GERMANY
Key characteristics of the insurance market

1 Introduction

1.1 General

At the end of 2017 (2017 Q4), 338 insurance companies[1] in Germany submitted their Solvency II related reporting package to the German National Supervisory Authority (NSA). These companies accounted for 19,555% of Total assets of insurance undertakings operating within the European Union (EU).

Table 1 the number of Solvency II reporting submissions in Germany by insurance activities and the importance of the country within the EU, based on Total assets.

Table 1 - Insurance reporting submissions

Insurance reporting submissions	#
Life undertakings	89
Non-Life undertakings	236
Reinsurance undertakings	8
Composite undertakings	5
Total	**338**
Total assets DE / Total assets EU %	**19,555%**
Ranking DE based on Total assets EU	**3**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

1.2 Balance sheet

At the end of 2017 (2017 Q4), Germany was the number 3 country in the EU insurance market in terms of assets held with an amount of 2 208 billion EUR reported under Solvency II rules.

With regards to the Assets held for index-linked and unit-linked contracts, Germany ranked number 8 in terms of absolute amount with 111 billion EUR invested in this category. However, with 5% of Total assets of this category, Germany was significantly below the EU average, i.e. 24,3% in terms of Total assets.

In terms of technical provisions, 54,9% of the total balance sheet relates to the life business (i.e. non index-linked and unit-linked business), while 8,4% represented non-life obligations.

[1] In the report, the term 'insurance companies' indicates both direct insurance and reinsurance companies. The insurance market covered in this factsheet therefore refers to insurers and reinsurers.

Table 2 - Solvency II balance sheet (S.02.01) and EU comparison (solo)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Investments, deposits, cash and cash equivalents	1 985 959	2	89,9%	67,8%	67,3%	22,6%	90,1%	17,2%
Assets held for index-linked and unit-linked contracts	110 942	8	5,0%	24,2%	24,3%	2,5%	59,3%	16,2%
Other assets	111 085	3	5,0%	8,1%	8,4%	2,1%	19,5%	4,9%
Total assets	**2 207 986**	3	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**0,0%**
Technical provisions - life	1 212 381	2	54,9%	46,3%	32,2%	3,0%	64,2%	17,9%
Technical provisions - non-life	186 193	1	8,4%	6,6%	12,9%	2,4%	38