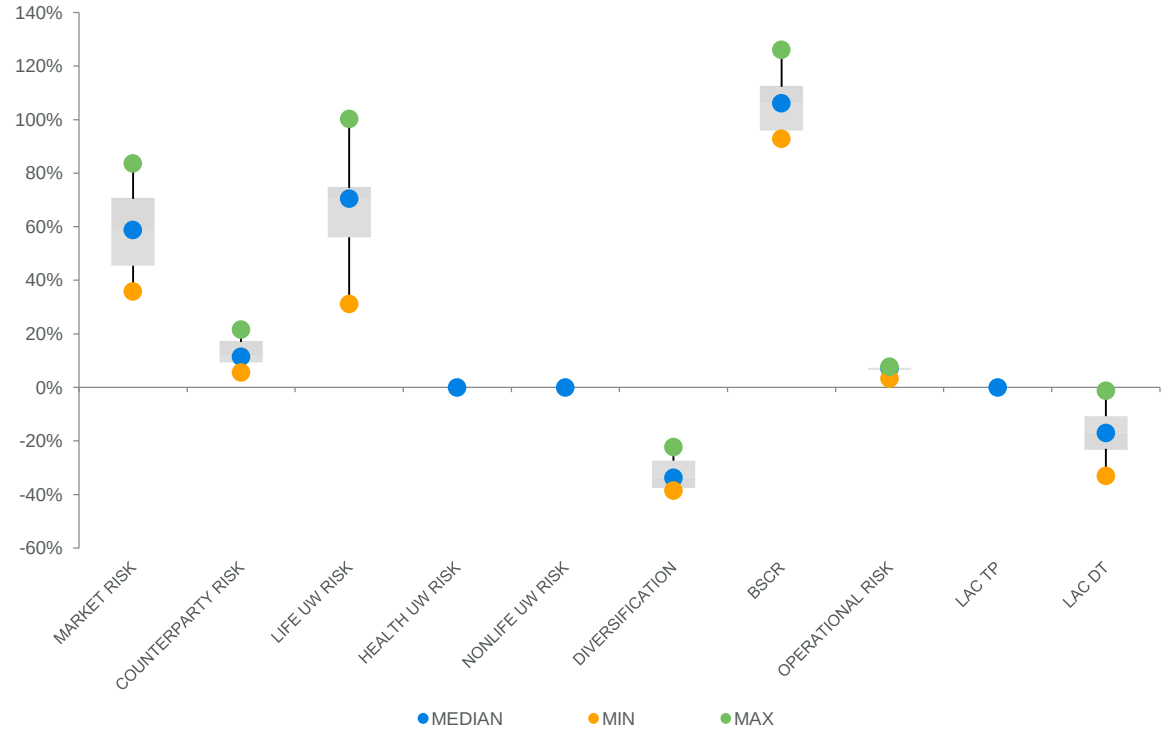


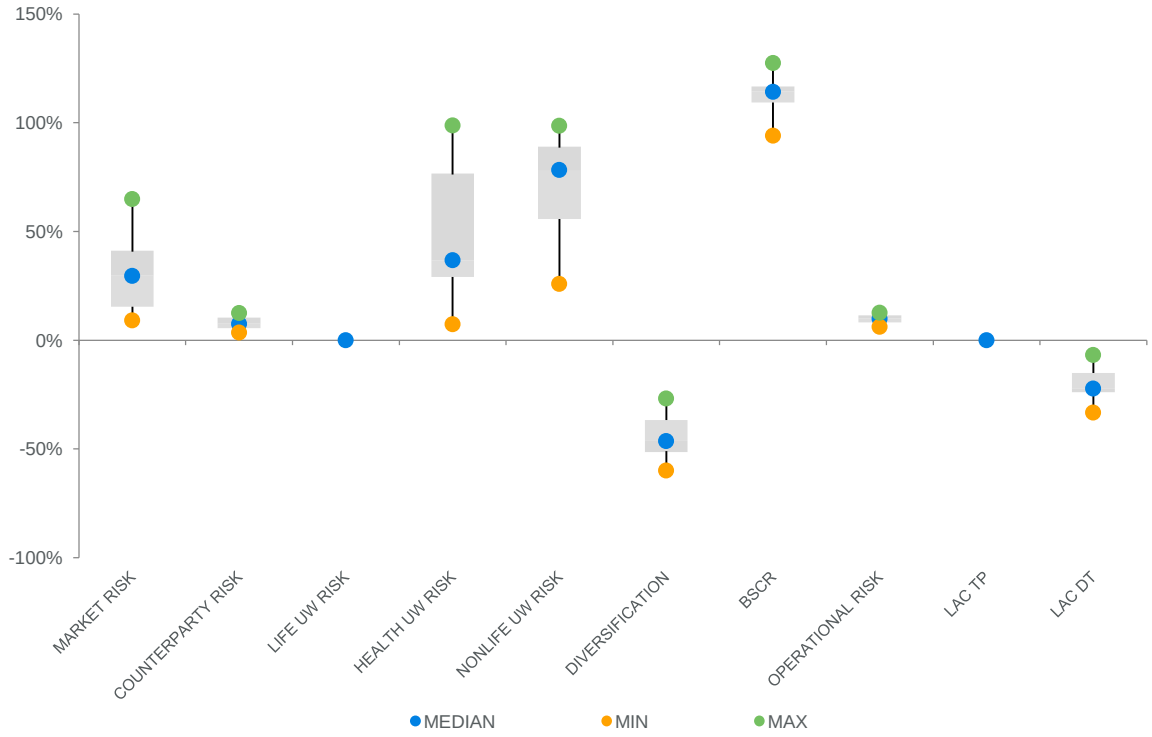
Figure 11 and Figure 12 provide further illustration of the risk drivers in the sample considered (for life companies and non-life companies, respectively). As mentioned above, market risk and life underwriting risks are clearly the highest risk drivers, showing the widest ranges (i.e., differences among insurers). In the Netherlands, the loss-absorbing capacity of technical provisions (LACTP) is negligible (0%), as hardly any of the life business has discretionary profit sharing. Further, we observe that the loss-absorbing capacity of deferred tax (LACDT) is equal to 23% of the SCR. The LACDT is analysed in the section below on Analysis of Dutch Loss-Absorbing Capacity of Deferred Tax.

FIGURE 11: DISTRIBUTION PER RISK MODULE FOR DUTCH LIFE INSURERS APPLYING SF



Note: A detailed overview of these numbers and the entities that have been included can be found in Appendix B.

FIGURE 12: DISTRIBUTION PER RISK MODULE FOR DUTCH NON-LIFE INSURERS APPLYING SF



Note: A detailed overview of these numbers and the entities that have been included can be found in Appendix B.

FIGURE 13: SCR BREAKDOWN BY INSURANCE GROUPS

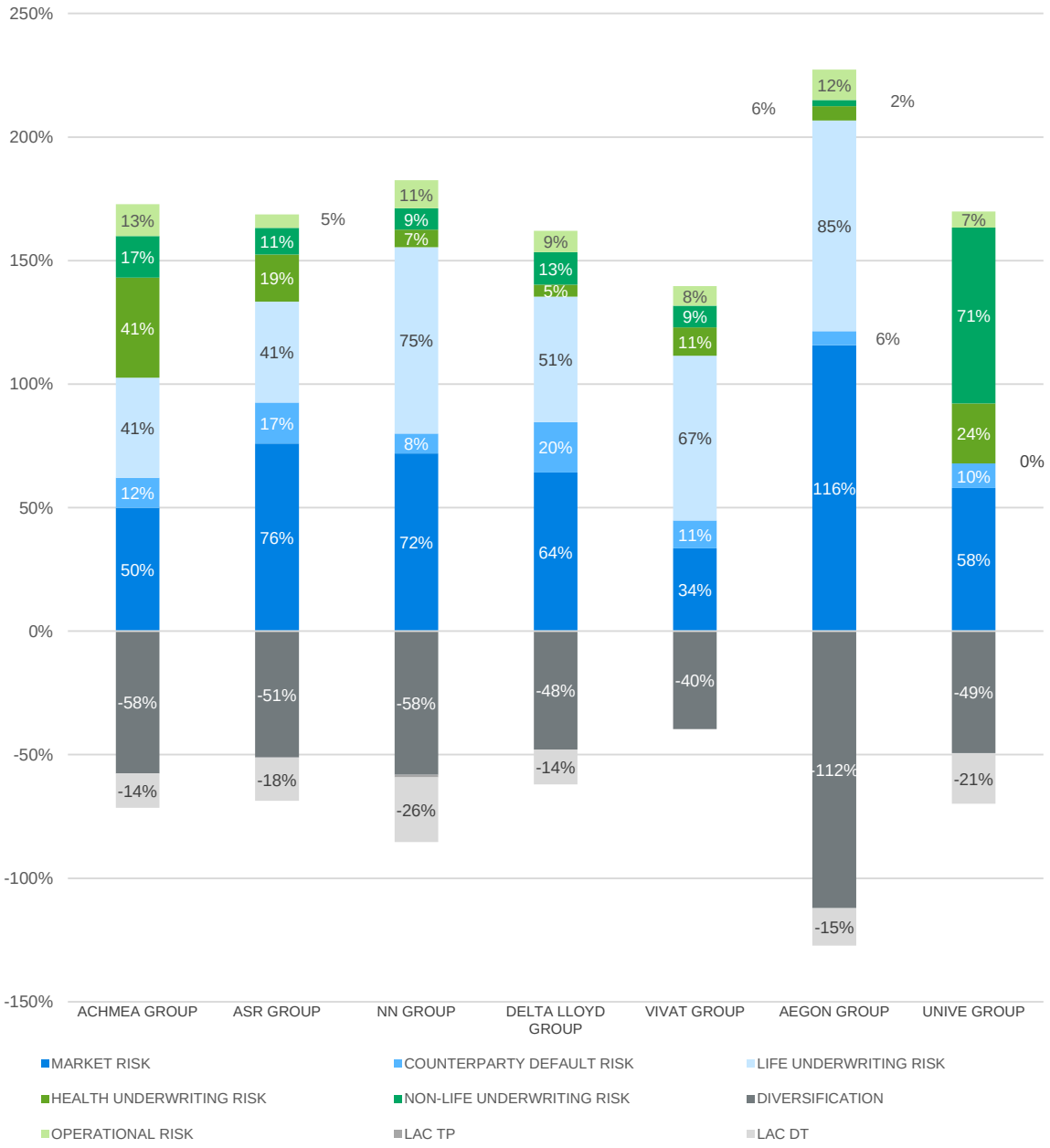


Figure 13 provides an overview of the breakdown of the SCR by risk, for the insurance groups considered. The following observations can be made:

- For most insurance groups, market risk is the largest sub-risk. Only VIVAT Group and Univé Group have higher life and non-life underwriting risks, respectively.
- Aegon Group (116% of SCR), ASR Group (76%) and NN Group (72%) have the highest proportion of market risk, and therefore have the highest upside potential, while also being the most susceptible to market risk.
- Life risk is highest at Aegon Group (85%), NN Group (75%) and VIVAT Group (67%).
- Achmea Group (41%), Univé Group (24%) and ASR Group (19%) have the highest portion of health risks.
- Diversification benefits are highest at Aegon Group (112%), Achmea Group and NN Group are next-highest (both 58%).
- The LACDT of NN Group (26%) is highest, followed by Univé Group (21%) and ASR Group (18%). VIVAT Group has LACDT equal to zero.

ANALYSIS OF DUTCH LOSS-ABSORBING CAPACITY OF DEFERRED TAX

LACDT represents a significant part of the SCR calculation. In the Netherlands, the LACDT can add up to 25% of the total basic SCR (BSCR). The Solvency II regulations, the Delegated Acts, are currently being reviewed by all stakeholders. By January 2018 the feedback that had been given to the European Insurance and Occupational Pensions Authority (EIOPA) showed that LACDT is a main topic of interest.

The LACDT can be substantiated by:

- Taxable profit in the year the shock occurs
- Taxable profit in the calendar years prior to the year in which the shock occurs ('carry back')
- Deferred tax liability (DTL) on the SII balance sheet
- Expected taxable profits after shock ('carry forward')

In addition, tax planning can help companies manage the timing of profit recognition to optimise carry-forward/carry-back rules. In the case of a deferred tax asset (DTA), insurers are obligated to demonstrate that any increase of the DTA due to a loss is recoverable by tax payments as a result of future profits. In the Netherlands, the tax rules allow for compensating taxable losses in a year by profits one year back and nine years ahead. Additionally, Solvency II offers room to think of management actions that could compensate for these losses.

The main discussion for EIOPA is on the expected future profits after shock. There is discussion on the new business that can be taken into account, as well as applicable future management actions.

LACDT: Life insurance entities

In Figure 14, an overview is given of the level of LACDT for the main life insurance entities in the Netherlands. The following conclusions can be drawn:

- Almost all life entities have a DTA position, barring Aegon Spaarkas and ABN AMRO Life. Thus LACDT needs to be nearly fully substantiated by future expected profits.
- ABN AMRO Life has the highest LACDT (33.1% of SCR), mostly substantiated by the DTL.
- NN Life has the highest LACDT (29.9% of SCR), fully substantiated by future profits. SRLEV has the lowest LACDT of zero, probably caused by a high DTA, which primarily needs to be recovered.
- Although Achmea Life has a relatively high DTA, it is able to demonstrate a relatively high LACDT from future profits (DTA plus LACDT recovery very high).
- As can be seen in Figure 15 below, the average LACDT in the whole life insurance market in the Netherlands is 8% of the SCR.
- It is apparent the level in which life companies can demonstrate future profits differs enormously, consequently affecting the SCR ratio differently.
- Almost all life entities depend fully on future profits for the calculation of the LACDT.
- Any changes in regulations on allowance of future profits in LACDT will directly affect the level of LACDT and thus the SCR ratio.

FIGURE 14: LACDT AND SCR FOR LIFE INSURERS

LIFE COMPANIES	DTA	DTL	LAC DT	SCR (SII)
AEGON LEVEN	4,528	0	6,669	32,127
AEGON SPAARKAS	0	298	118	511
AEGON OPTAS	0	0	0	2,245
NN LEVEN	7,929	0	11,287	37,710
DL LEVEN	3,170	0	2,622	18,907
ASR LEVEN	3,975	0	4,480	26,536
ACHMEA LEVEN EN PENSIOENEN	10,320	0	4,807	23,889
SRLEV	14,734	0	0	22,945
PROTEQ	357	0	8	609
ABN AMRO LEVEN	0	650	658	1,989
GENERALI LEVEN	559	147	0	1,930

FIGURE 15: LACDT COMPOSITION FOR LIFE INSURERS

LIFE COMPANIES	LAC DT AS % SCR	LAC DT FROM DTL (IN % SCR)	LAC DT FROM FUTURE PROFITS (IN % SCR)
AEGON LEVEN	21%	0%	21%
AEGON SPAARKAS	23%	23%	0%
AEGON OPTAS	0%	0%	0%
NN LEVEN	30%	0%	30%
DL LEVEN	14%	0%	14%
ASR LEVEN	17%	0%	17%
ACHMEA LEVEN EN PENSIOENEN	20%	0%	20%
SRLEV	0%	0%	0%
PROTEQ	1%	0%	1%
ABN AMRO LEVEN	33%	33%	0%
GENERALI LEVEN	0%	0%	0%

LACDT: Non-life insurance entities

Figure 16 and Figure 17 show the level of LACDT for the main non-life insurers in the Netherlands.

The following observations can be made:

- Almost all non-life insurers have a net DTL position.
- All non-life insurers but AEGON Schade fully utilise the DTL for their LACDTs.
- Achmea Schade and ABN AMRO Schade have the highest LACDT expressed in total SCR (33.3%). In basic SCR terms they have the maximum of 25%.
- NN Schade also has a relatively high LACDT (29.8% of SCR) but demonstrates the largest part through future profits.
- The average LACDT in the whole non-life insurance market in the Netherlands is 17% of the SCR.

FIGURE 16: LACDT AND SCR FOR NON-LIFE INSURERS

NON-LIFE COMPANIES	DTA	DTL	LAC DT	SCR (SII)
UNIVE SCHADE	0	362	115	344
AEGON SCHADE	0	566	551	2,487
NN SCHADE	0	394	1,134	3,807
DL SCHADE	44	0	836	3,452
ASR SCHADE	0	1,257	1,714	7,730
ACHMEA SCHADE	0	2,257	2,501	7,503
REAAL SCHADE	0	271	297	3,653
ABN AMRO SCHADE	0	78	216	648
MOVIR	0	175	159	590
GENERALI SCHADE	35	80	45	662

FIGURE 17: LACDT COMPOSITION FOR NON-LIFE INSURERS

NON-LIFE COMPANIES	LAC DT AS % SCR	LAC DT FROM DTL (IN % SCR)	LAC DT FROM FUTURE PROFITS (IN % SCR)
UNIVE SCHADE	33.3%	33.3%	0.0%
AEGON SCHADE	22.1%	22.1%	0.0%
NN SCHADE	29.8%	10.3%	19.5%
DL SCHADE	24.2%	0.0%	24.2%
ASR SCHADE	22.2%	16.3%	5.9%
ACHMEA SCHADE	33.3%	30.1%	3.3%
REAAL SCHADE	8.1%	7.4%	0.7%
ABN AMRO SCHADE	33.3%	12.0%	21.3%
MOVIR	27.0%	27.0%	0.0%
GENERALI SCHADE	6.7%	6.7%	0.0%
UNIVE SCHADE	33.3%	33.3%	0.0%

LACDT: Dutch insurance groups

In the determination of the loss-absorbing capacity of deferred tax (LACDT), the Dutch insurance groups rely on future profits. Only Vivat Group, that which has a LAC DT of 0, and Univé Group, whose LAC DT is based on the deferred tax liability, do not rely on future profits in determination of their LAC DT.

In Figure 18 and Figure 19 the level of LACDT for the main insurance groups in the Netherlands are shown. The following conclusions can be drawn:

- NN Group has by far the highest LACDT, with 26% of the SCR, which is mainly caused by the high LACDT at NN Leven.
- Of the larger groups, Achmea Group (14.0% of the SCR) and Delta Lloyd Group (14.1% of the SCR) have the lowest LACDTs.
- Apart from Univé Group, all groups have a net DTA position. This leads to the conclusion that the main part of the LACDT for groups needs to be substantiated by future profits.
- Univé Group fully relies on the available DTL for substantiating the LACDT.
- VIVAT Group has set the LACDT to zero, comparable to the solo SRLEV entity.
- The average LACDT of the insurance groups in the Netherlands is 15.2% of the SCR, close to the average of the solo life entities of 14.5%.

FIGURE 18: LACDT AND SCR FOR INSURANCE GROUPS

GROUP COMPANIES	DTA	DTL	LAC DT	SCR (SII)
AEGON GROUP	7,682	1,517	8,395	57,659
NN GROUP	8,475	3,052	12,976	49,987
DL GROUP	5,529	670	3,870	27,530
ASR GROUP	108	0	5,860	33,382
ACHMEA GROUP	8,369	209	6,410	45,921
VIVAT GROUP	14,863	9,887	0	24,664
UNIVE GROUP	0	486	429	2,089

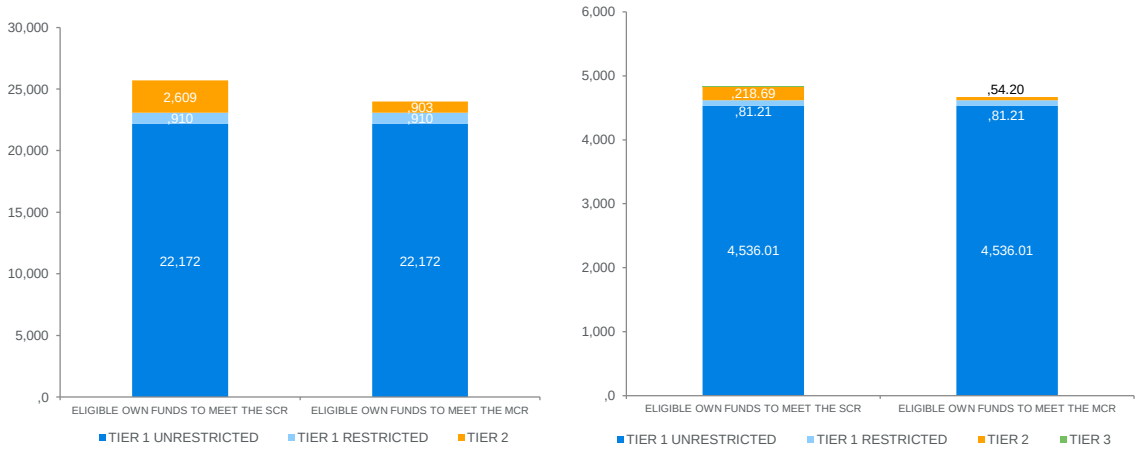
FIGURE 19: LACDT AND SCR FOR INSURANCE GROUPS

GROUP COMPANIES	LAC DT AS % SCR	LAC DT FROM DTL (IN % SCR)	LAC DT FROM FUTURE PROFITS (IN % SCR)
AEGON GROUP	14.6%	2.6%	11.9%
NN GROUP	26.0%	6.1%	19.9%
DL GROUP	14.1%	2.4%	11.6%
ASR GROUP	17.6%	0.0%	17.6%
ACHMEA GROUP	14.0%	0.5%	13.5%
VIVAT GROUP	0.0%	0.0%	0.0%
UNIVE GROUP	20.5%	20.5%	0.0%

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 capital is composed of hybrid debt, while Tier 3 is made up of other capital. As shown in Figure 20, Dutch insurers' own funds are considered of good quality, with over 80% classified in Tier 1 for life insurers and over 90% for non-life insurers. Note that the higher capital eligible for SCR compared to eligible capital for MCR is caused by more Tier 2 and Tier 3 capital covering the SCR.

FIGURE 20: TIERING OF ELIGIBLE OWN FUNDS TO MEET SCR AND MCR (LEFT: LIFE, RIGHT: NON-LIFE)



In Figure 21, the allocation of own funds in basic and ancillary own funds by type is given. It appears that for non-life companies basic funds mainly consist of the reconciliation reserve (76%), followed by ordinary share capital (23%) and DTA (1%). For life companies, basic own funds consist of the reconciliation reserve (47%), ordinary share capital (32%), subordinated liabilities (11%) and DTA (10%).

FIGURE 21: DISTRIBUTION OF OWN FUNDS TIERING FOR THE COMPANIES IN THE SAMPLE (LEFT: LIFE, RIGHT: NON-LIFE)

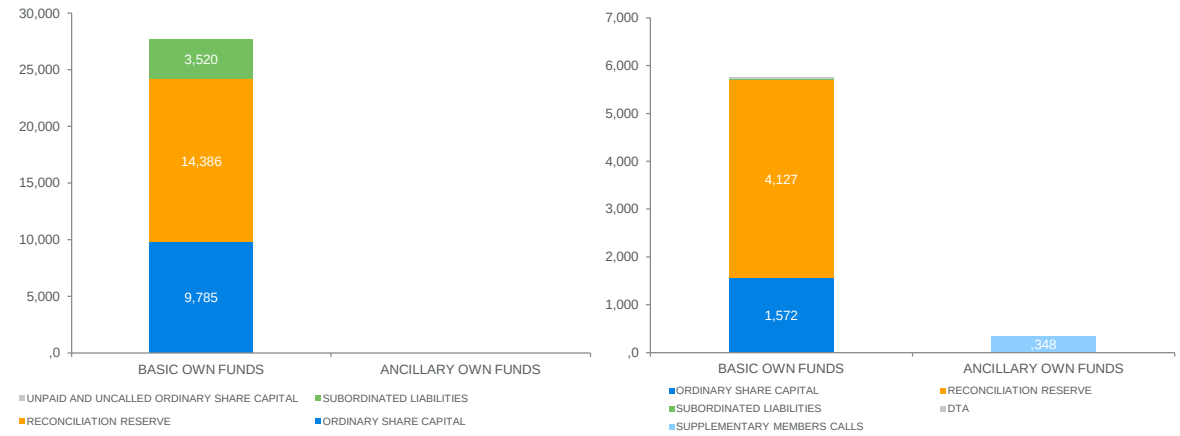


Figure 22 provides a more detailed, statistical view of the tiering structure for the sample of insurers considered. On average, over 80% of the life undertakings' own funds and over 90% of the non-life undertakings' own funds are classified as Tier 1 unrestricted. The non-life entities of Delta Lloyd and VIVAT have lower than 100% of eligible own funds in Tier 1 unrestricted. For the life companies, three have less than 80% of their eligible own funds in Tier 1 unrestricted: Delta Lloyd Levensverzekering (54%), SRLEV (66%) and NN Life (77%).

FIGURE 22: COMPOSITION OF BASIC OWN FUNDS AND ANCILLARY OWN FUNDS (LEFT: LIFE, RIGHT: NON-LIFE)

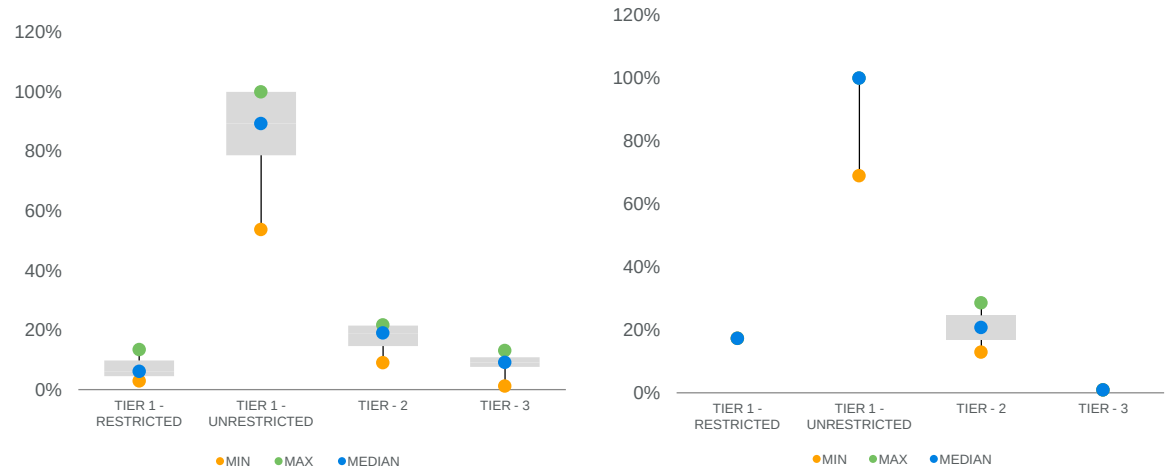


Figure 23 provides a view of the capital tiering structure of the Dutch insurance groups considered.

FIGURE 23: COMPOSITION OF BASIC OWN FUNDS AND ANCILLARY OWN FUNDS FOR INSURANCE GROUPS

	TOTAL	TIER 1 UNRESTRICTED	TIER 1 RESTRICTED	TIER 2	TIER 3
ACHMEA GROUP	8,345	5,385	911	1,356	693
ASR GROUP	6,372	5,147	204	1,010	11
NN GROUP	13,149	9,437	1,919	1,043	750
DELTA LLOYD GROUP	4,002	2,109	517	1,305	72
VIVAT GROUP	4,319	2,986	100	995	239
AEGON GROUP	18,119	10,656	2,517	3,309	1,638
UNIVE GROUP	676	676	0	0	0

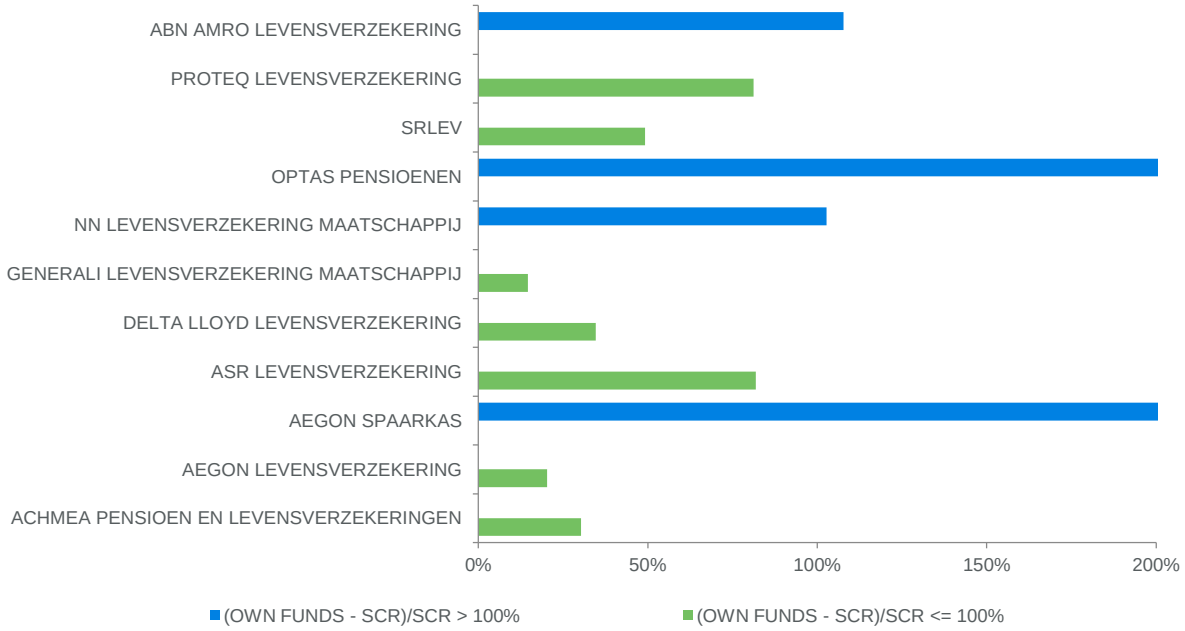
Univé Group has the highest percentage of Tier 1 unrestricted capital (100%) of the insurance groups included. Tier 1 restricted capital is highest at NN Group and Aegon Group (15% and 14%, respectively). Univé Group has no Tier 1 restricted capital.

Tier 2 capital is highest at Delta Lloyd Group (33%) and VIVAT Group (23%) and lowest at Univé Group (0%), whereas Tier 3 capital is highest at Aegon Group (9%) and Achmea Group (8%) and lowest again at 0% at Univé Group.

STRESS TEST SCR

The Solvency Capital Requirement (SCR) is set such that the probability that the undertaking can meet its obligations to policyholders and beneficiaries over the following 12 months is equal to 99.5%. If a shock the size of the SCR should occur, four out of 11 life insurance firms from our sample would see their solvency coverage ratios remain above 100%, as shown in Figure 24, implying a starting solvency coverage ratio above 200%. Note that they are mainly the smaller life insurers. Moreover, after a shock the size of the SCR, seven out of 11 firms have solvency coverage ratios below 100%, of which Generali Levensverzekering would have the lowest solvency coverage ratio (15%). Note that we assume the SCR to be unchanged after the applied shock.

FIGURE 24: SOLVENCY COVERAGE RATIO AFTER A LOSS EQUAL TO THE SCR FOR LIFE COMPANIES



Note: The total bar shows the solvency coverage ratio [= own funds / SCR]. The ratio axis is cut off at 200%.

Figure 25 shows that all but one non-life insurer would see their own funds below the SCR after a shock equal to the SCR. Generali Schadeverzekering would see its ratio decrease to 11%. The most solid capitalised company, Unive Schade, remains very soundly capitalised after a shock equal to the SCR, having an SCR ratio above 160%.

FIGURE 25: SOLVENCY COVERAGE RATIO AFTER A LOSS EQUAL TO SCR FOR NON-LIFE COMPANIES

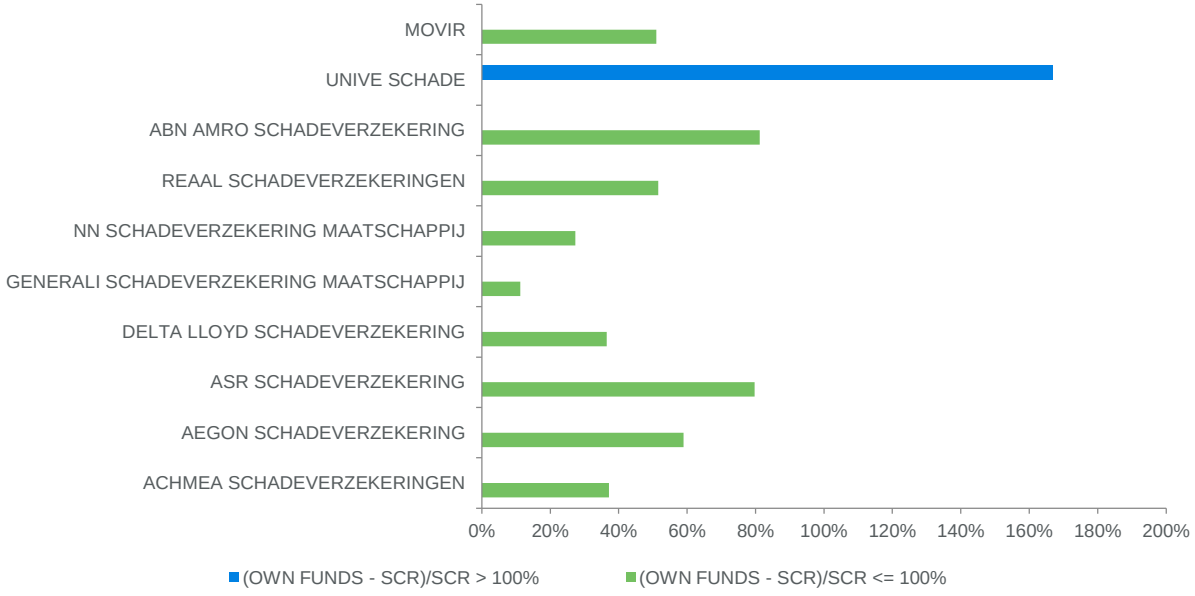
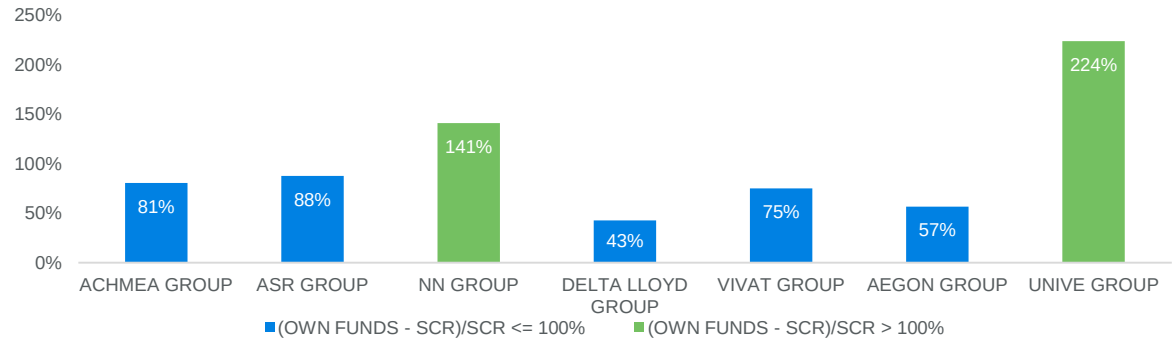


Figure 26 shows that all but two insurance groups would see their own funds fall below the SCR after a shock equal to the SCR. The most solidly capitalised group after shock is Univé Group, followed by NN Group.

FIGURE 26: SOLVENCY COVERAGE RATIO AFTER A LOSS EQUAL TO THE SCR FOR GROUPS



ANALYSIS OF BALANCE SHEET

Assets

The investment strategy of undertakings in the Netherlands is clearly distinguished by a preference for government bonds, which account for over 57% of the total investments for life companies and 51% for non-life companies (Figure 27 and Figure 28). Corporate bonds account for 19% of total investments for life companies and 22% for non-life companies. Thus, corporate and government bonds still largely dominate the companies' portfolios, accounting for more than 86% of total investments for life companies and more than 83% for non-life companies. Bonds provide a future return pattern that is stable and predictable, thus making them more suitable for backing fixed future liabilities (as opposed to equities). In addition, the capital cost of investing in bonds is lower than that of the more volatile asset classes (such as equity).

FIGURE 27: INVESTMENTS BREAKDOWN BY ASSET CLASS FOR LIFE COMPANIES

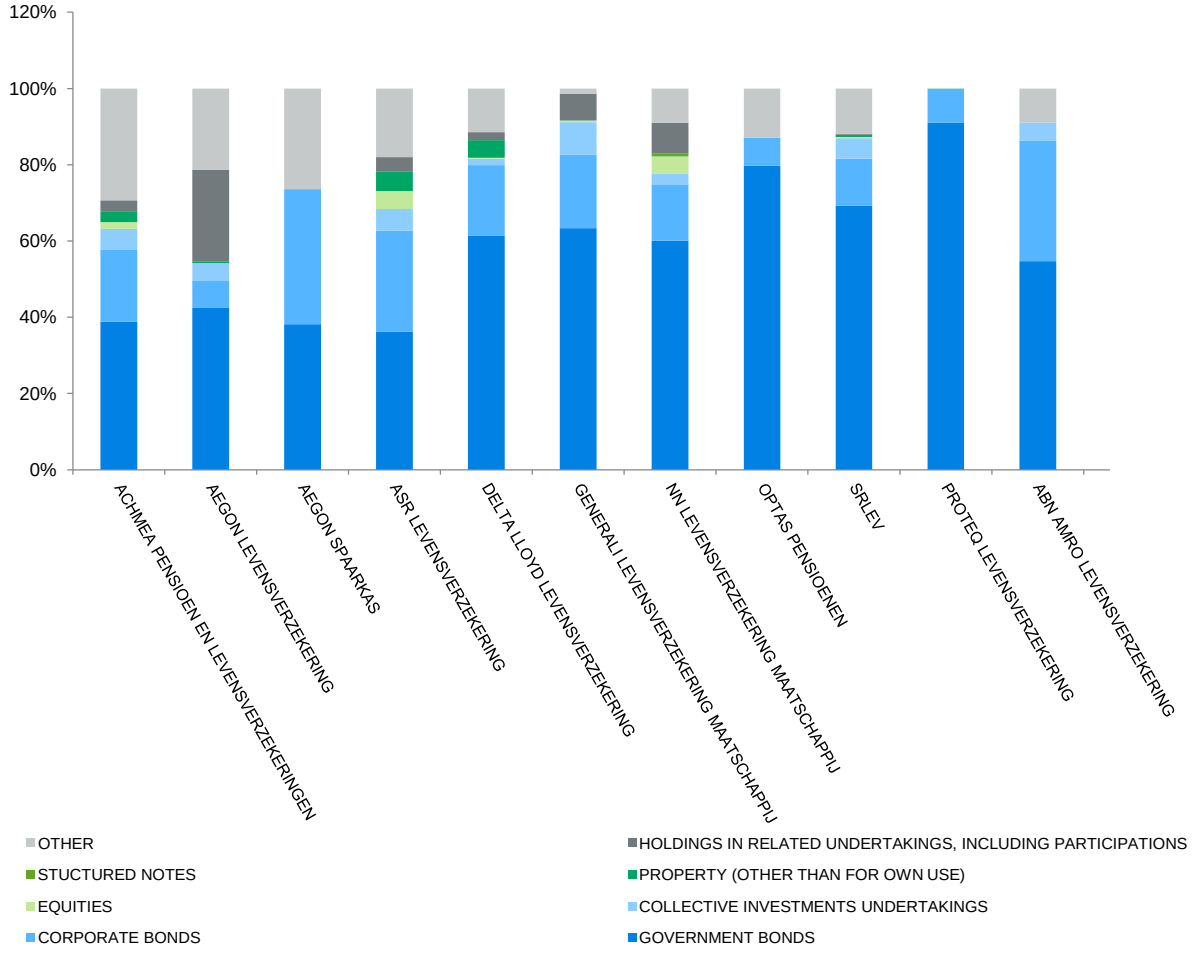


FIGURE 28: INVESTMENTS BREAKDOWN BY ASSET CLASS FOR NON-LIFE COMPANIES

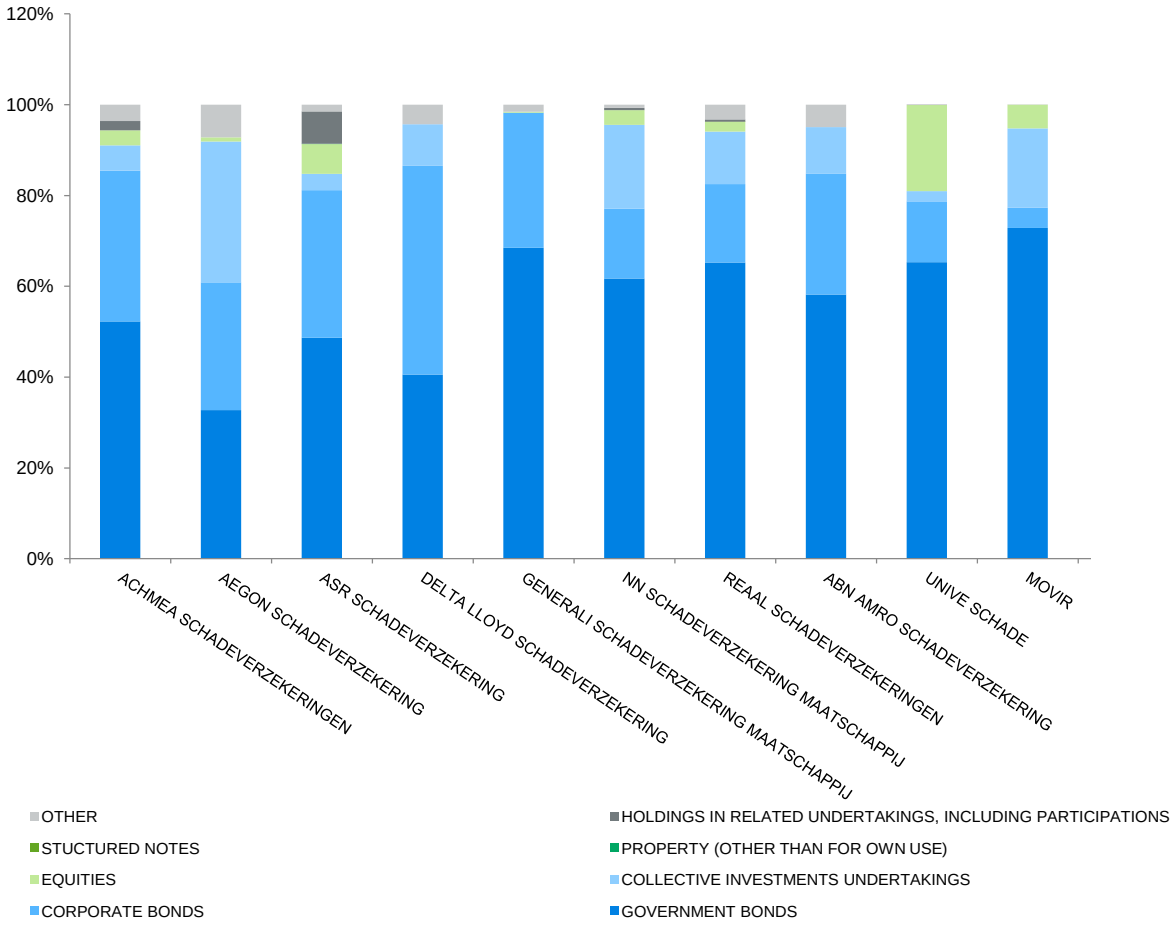


Figure 29 shows that the investment strategy of insurance groups in the Netherlands exhibits a clear preference for government bonds, similar to life and non-life companies. Government bonds account for over 49% of total investments for groups, and corporate bonds account for 17%.

FIGURE 29: INVESTMENTS BREAKDOWN BY ASSET CLASS FOR INSURANCE GROUPS

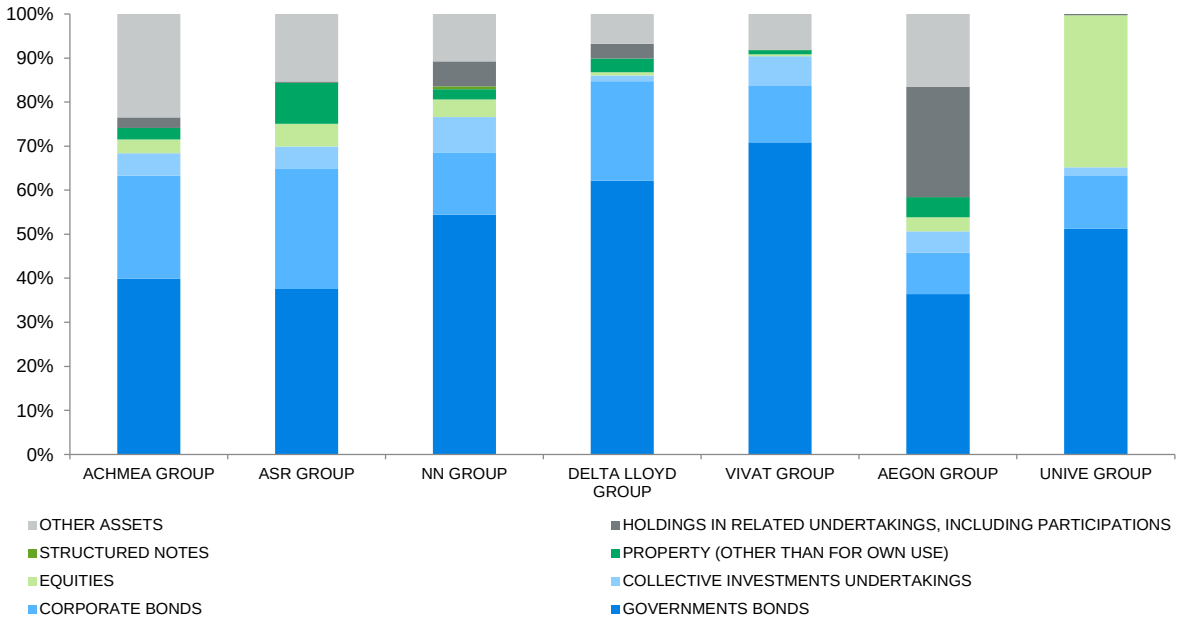


Figure 30 shows the range and statistics for investment share of each asset class. The wide ranges of percentages for government bonds and corporate bonds highlight greater differences in investment strategies than observed on aggregate. On aggregate, ASR Levensverzekering has put 10% of investments in property and equities: the highest exposure to risky assets compared to peers. Moreover, Aegon Spaarkas has the highest exposure to corporate bonds, accounting for approximately 46% of total investments. Of the non-life companies, Delta Lloyd Schadeverzekeringen has the highest exposure to corporate bonds, with 46% invested in this category.

FIGURE 30: DISTRIBUTION OF INVESTMENTS BY ASSET CLASS FOR LIFE COMPANIES

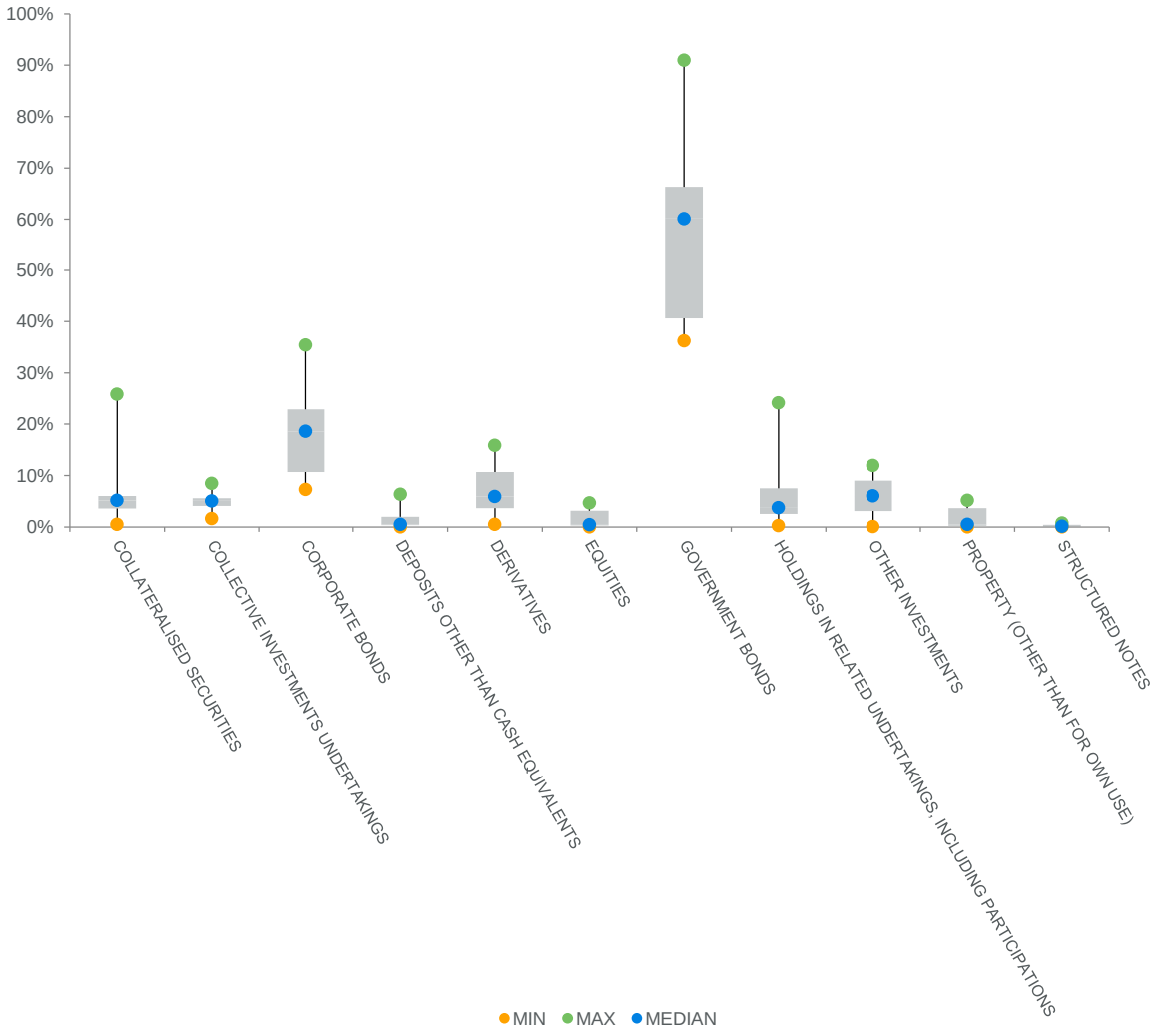
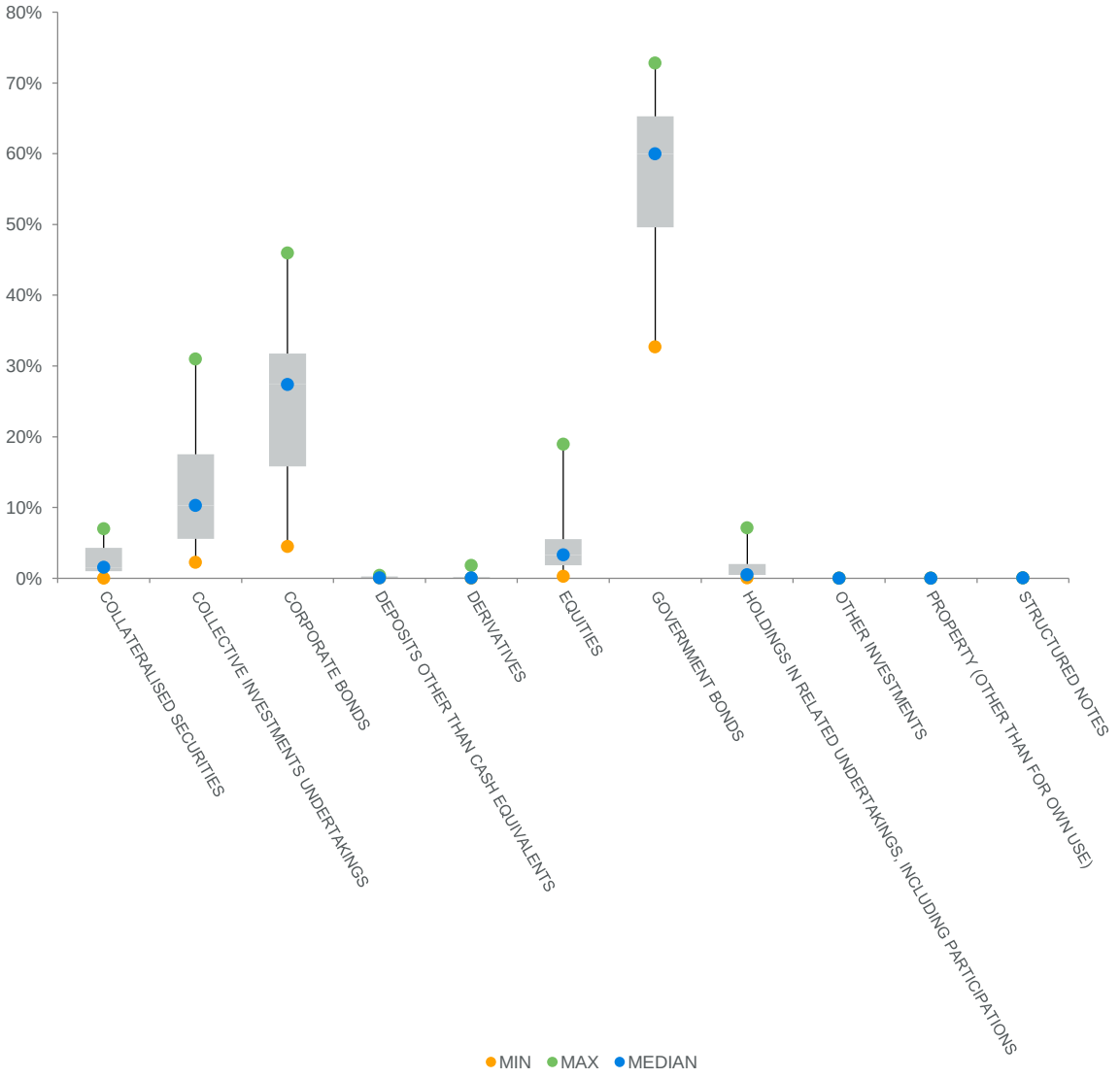


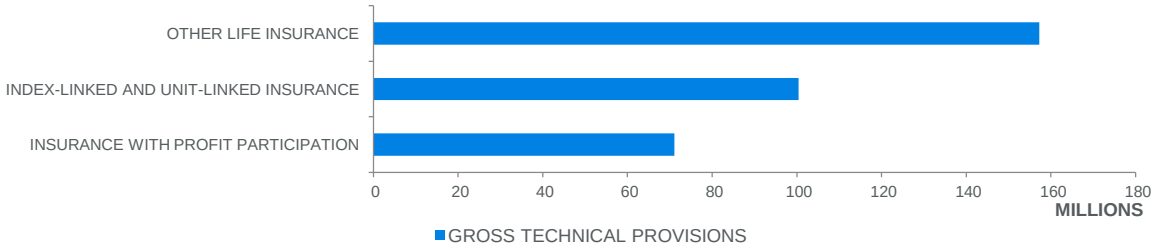
FIGURE 31: DISTRIBUTION OF INVESTMENTS BY ASSET CLASS FOR NON-LIFE COMPANIES



LIFE: TECHNICAL PROVISIONS

Figure 32 shows the allocation of technical provisions to type of product. Other life insurance business is the largest part of Dutch life insurance business, representing 48% of total technical provisions. Index-linked and unit-linked insurance represents 31% of technical provisions.

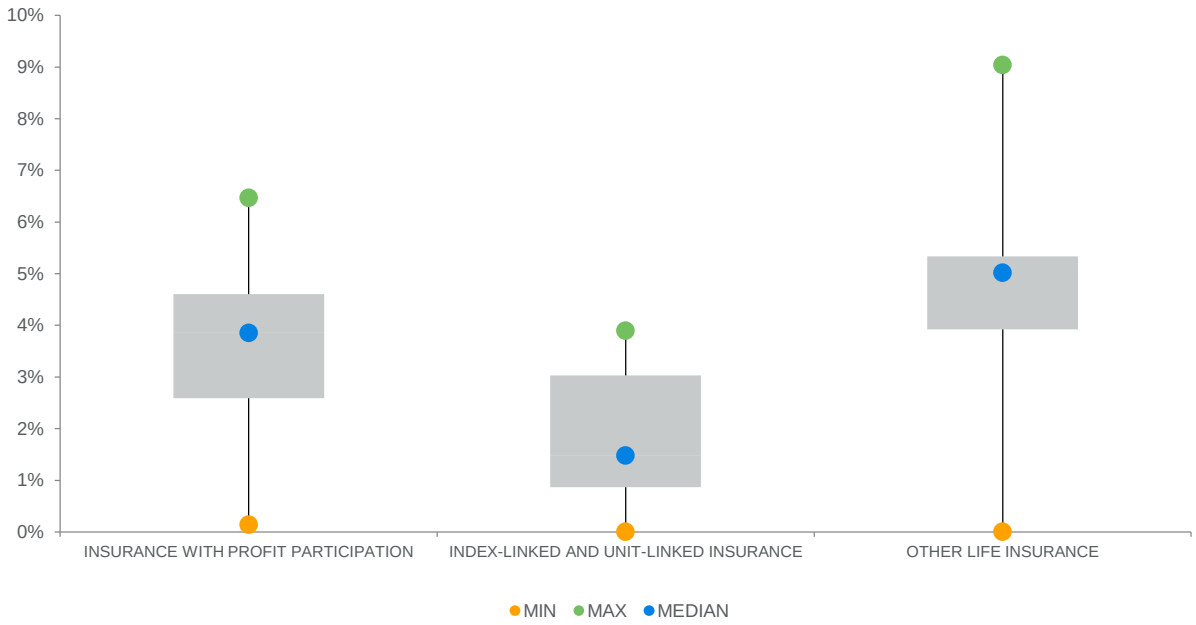
FIGURE 32: TECHNICAL PROVISIONS LIFE BY LINE OF BUSINESS



The risk margin (RM) is added to the best estimates to form the technical provisions to be held by the companies. The average RM expressed in SCR equals 68% and for most insurers RM is between 60% and 80%. Some outliers are Aegon Spaarkas with a relatively low RM (36%) and Delta Lloyd Life and NN Life with relatively high RMs (102% and 97%, respectively).

Figure 33 shows the distribution of the RMs of the undertakings of our sample for the three main lines of business.

FIGURE 33: DISTRIBUTION OF RISK MARGINS AS PERCENTAGE OF TECHNICAL PROVISIONS BY LINE OF BUSINESS



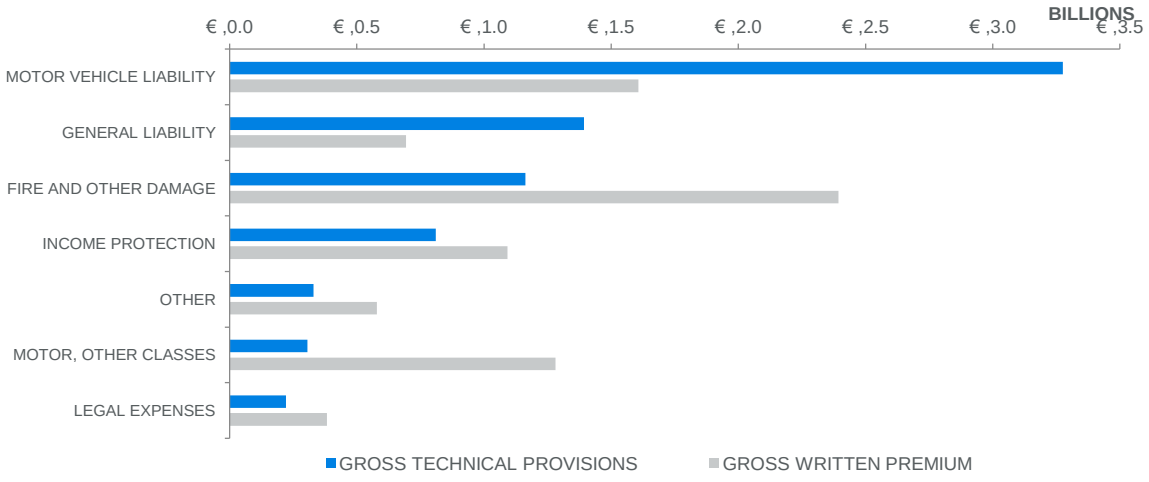
On aggregate, RM represents approximately 3.4% of technical provisions. The largest group relatively (other life insurance) shows the highest RM of 4.8%, but volatility in the RM there is also high. The RM is relatively low for the line of business of index-linked and unit-linked (UL) insurance (representing an aggregate level of 31% of the technical provisions), 1.9%. That is probably because the SCR is relatively low for these products as the risks (market and underwriting) remain with the participant instead of the insurer. For the smallest group insurance with profit participation, the corresponding RM is higher than the UL products (around 3.6%).

NON-LIFE: TECHNICAL PROVISIONS

The non-life undertakings included in our sample have reserved almost €17.3 billion of technical provisions gross of reinsurance, of which the majority (57%) is categorised under life business (health similar to life). For the remaining non-life business, €7.5 billion is reserved of technical provisions gross of reinsurance, and nearly €7.1 billion net of reinsurance.

Figure 34 shows the composition of gross technical provisions and gross written premiums across the non-life lines of business (as categorised under Solvency II) at year-end 2016.[6]

FIGURE 34: GROSS TECHNICAL PROVISIONS AND GROSS WRITTEN PREMIUMS BY NON-LIFE LINE OF BUSINESS

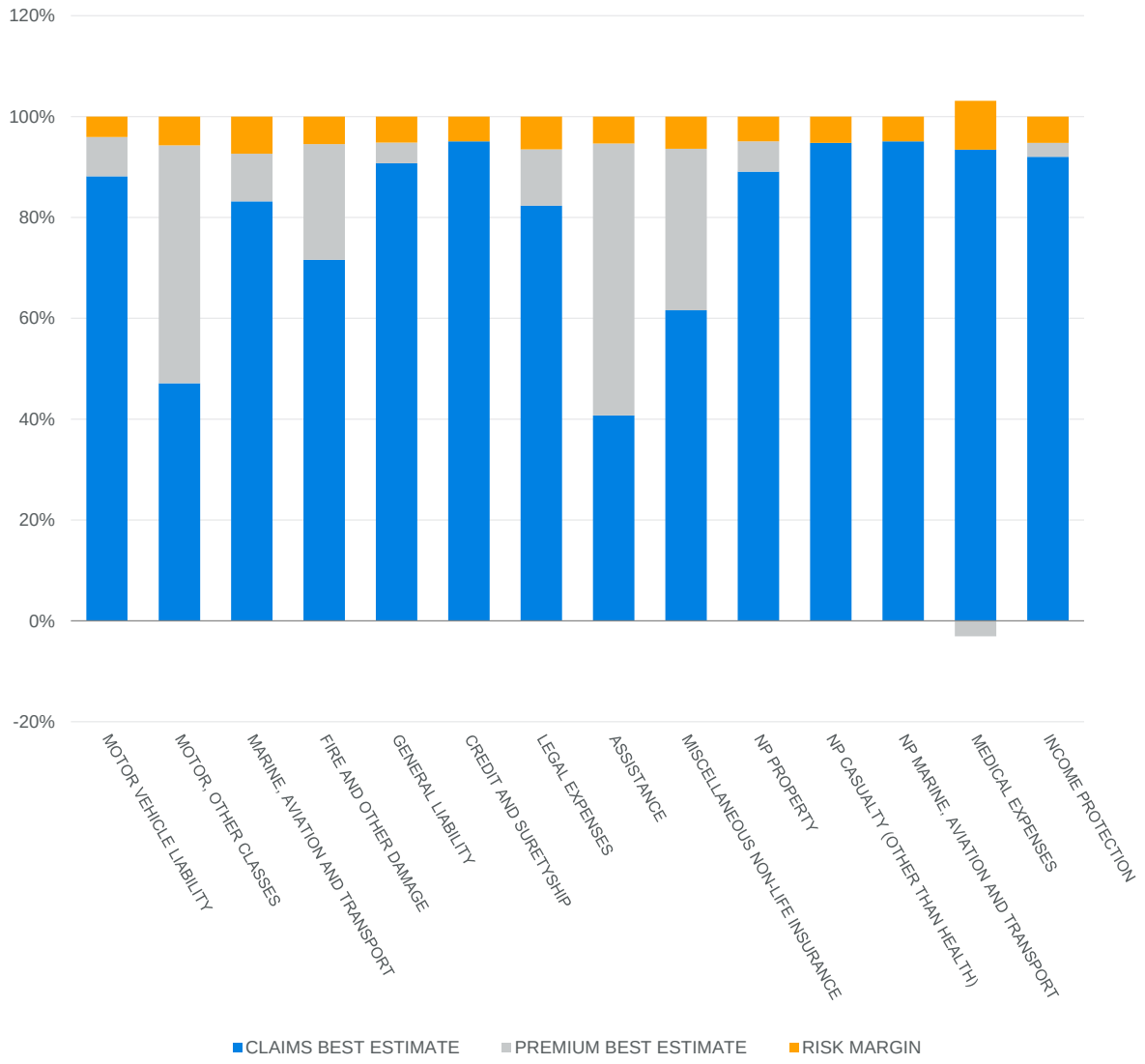


[6] Note that these analyses by non-life lines of business are excluding the health similar to life business written by the non-life insurers in our sample, accounting for 18% of gross written premiums and 57% of total gross technical provisions.

More than 62% of these non-life reserves are in respect of the long-tail business classes, general liability and motor vehicle liability, while 29% of the gross premiums are written in these lines of businesses, reflecting the long-tail nature of the business.

Figure 35 shows that the best estimate of claims provisions represents the biggest part of the Solvency II technical provisions. Only the lines of business 'Motor, Other Classes' and 'Assistance' display a best estimate of premium provisions that is materially higher than the best estimate of claims provisions.

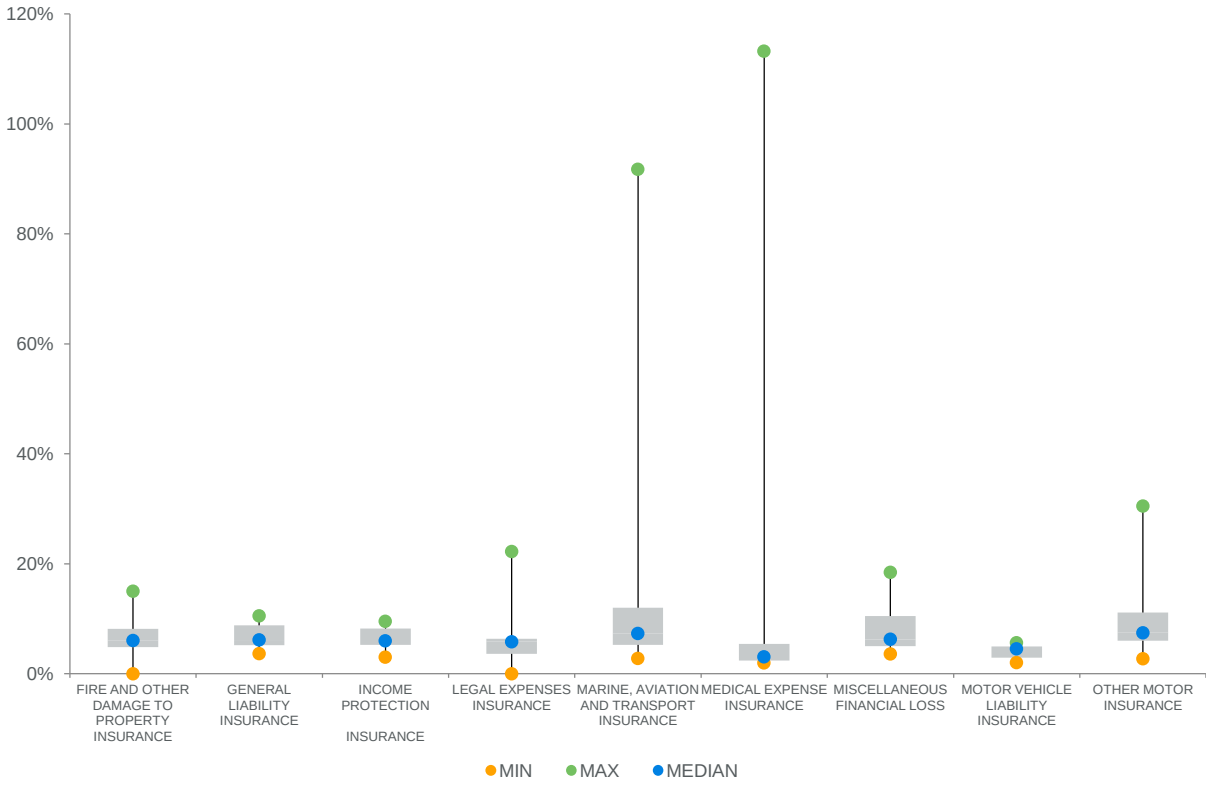
FIGURE 35: COMPONENTS OF NET TECHNICAL PROVISIONS



The premium provision under Solvency II is composed of two main components: premiums already received but not yet earned (the unearned premium) and the expected profits or losses in existing contracts. This reserve component of expected profit or losses can be both positive (loss) or negative (profit). The line of business 'Medical expenses' has a negative premium provision. All other categories show a positive premium provision.

The risk margin (RM) is added to the best estimate of 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 RM has been much debated over the past few years. On an aggregated basis, the RM represents approximately 6% of the net technical provisions. Figure 36 shows the distribution of RM and the net technical provisions as proportions of the total net technical provisions by line of business.

FIGURE 36: DISTRIBUTION OF RISK MARGIN AS PROPORTION OF TOTAL NET TECHNICAL PROVISION BY LINE OF BUSINESS

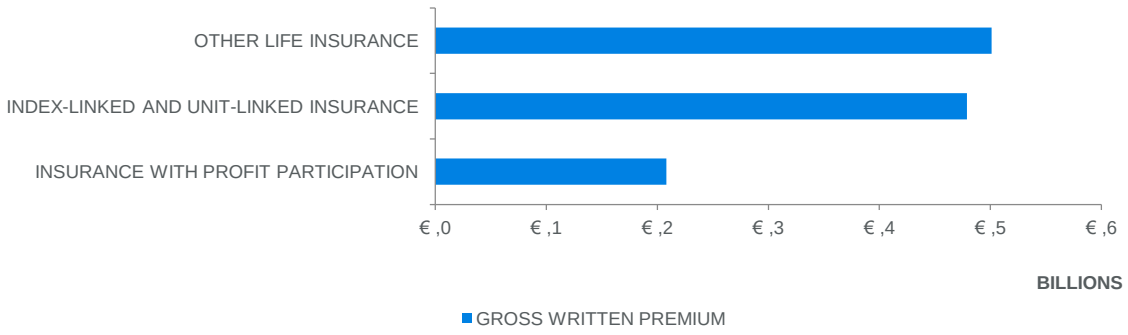


ANALYSIS OF UNDERWRITING BY LINE OF BUSINESS

LIFE

Figure 37 shows that the life insurance undertakings in our sample wrote approximately €11.9 billion of gross premiums in 2016, of which more than 43% is related to the line of business 'Other life insurance.' Index-linked and unit-linked insurance participation is the second most important line of business, with nearly 40% of the total gross premium written. With-profits business accounts for the remaining 17% of life insurance business.

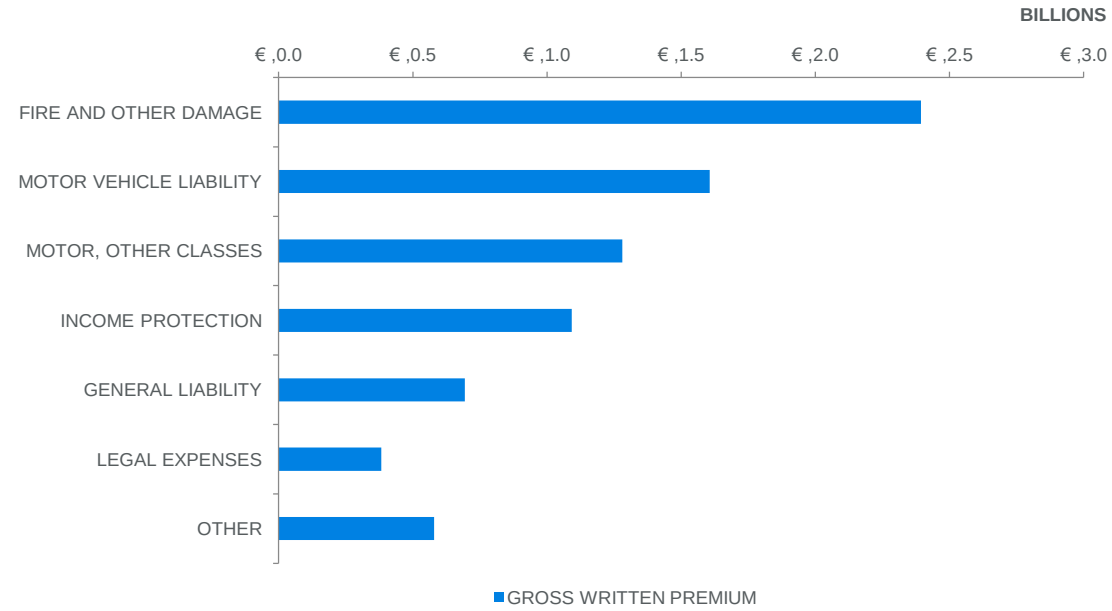
FIGURE 37: GROSS WRITTEN PREMIUMS IN 2016 BY LIFE LINE OF BUSINESS



NON-LIFE

In 2016, the undertakings in our sample wrote approximately €9.7 billion of gross premiums, of which18% (€1.7 billion) is categorised as life business related to health insurance. The remaining €8.0 billion of gross premiums written is for non-life, of which nearly 30% relates to fire and other damages covers (€2.4 billion). Furthermore, the motor liability and general liability lines together make up to €2.3 billion (nearly 30%) of the gross written premiums, in line with the observation stating that they are key contributors to technical provisions (together 62%). The relative higher contribution to technical provisions than to the gross written premiums reflects the long-tail character of these businesses, showing a longer duration than other non-life products.

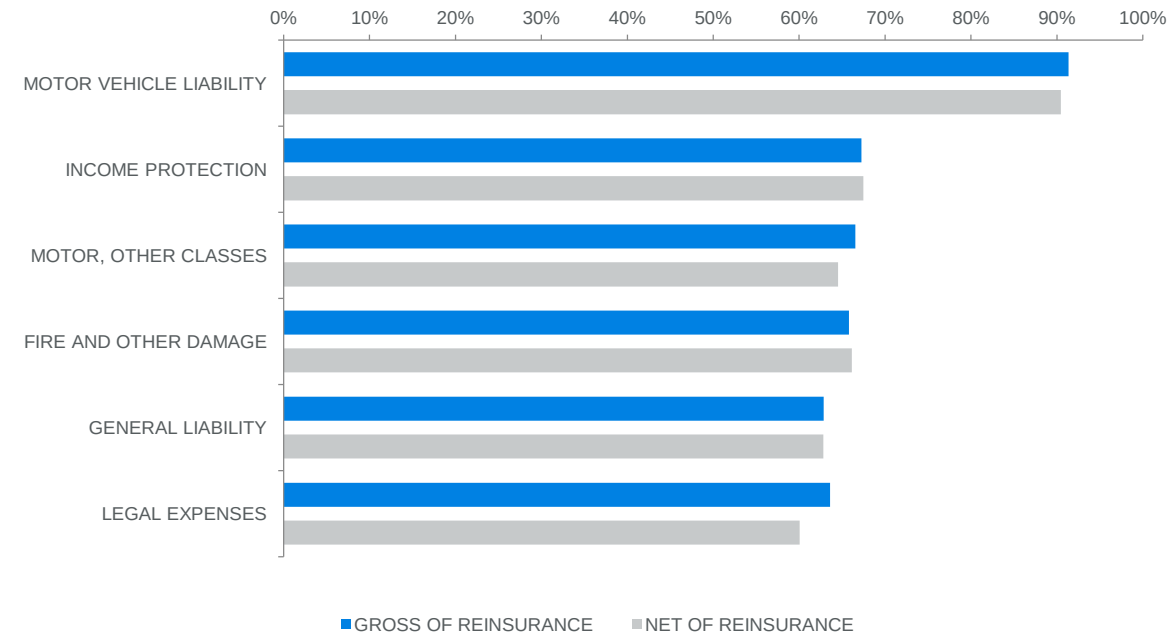
FIGURE 38: GROSS WRITTEN PREMIUMS IN 2016 BY NON-LIFE LINE OF BUSINESS



In Figure 39, we show the gross and net of reinsurance loss ratios by Solvency II line of business.

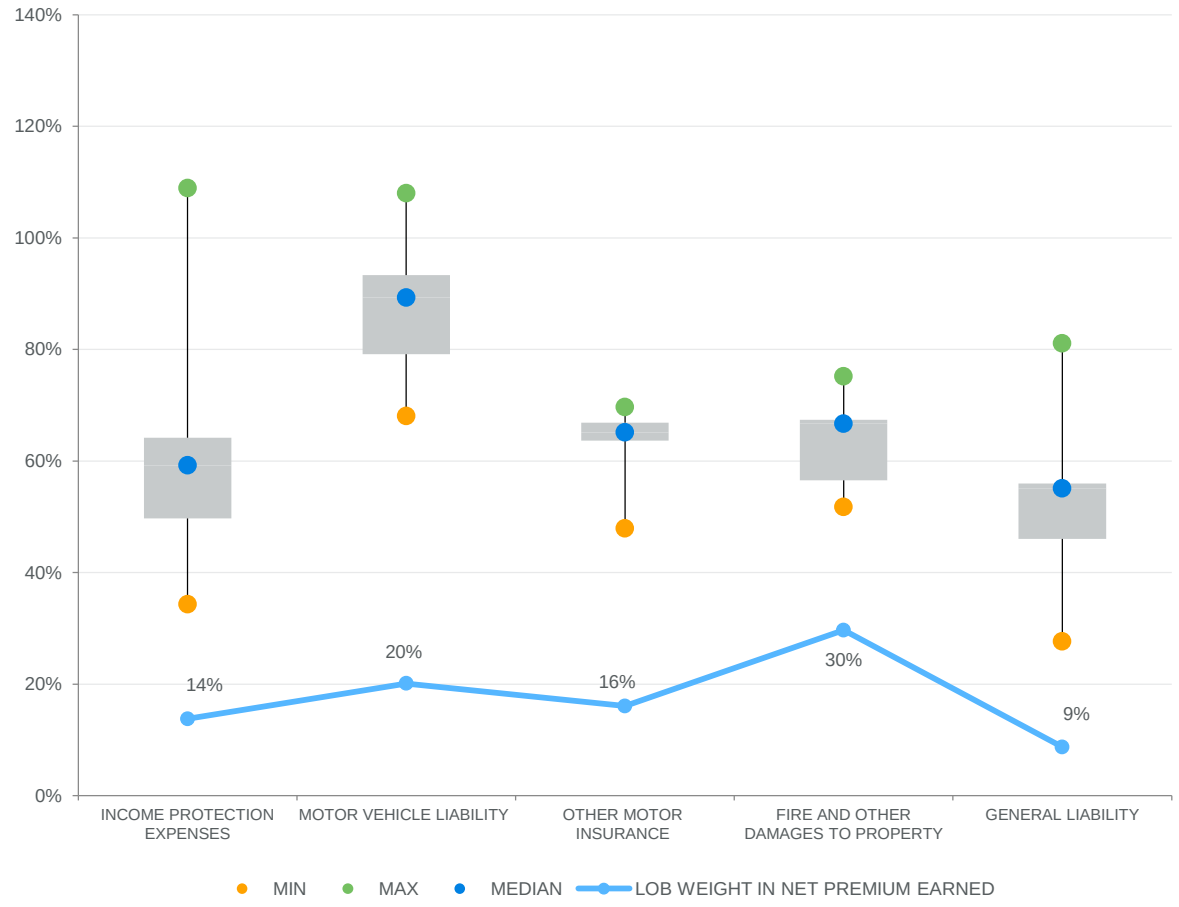
The business line of 'Motor vehicle liability' shows the highest loss ratio, which is not unexpected due to the very competitive nature of the Dutch motor insurance market. While the 'Legal expenses' business is showing the lowest loss ratio (net of reinsurance). Furthermore, Figure 39 indicates that, for 'Legal expenses' and the two motor insurance 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 materially lower than the gross loss ratios.

FIGURE 39: GROSS AND NET LOSS RATIOS BY LINE OF BUSINESS



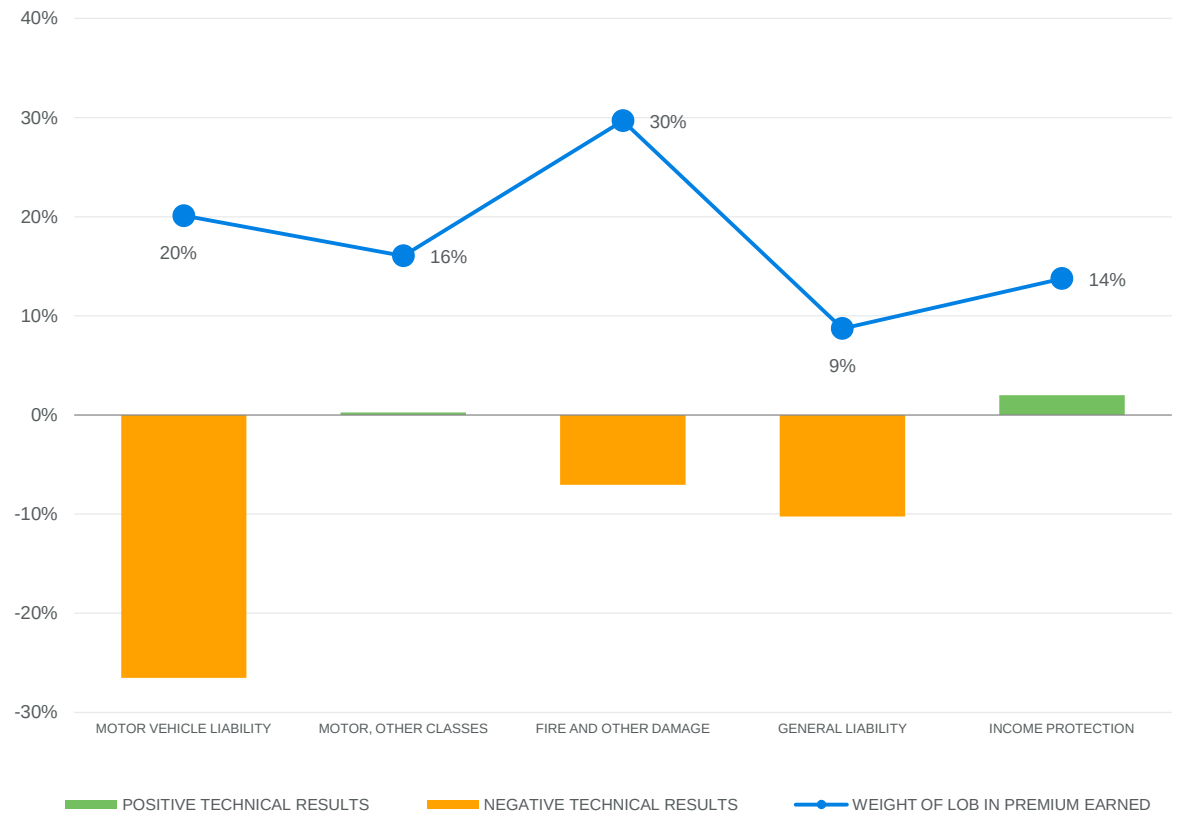
In Figure 40, statistics regarding volatility in loss ratio by line of business are shown. The line of business 'Fire and other damages to property' represents 30% of the total net premium earned. The range of loss ratios for the undertakings in our sample for this line of business is relatively high compared to other business lines. 'Motor vehicle liability' (20%) and 'Other motor insurance' (16%) show, respectively, the second- and third-highest percentages of the total premium earned. Although the lines of business 'Motor vehicle liability' and 'Fire and other damages to property' show relatively high percentages of the total net premium earned, the average loss ratios are also high (above 65%).

FIGURE 40: DISTRIBUTION OF LOSS RATIOS BY LINE OF BUSINESS



In Figure 41, the technical results for some lines of business[7] are shown on an aggregate basis for the undertakings included in the sample. The technical result is defined (and derived) as: (net earned premium – net incurred – expenses incurred) / (gross earned premium). The technical result, as defined, includes movements in prior year reserves (part of the net incurred) but does not include investment income. Figure 41 indicates that three lines of business exhibit a negative technical result, namely 'Motor vehicle liability,' 'Fire and other damage' and 'General liability.' The most important in terms of gross premium earned are motor, fire and marine, showing on aggregate a negative technical result.

FIGURE 41: TECHNICAL RESULT BY SOLVENCY II LINE OF BUSINESS



Note: Only the major business lines are shown in this figure. Therefore the relative weights do not add to 100%.

[7] Note that the technical results of non-proportional health (NP health) and non-proportional marine, aviation and transport lines of business (LoBs) are not reported, as only one undertaking has activities in these LoBs. Moreover, the technical results are unusually high due to negative net claims incurred.

Comparison to European life companies

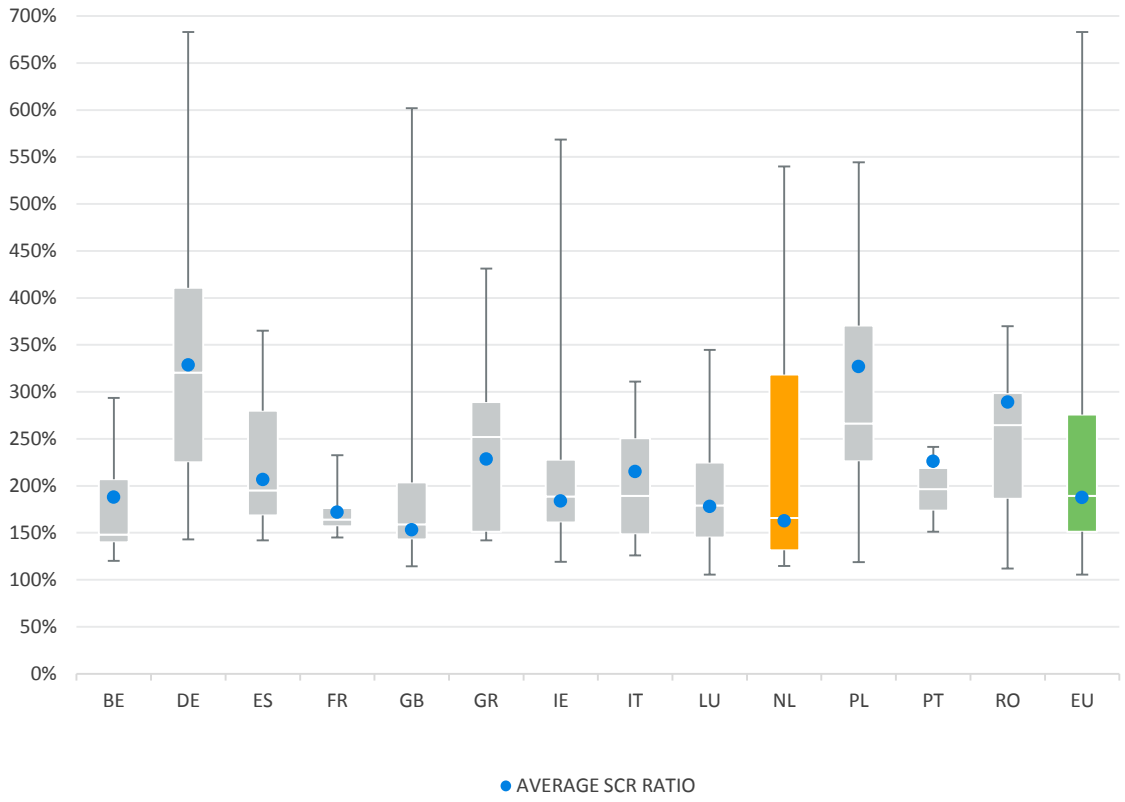
In this section, we present the Solvency II condition of European life insurance companies, and compare it with that of the Dutch life insurers.

SOLVENCY COVERAGE RATIOS: HOW DID EUROPEAN COMPANIES DO COMPARED TO THE DUTCH?

Overall, European non-life insurers within the sample that we analysed are sufficiently capitalised, with an average solvency coverage ratio of 187%. This is higher than that of the Dutch companies in our sample.

Figure 42 shows how the solvency coverage ratios are distributed throughout the 13 European countries included in our panel. The black 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 blue dot the mean of the range. Note that the distribution shows the median SCR coverage ratio as a white line in the middle of the distribution. This shows that there is a wide range of solvency coverage ratios: on average, insurers in some countries that were included in our review, such as Germany, Poland and Romania, 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.

FIGURE 42: DISTRIBUTION OF THE SOLVENCY COVERAGE RATIO FOR LIFE INSURERS BY COUNTRY



Based on the life insurers included in our analysis, the distribution of solvency coverage ratios is quite wide, with the lowest at 106% (Luxembourg) and the highest at 683% (Germany). Note, however, that this excludes one UK company (UBS Asset Management Life Limited), which reported an SCR coverage ratio of 1,256%.

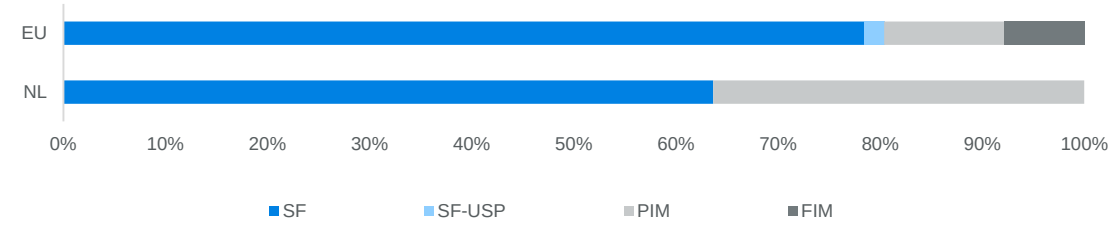
Insurers in the Netherlands in this European sample exhibit a wide range of solvency coverage ratios, with a minimum of 114% and a maximum of over 540%. Notably, the average coverage ratio in the Netherlands is in line with the median coverage ratio. The distribution of coverage ratios is concentrated around this mean.

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

ANALYSIS OF SCR METHOD USED

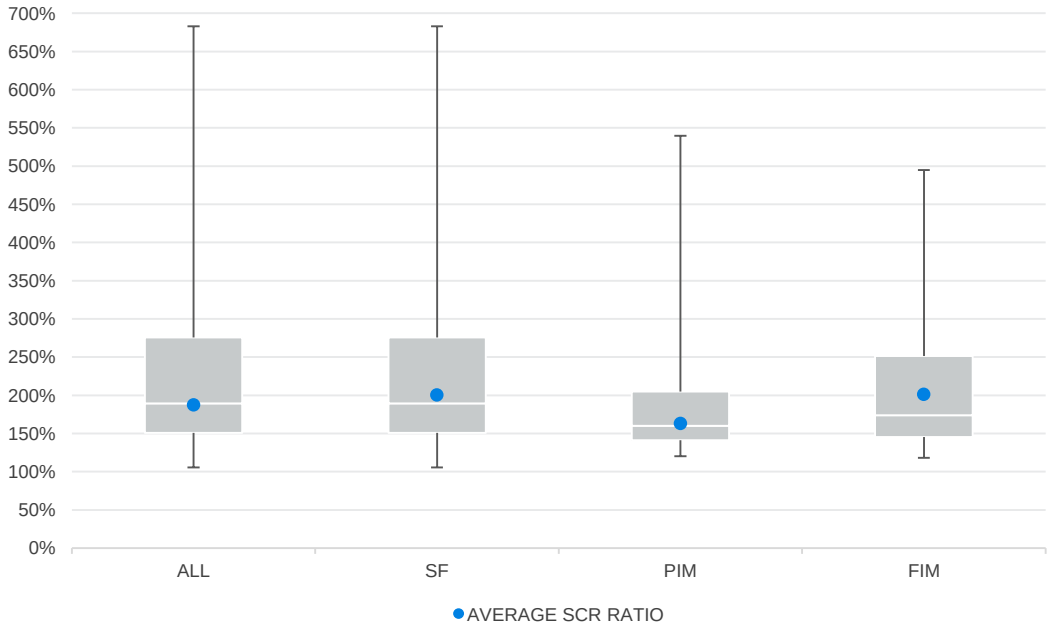
The majority of companies included in our European analysis are standard formula (SF) companies (80%). Of the remaining 20%, 2% were standard formula companies using undertaking-specific parameters (USPs), 12% were using partial internal models (PIMs) and 8% were using full internal models (FIMs). In the Dutch market no USPs or FIMs are yet being used. However, the Dutch life insurers in our sample are depending less on the standard formula and are leaning more towards PIMs compared to the other European life insurers in our panel.

FIGURE 43: DISTRIBUTION OF THE SCR METHOD USED FOR LIFE INSURERS



The chart in Figure 44 shows a split of the SCR coverage ratio distribution by SCR calculation type (USP companies are included with standard formula companies). Note that the distribution shows the median SCR coverage ratio as a white line in the middle of the distribution. The weighted average SCR coverage ratio is also shown.

FIGURE 44: DISTRIBUTION OF SCR COVERAGE RATIOS BY SCR CALCULATION METHOD FOR EU LIFE INSURERS[8]



In general, the distributions are broadly similar, with the PIM and FIM companies having slightly tighter distributions and slightly lower median SCR coverage ratios than the standard formula companies. This contrasts with the Netherlands, where coverage ratios by PIM companies exhibit a higher mean and median than SF companies, as well as a larger range of values. In our Dutch sample, the average solvency coverage ratio for life insurers using PIM is 178% versus 143% for SF life insurers.

It is difficult to draw any inferences from this but Figure 44 suggests that capital may be more closely managed in internal model companies than standard formula companies. This could be because PIM companies tend to be part of large insurance groups. In the Netherlands, however, Optas Pensioenen BV and Aegon Spaarkas are two relatively small life insurers using PIMs and showing very high solvency coverage ratios of 540% and 440%, respectively.

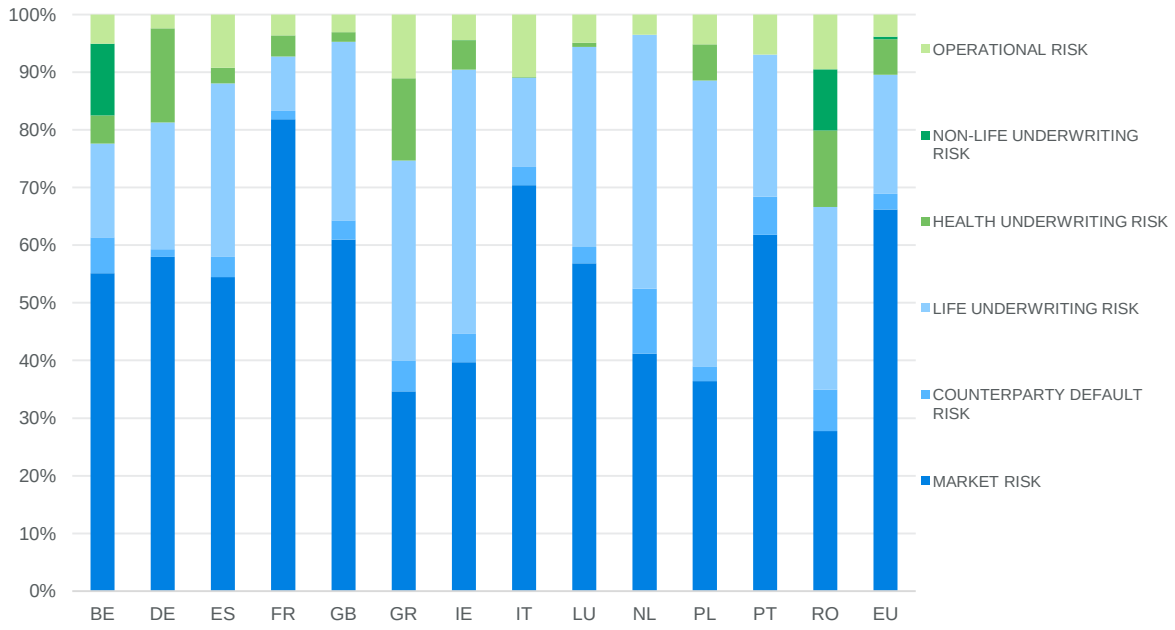
[8] As per Figure 42 above, we excluded one UK company (UBS Asset Management Life Limited) from the data underlying Figure 44, as it was an outlier with an SCR coverage ratio of 1,256%.

ANALYSIS OF SCR AND MCR: WHERE IS THE RISK?

Unfortunately, due to the nature of partial internal models and full internal models, it is not easy to analyse the SCR breakdown by risk type as the risk exposures captured in the internal models, and the reporting of capital requirements by risk exposure, vary by company. For this analysis, we therefore focus only on the SF companies.

In Figure 45 we show the breakdown of the SCR, by country, for the insurers that calculated their SCRs using the standard formula. This excludes deductions to the SCR such as diversification, the loss-absorbing capacity of technical provisions (LACTP) and the loss-absorbing capacity of deferred taxes (LACDT).

FIGURE 45: SCR BREAKDOWN BY COUNTRY



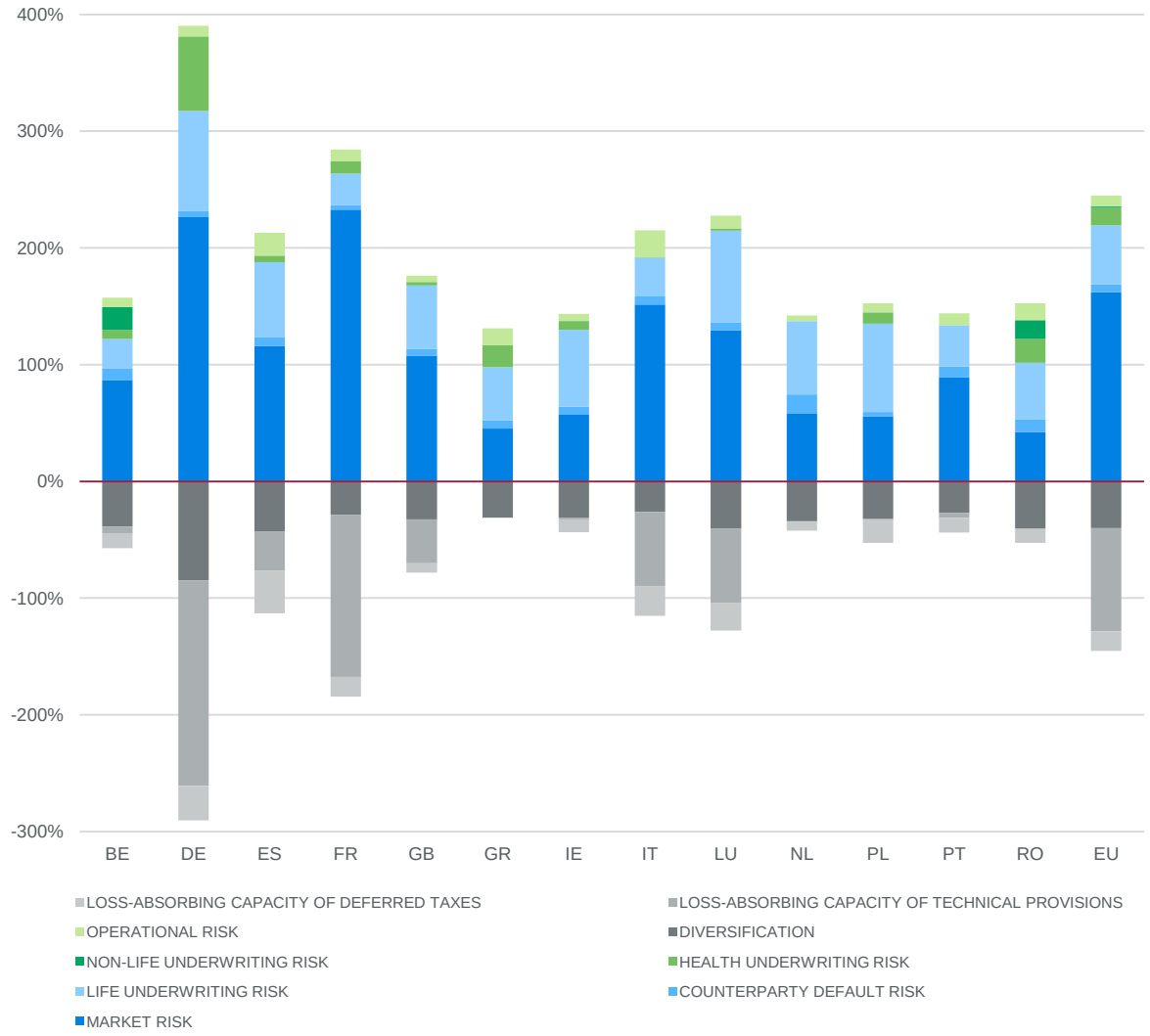
On average across the EU, market risk makes up the highest capital charge (66%) for life insurers. Life underwriting risk makes up the second-largest portion (21%). The remainder of the capital requirements are split across health underwriting risk (6%), operational risk (4%), counterparty default risk (3%) and non-life underwriting risk (0.5%). There is little or no intangible asset risk on European life insurers' balance sheets on average.

Compared to the EU market, the Netherlands shows a relatively large capital charge for life underwriting risk, and a below-average capital charge for market risk. Additionally, the counterparty default risk capital charge of the Dutch market is larger than that of the other EU countries in the sample considered.

Both Belgium and Romania show larger proportions of non-life underwriting risk in the overall SCR compared to the other European countries considered. For the Belgian market, this is due to the fact that all of the major players sell a mixture of life and non-life insurance. Our analysis includes Belgian insurers that are primarily focussed on life insurance, but non-life underwriting still accounts for 20% of the SCR for these companies. Our analysis of the Romanian market also includes insurers selling a mix of life and non-life insurance.

The split of SCR across risk modules varies widely by country, depending on the risk exposures of the companies in each country. This is highlighted even further in the graph in Figure 46, which looks at the breakdown of the total SCR, allowing for the risk module capital requirements and the reductions to the SCR such as diversification, the LACTP and the LACDT.

FIGURE 46: BREAKDOWN OF TOTAL SCR BY COUNTRY



The distribution of SCR components shown in Figure 46 is much wider than the distribution shown in Figure 45, as Figure 46 reflects both capital charges and reductions to the SCR. 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 diversification benefits, the LACDT or the LACTP. The capital charges net of reductions should sum to 100% of the SCR.

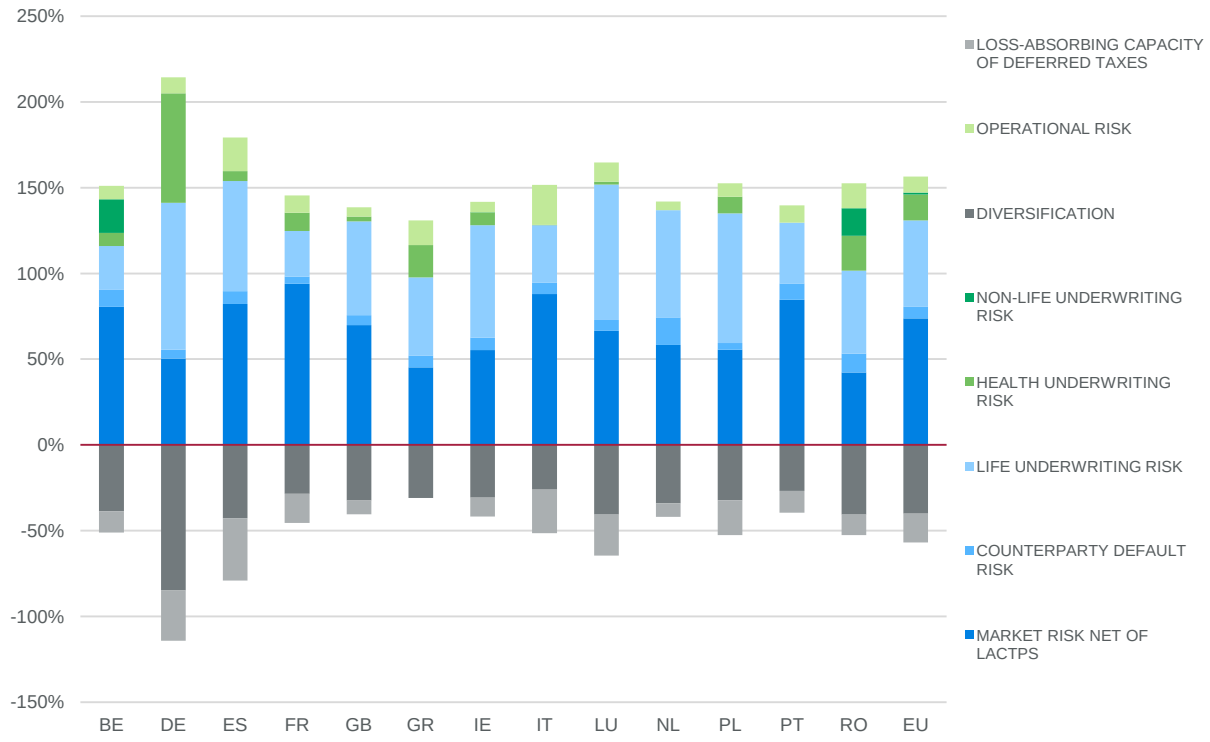
Diversification benefits result in a reduction in SCR of 40% on average across Europe, but vary widely by country, with diversification benefits highest where there is a wider spread of risk exposure. For example, Germany has the highest diversification benefit, reflecting the fact that insurers in Germany have a wide range of risk exposures across market risk, life underwriting risk and health underwriting risk. The Netherlands exhibits a smaller SCR reduction compared to most countries in the sample, which is mostly due to the diversification benefit (34% reduction). The LACDT reduction of 8% accounts for the balance of the SCR reduction in the Netherlands.

The LACTP and the LACDT result in further reductions of 88% and 17%, respectively.

As noted above, the split of SCR across risk modules varies widely by country depending on the risk exposures of the companies in each country. It's not surprising that the countries most exposed to market risk (Germany, France, Italy) are some of the countries with the largest portions of technical provisions in respect of insurance with profit participation. The investment guarantees associated with these contracts result in a high exposure to market risk. These countries also benefit from high reductions to the SCR, reflecting the LACTPs associated with profit participation business.

If the LACTP is netted off against the market risk SCR, it results in a much tighter distribution of risk exposures across Europe, as shown in the graph in Figure 47.[9]

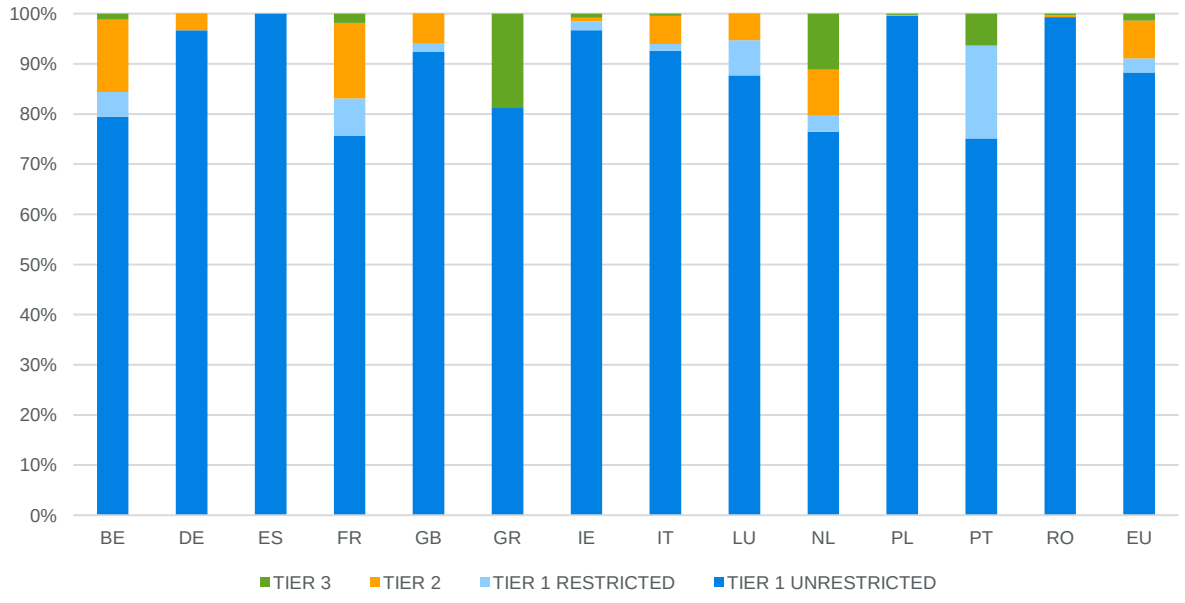
FIGURE 47: BREAKDOWN OF SCR BY RISK MODULE BY COUNTRY ADJUSTED TO SHOW MARKET RISK NET OF THE LACTP



ANALYSIS OF OWN FUNDS

Figure 48 shows the split of own funds for life insurers across European countries.

FIGURE 48: SPLIT OF OWN FUNDS BY TIER ACROSS EUROPE



[9] In reality, some of the LACTPs may be attributable to other risks such as underwriting risk. However, the split of LACTPs across risk exposures is not available, so for simplicity we have assumed that it is all attributable to market risk.

The majority of own funds held by EU life insurers (88%) are classified as Tier 1 unrestricted own funds. This is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II. While the split of own funds varies by country, in general the majority of European life insurers have a very high portion of Tier 1 unrestricted own funds and a very low portion of Tier 3 capital (1%). However, Dutch life insurers on average have relatively low shares of Tier 1 unrestricted capital (76%), in line with that of Belgium (73%), Portugal (75%) and France (76%). Rather, Dutch life insurers have relatively high shares of Tier 3 capital (11%).

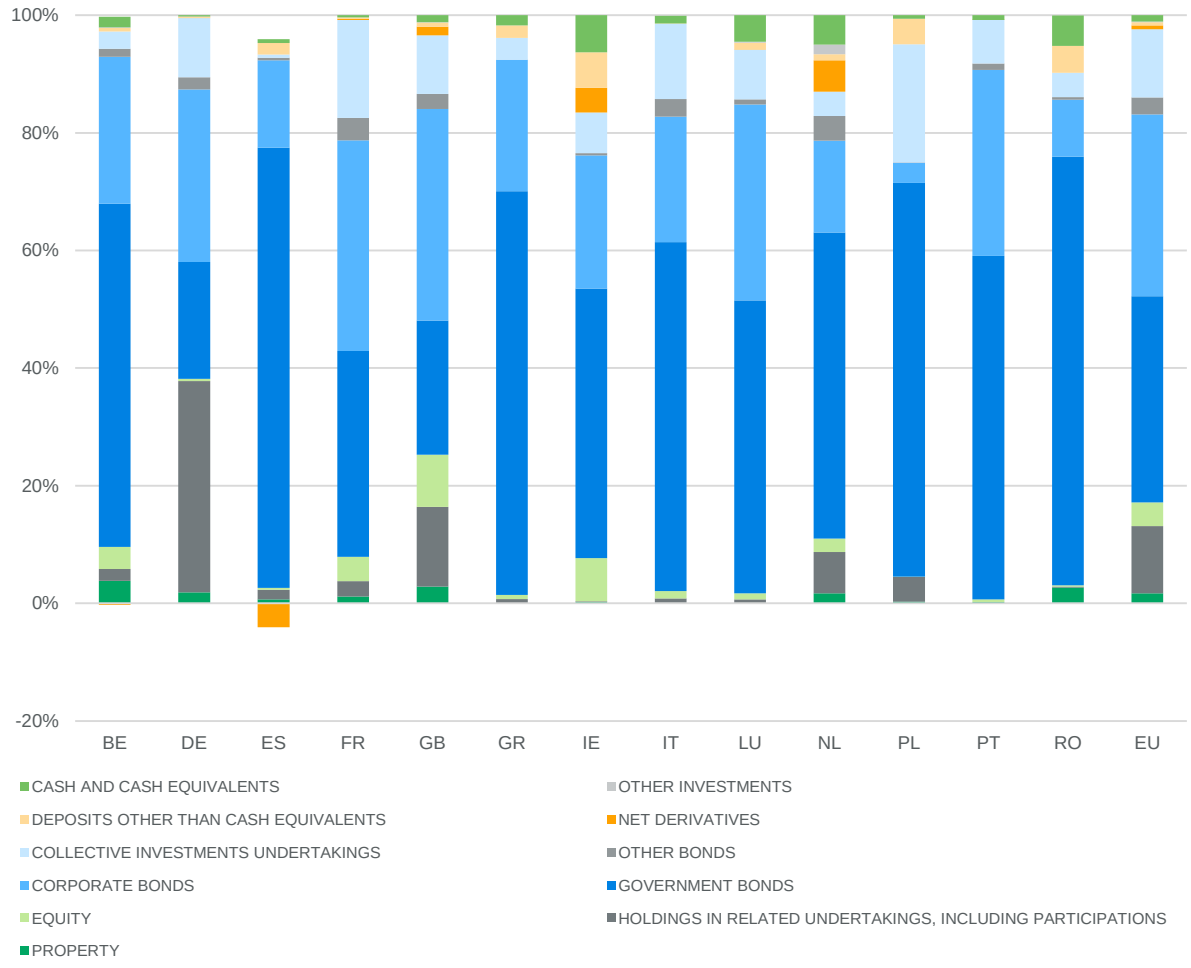
Tier 1 restricted own funds make up 3% of own funds on average across Europe. Tier 2 own funds make up 7% of total own funds and Tier 3 own funds make up just 1% of total own funds on average.

ANALYSIS OF BALANCE SHEET

Assets

Figure 49 shows the split of investments held by life insurers across European countries, with the EU average represented in the last bar on the chart.

FIGURE 49: SPLIT OF FINANCIAL INVESTMENTS ACROSS EUROPE



In general, investments in government bonds and corporate bonds make up the majority of financial investments on European life insurers' balance sheets. On average, government bonds and corporate bonds make up 35% and 31% of total financial investments, respectively.

Life insurers in the Netherlands hold, on average, 52% of their investments in government bonds. This is higher than most of the other EU countries considered, and considerably higher than the life insurers in Germany, France, and Great Britain, who hold significantly lower proportions in government bonds (20%, 35% and 23%, respectively). Relative to the other EU countries considered, the proportion of corporate bonds held by life insurers in Netherlands is small (16%). Dutch life insurers hold a relatively large position in cash and cash equivalents (5.0% vs. 1.1%).

Holdings in related undertakings, including participations, make up over 11% of total financial investments, which is primarily due to large holdings in Germany (where this asset class makes up about 35% of total financial investments) and the UK (where holdings in related undertakings account for 13.5% of total financial investments). In the Netherlands, the holding in this asset class is below the EU average, at 7%. However, this remains the third-largest allocation to this asset class within the countries considered.

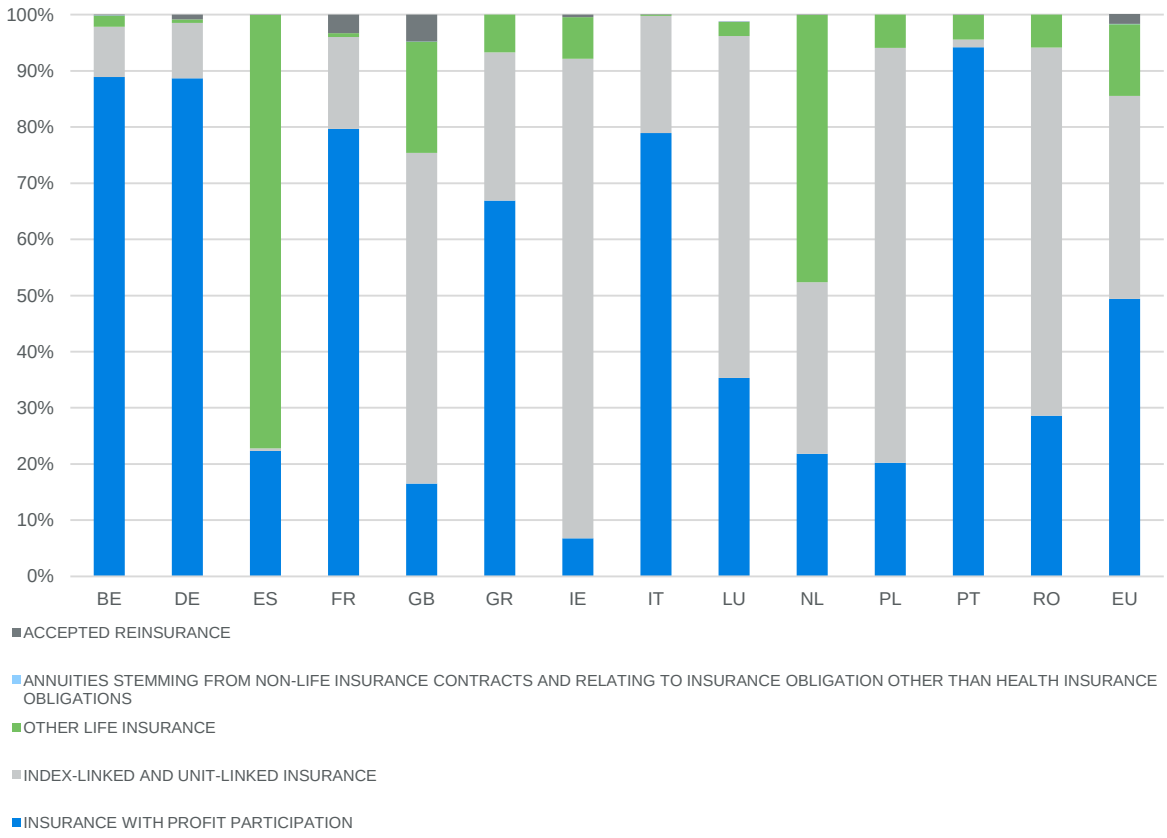
Investments in collective investment schemes make up a further 11% of total financial investments. This is due to large holdings of collective investment schemes by Polish (20%), French (17%), Italian (12.8%), UK (10%) and German (10%) life insurers.

The derivatives shown in Figure 49 represent the net derivative position. At 5.3%, Dutch life insurers have the largest position in net derivatives within the EU countries included. Spanish life insurers have a net negative position, meaning that on average the value of derivative liabilities is greater than the value of derivative assets on the Solvency II balance sheet for Spanish insurers included in our sample.

Liabilities

Figure 50 shows the technical provisions by line of business held by life insurers across European countries.

FIGURE 50: TECHNICAL PROVISIONS BY LINE OF BUSINESS ACROSS EUROPE[10]



On average across the EU, insurance with profit participation makes up almost half of the total technical provisions for life insurers. At 22%, Dutch life insurers have significantly lower profit participation business than this EU average. This is a low allocation to profit participation insurance business compared to the sample considered.

Index-linked and unit-linked insurance make up the second-largest portion of average EU technical provisions, at 36%. The life insurers in the Netherlands are not significantly different from this EU average, at 31%.

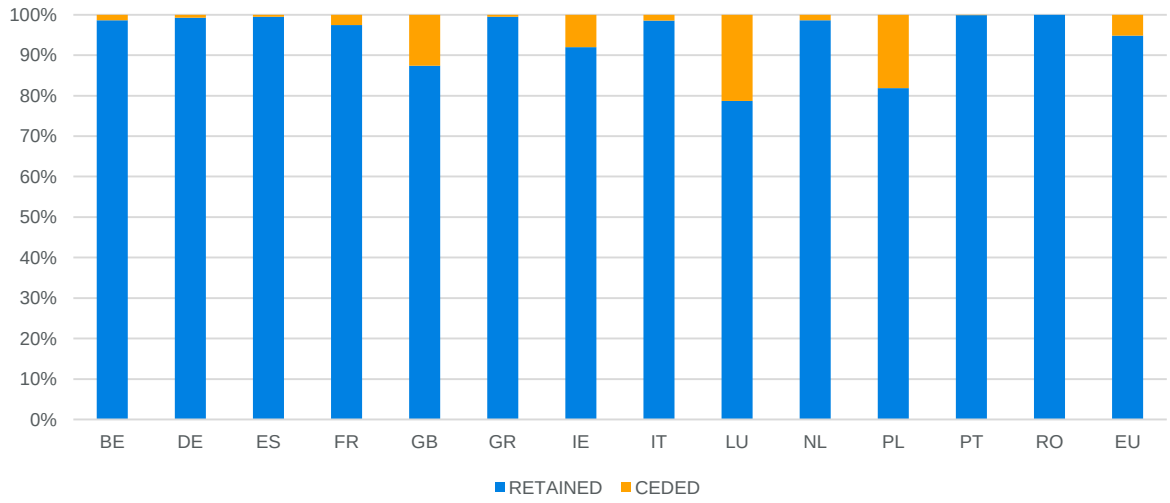
[10] The technical provisions in respect of health similar to life techniques business (health SLT business) has been excluded from Figure 50 as this line of business makes up only 0.5% of total technical provisions on average across Europe.

The technical provisions for the Belgian, French, German and Italian markets are dominated by insurance with profit participation, whereas the technical provisions for the Irish, Polish, Luxembourger and UK markets are predominately in respect of unit-linked business. As a result, these two lines of business represent the largest portion of technical provisions across Europe on average (85% combined). However, these two lines of business represent only 52% of the life insurance technical provisions in the Netherlands.

Other life insurance (16%), which includes predominately traditional protection business (13%) and accepted reinsurance (3%), make up the bulk of the remaining technical provisions for the EU. The Netherlands has a significantly higher share in 'Other life insurance' than the EU average (48%).

Figure 51 shows the split of net and gross technical provisions across European countries. The ceded rates represent the difference in the net and gross technical provisions.

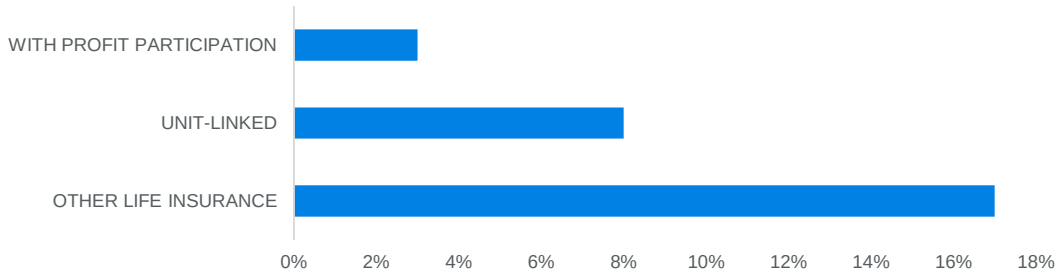
FIGURE 51: ANALYSIS OF USE OF REINSURANCE ACROSS EUROPE



On average about 5% of total technical provisions are reinsured across Europe. This varies by country, with Luxembourg and Poland being the highest users of reinsurance. Dutch life insurers on the other hand have relatively low usage of reinsurance (1.4%). This is less than the European average, but not markedly so.

While the average European rate of ceded technical provisions is 5%, this varies by line of business. On average, about 17% of technical provisions for traditional life insurance products ('Other life insurance') are reinsured. For unit-linked business about 8% of technical provisions are reinsured on average. This is primarily driven by the UK and Polish markets. Only about 3% of the technical provisions for insurance with profit participation is reinsured on average.

FIGURE 52: ANALYSIS OF USE OF REINSURANCE ACROSS LINE OF LIFE BUSINESS

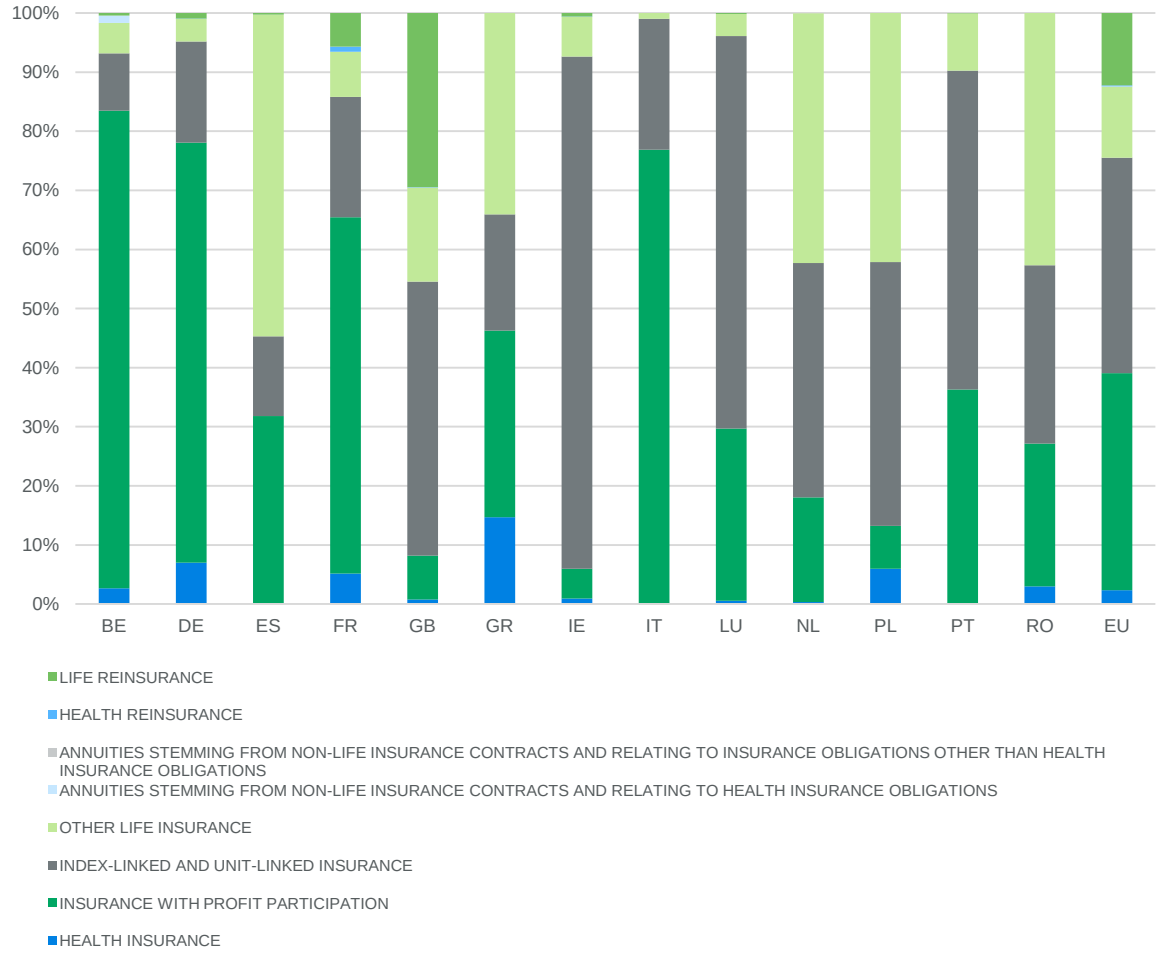


ANALYSIS OF PREMIUMS

In 2016, nearly 37% of gross premiums written relates to insurance with profit participation in our sample of EU life insurers. Insurance with profit participation and index-linked and unit-linked insurance together make up 73% of the gross written premiums (GWP), in line with the observation stating that they are the key contributors to technical provisions.

Figure 53 shows the split of GWP by line of business held by life insurers across European countries.

FIGURE 53: SPLIT OF GROSS WRITTEN PREMIUMS BY LINE OF BUSINESS ACROSS EUROPE



From the split of gross written premiums, it can be seen that Dutch life insurance business is dominated by traditional life insurance ('Other life insurance') at the expense of insurance with profit participation. Compared to the EU, Dutch life insurers have a lower premium share of 'Insurance with profit participation' but a higher share of 'Other life insurance.'

CONCLUSION

The mix of life insurance business varies across Europe, with some markets (Belgium, France, Germany and Italy) dominated by insurance with profit participation while the insurance market in other countries (such as Ireland, Poland, Luxembourg and the UK) is predominately in respect of unit-linked business. The Dutch life insurance market is predominated by traditional life insurance (‘Other life insurance’).

However, despite the different business mixes, overall European life insurers were in a very strong position at year-end 2016, with an average SCR coverage ratio of 187%. Of the companies included in our analysis, no life insurers had an SCR coverage ratio lower than 100%.

Own funds are predominately invested in Tier 1 unrestricted own funds (88%), which is the highest form of capital in terms of quality and loss absorbency as defined under Solvency II. This further emphasises the strong financial position of European life insurers. Dutch life insurers have relatively low Tier 1 unrestricted and relatively high Tier 3 capital.

Comparison to European non-life companies

In this section, we present the Solvency II condition of European non-life insurance companies, and compare it with that of the Dutch non-life insurers in our sample.

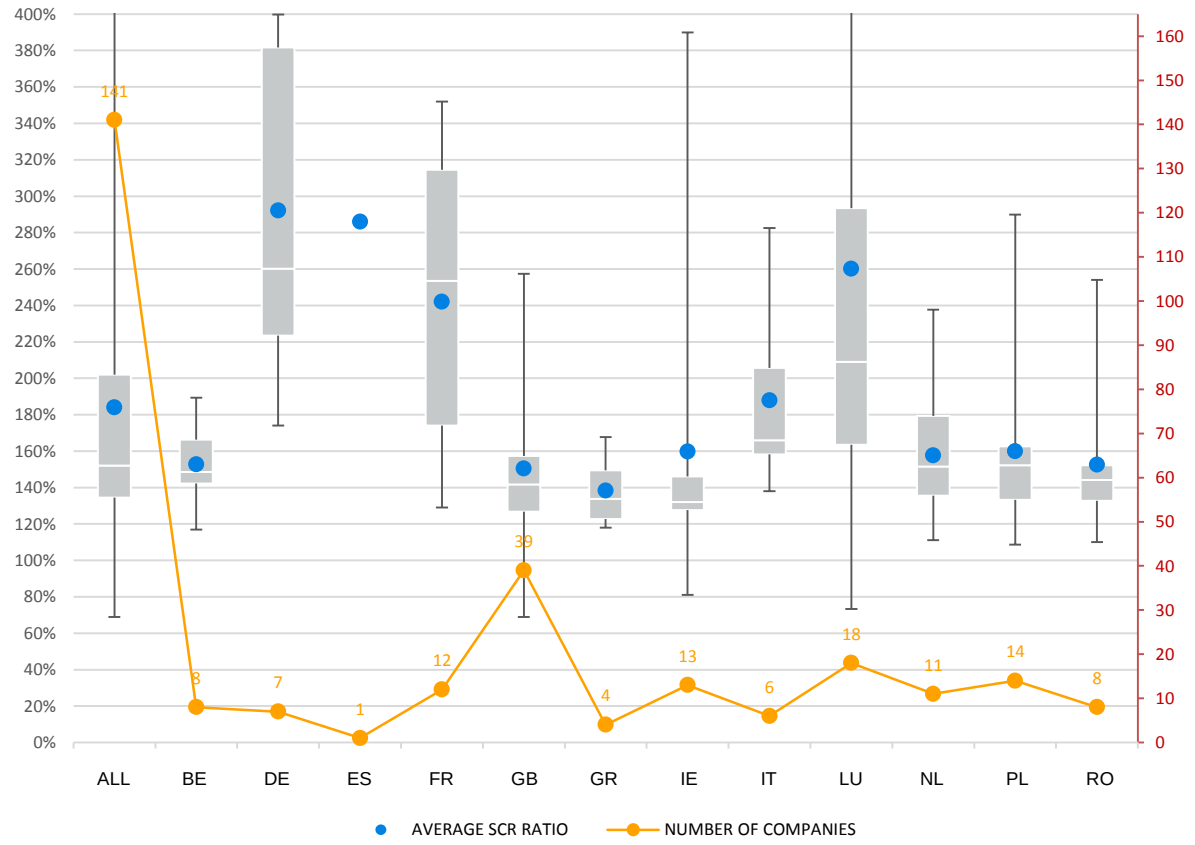
SOLVENCY COVERAGE RATIOS: HOW DID EU COMPANIES DO COMPARED TO THE DUTCH?

On an aggregated basis, European non-life insurers within the sample we analysed are sufficiently capitalised, with an average solvency coverage ratio of 184%. This is well above the average of the Dutch non-life companies in our sample of 151%.

Figure 54 shows how the solvency coverage ratios are distributed throughout the 12 European countries included in our analysis. The black 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. Figure 54 shows that there is a wide range of solvency coverage ratios in the European non-life market. On average, insurers in some countries, such as Luxembourg, France and Germany, were very well capitalised, with solvency ratios of over 250%. Insurers in other European countries, however, such as Greece and the UK, were on average much less well capitalised at the 2016 year-end.

Non-life insurers in the Netherlands exhibit a comparatively smaller range of coverage ratio, compared to the European countries in the sample, but remain well capitalised, with an average of over 150%.

FIGURE 54: DISTRIBUTION OF SOLVENCY COVERAGE RATIOS OF NON-LIFE COMPANIES BY COUNTRY



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

ANALYSIS OF SCR METHOD USED

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 a full internal model (FIM) and 12 a partial internal model (PIM), as shown in Figure 55.

FIGURE 55: DISTRIBUTION OF THE SCR METHOD USED FOR NON-LIFE INSURERS

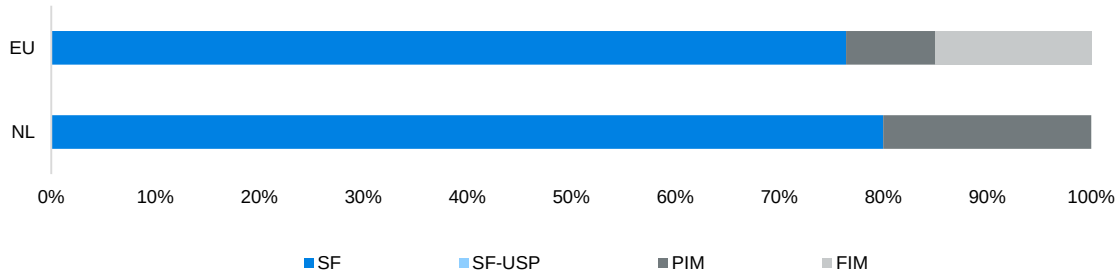
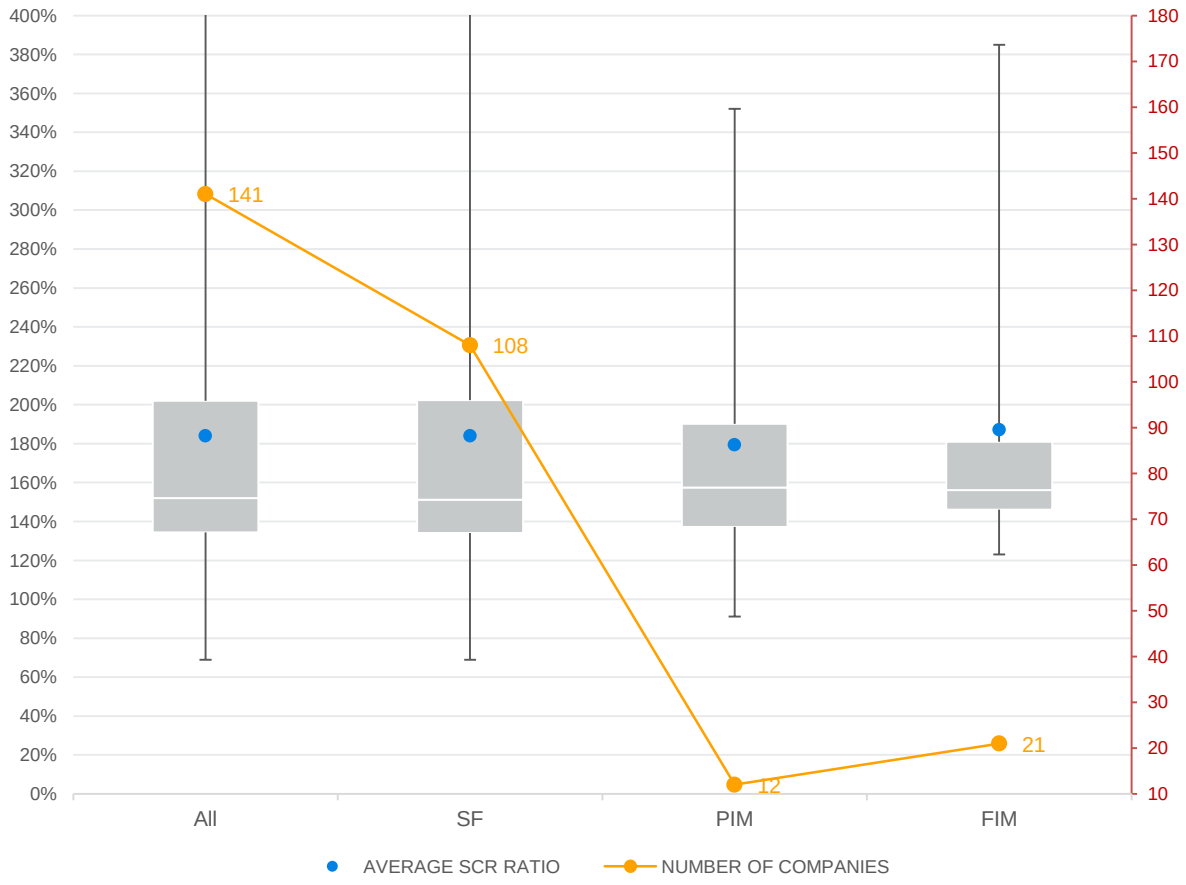


Figure 56 shows that the averages of the solvency coverage ratios are quite similar whether using the SF (184%), a PIM (162%) or a FIM (187%).

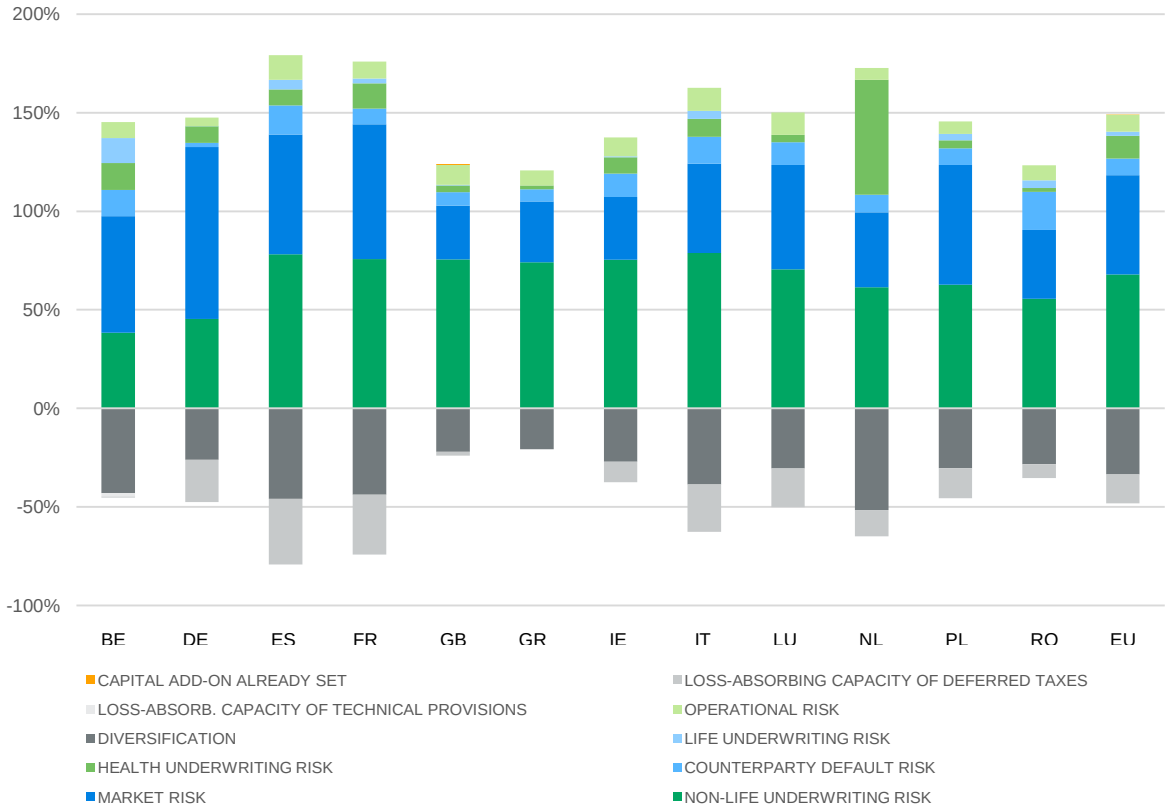
FIGURE 56: SCR RATIOS AND SCR CALCULATION METHODS ACROSS EUROPE



ANALYSIS OF SCR AND MCR: WHERE IS THE RISK?

We present in Figure 57 the breakdown of the SCR, by country, for the insurers that calculated their SCRs using the SF.

FIGURE 57: SCR BREAKDOWN BY COUNTRY



Except for Germany and Belgium, where market risk is the predominate risk, non-life underwriting risk is the biggest risk area for non-life firms across Europe. In the Netherlands, the health underwriting risk (similar to life business) 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 nonexistent. To some extent, this highlights differences among countries in the types of product sold by non-life insurers within Europe, but it also reflects the fact that in some countries (such as the UK and the Netherlands) there are standalone health insurance providers not included within our analysis of non-life insurers.

ANALYSIS OF OWN FUNDS

As shown in Figure 58, 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 58: STRUCTURE OF OWN FUNDS

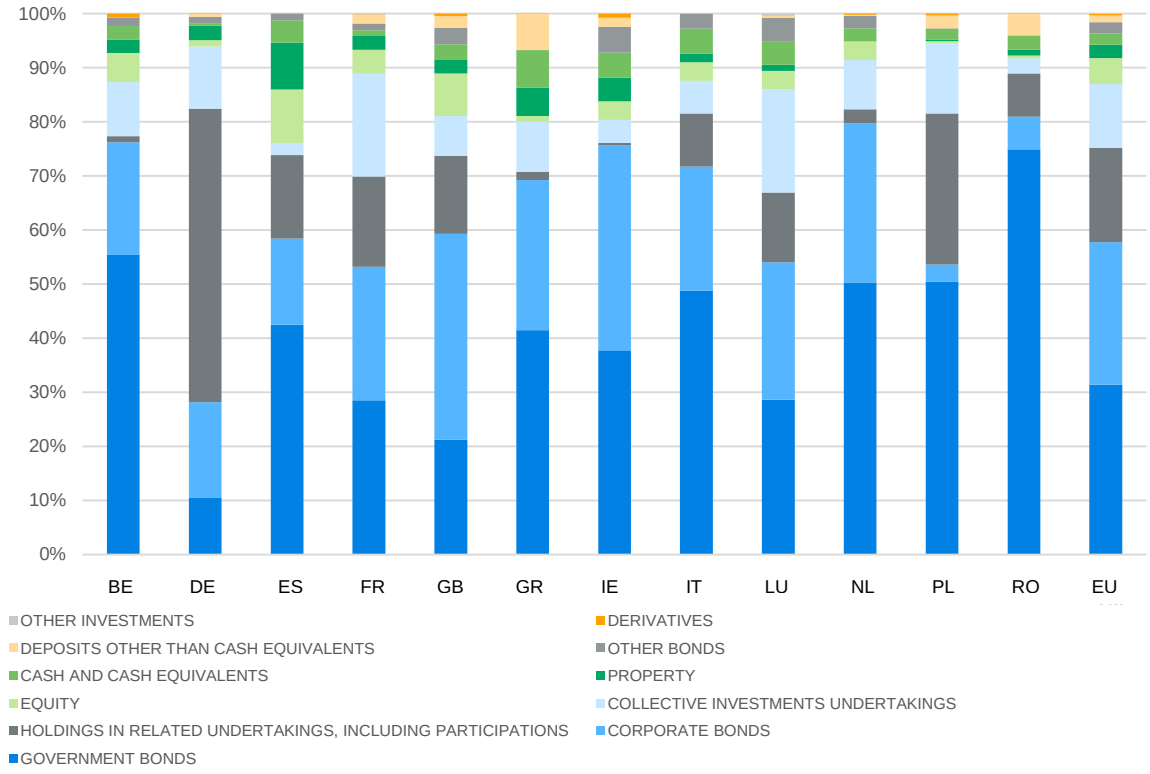
	BE	DE	ES	FR	GB	GR	IE	IT	LU	NL	PL	RO	EU
ELIGIBLE OWN FUNDS TO MEET THE SCR	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
TIER 1 – UNRESTRICTED	89%	98%	100%	91%	88%	98%	93%	97%	96%	93%	98%	91%	92%
TIER 1 – RESTRICTED	0%	0%	0%	4%	1%	0%	0%	0%	0%	2%	0%	1%	2%
TIER 2	7%	2%	0%	5%	8%	0%	4%	0%	3%	5%	1%	6%	5%
TIER 3	4%	0%	0%	0%	2%	2%	3%	3%	1%	0%	0%	2%	1%

ANALYSIS OF BALANCE SHEET

Assets

Figure 59 shows the breakdown of companies' investments by 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.

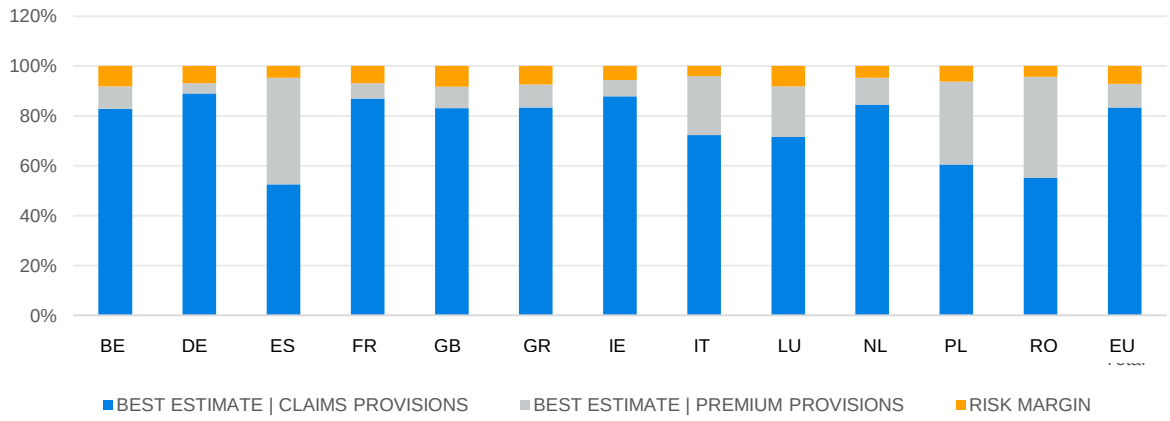
FIGURE 59: INVESTMENT BREAKDOWN, AGGREGATED BY COUNTRY



Technical provisions

Figure 60 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. This is very similar to the Dutch non-life market. However, 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 60: COMPONENTS OF NET TECHNICAL PROVISIONS



Reliances and limitations

In carrying out our analysis and producing this research report, we relied on the data and information provided in the SFCRs and QRTs of our sample companies. We have not audited or verified this data or other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. It should be noted that in some cases errors were spotted in the underlying data. We made minor adjustments to the data to correct known errors such as inconsistencies across QRTs in order to better inform our analysis. However, we have not made any material changes to the underlying data. We have not made any changes to the data to reflect additional information or changes following the reporting date.

This research report is intended solely for educational purposes and presents information of a general nature. The underlying data and analysis have been reviewed on this basis. This report is not intended to guide or determine any specific individual situation and persons should consult qualified professionals before taking specific actions.

Appendix A: List of the Dutch undertakings and groups analysed

FIGURE 61: DUTCH INSURANCE SOLO ENTITIES ANALYSED

UNDERTAKING	INSURANCE GROUP	LIFE OR NON-LIFE	SCR RATIO
NN LEVENSVERZEKERING MAATSCHAPPIJ	NN	LIFE	203%
ASR LEVENSVERZEKERING	ASR	LIFE	182%
AEGON LEVENSVERZEKERING	AEGON	LIFE	120%
SRLEV	VIVAT	LIFE	149%
ACHMEA PENSIOEN EN LEVENSVERZEKERINGEN	ACHMEA	LIFE	130%
DELTA LLOYD LEVENSVERZEKERING	DELTA LLOYD	LIFE	135%
OPTAS PENSIOENEN	AEGON	LIFE	540%
AEGON SPAARKAS	AEGON	LIFE	440%
PROTEQ LEVENSVERZEKERING	VIVAT	LIFE	181%
ABN AMRO LEVENSVERZEKERING	DELTA LLOYD	LIFE	120%
GENERALI LEVENSVERZEKERING MAATSCHAPPIJ	GENERALI	LIFE	115%
MOVIR	NN	NON-LIFE	129%
ACHMEA SCHADEVERZEKERINGEN	ACHMEA	NON-LIFE	137%
ASR SCHADEVERZEKERING	ASR	NON-LIFE	180%
NN SCHADEVERZEKERING MAATSCHAPPIJ	NN	NON-LIFE	127%
DELTA LLOYD SCHADEVERZEKERING	DELTA LLOYD	NON-LIFE	137%
REAAL SCHADEVERZEKERINGEN	VIVAT	NON-LIFE	152%
AEGON SCHADEVERZEKERING	AEGON	NON-LIFE	159%
UNIVE SCHADE	UNIVE	NON-LIFE	151%
GENERALI SCHADEVERZEKERING MAATSCHAPPIJ	GENERALI	NON-LIFE	111%
ABN AMRO SCHADEVERZEKERING	DELTA LLOYD	NON-LIFE	208%

FIGURE 62: DUTCH INSURANCE GROUPS ANALYSED

INSURANCE GROUP	SCR RATIO
ACHMEA	181%
AEGON	157%
ASR	188%
DELTA LLOYD	143%
NN	241%
UNIVE	324%
VIVAT	175%

Appendix B: Selected figures by Dutch undertaking

In the table in Figure 63 the relative size of the risk capitals are shown as percentages of total SCR. Note that entities with full or partial internal models are excluded, as the risk categories might differ from the categories in the standard formula.

FIGURE 63: SPLIT BETWEEN SCR COMPONENTS

	MARKET RISK	COUNTER PARTY RISK	LIFE UW RISK	HEALTH UW RISK	NONLIFE UW RISK	DIVERSIFICATION	OPERATIONAL RISK	LAC TP	LAC DT
ACHMEA PENSIOEN EN LEVENSVERZEKERINGEN	59%	17%	76%			-38%	6%	0%	-20%
ACHMEA SCHADEVERZEKERINGEN	65%	13%		36%	74%	-60%			
AEGON SCHADEVERZEKERING	17%	8%		99%	26%	-38%	10%		-22%
ASR LEVENSVERZEKERING	79%	18%	51%			-37%			
ASR SCHADEVERZEKERING	41%	6%		77%	47%	-57%	8%		-22%
DELTA LLOYD LEVENSVERZEKERING	62%	22%	61%			-39%	8%		-14%
DELTA LLOYD SCHADEVERZEKERING	27%	12%		37%	88%	-50%	10%		-24%
GENERALI LEVENSVERZEKERING MAATSCHAPPIJ	36%	10%	73%			-26%	7%		
GENERALI SCHADEVERZEKERING MAATSCHAPPIJ	11%	10%		18%	83%	-27%	13%		-7%
REAAL SCHADEVERZEKERINGEN	9%	4%		76%	59%	-46%	6%		-8%
SRLEV	40%	11%	70%			-29%	7%	-1%	
PROTEQ LEVENSVERZEKERING	84%	6%	31%			-22%	3%		-1%
ABN AMRO SCHADEVERZEKERING	41%	7%		7%	99%	-34%	12%		-33%
ABN AMRO LEVENSVERZEKERING	51%	9%	100%			-34%	7%		-33%
UNIVE SCHADE	32%	3%		33%	93%	-47%	8%		-24%

Appendix C: Selected figures by Dutch insurance groups

In Figure 64, a comparison is provided of the premiums (split by line of business), assets and technical provisions (split by line of business) for the group entities considered. Note that Generali Group is not included as no Dutch consolidated numbers are available.

FIGURE 64: RISKS AND OTHER FIGURES BY UNDERTAKING

	PREMIUMS			ASSETS	TOTAL GROSS TECHNICAL PROVISIONS		
	LIFE PREMIUM WRITTEN	NON-LIFE PREMIUM WRITTEN (DIRECT)	NON-LIFE PREMIUM WRITTEN (PROPORTIONAL REINSURANCE)	TOTAL ASSETS	GROSS TECHNICAL PROVISIONS - LIFE	GROSS TECHNICAL PROVISIONS - NON-LIFE	GROSS TECHNICAL PROVISIONS
ACHMEA GROUP	2,614	16,845	34	79,753	54,853	9,013	63,866
AEGON GROUP	23,817	697	42	186,162	146,567	305	146,873
ASR GROUP	2,343	1,977	8	57,018	40,947	1,346	42,294
DELTA LLOYD GROUP	2,411	1,253	53	68,346	53,698	1,202	54,901
NN GROUP	8,206	1,193	3	132,304	105,657	1,211	106,868
UNIVE GROUP	20	404	0	1,273	54	419	473
VIVAT GROUP	NO PREMIUM FIGURES PROVIDED	NO PREMIUM FIGURES PROVIDED	NO PREMIUM FIGURES PROVIDED	59,485	49,688	767	50,455
ALL	39,411	22,371	140	584,341	451,466	14,263	465,729

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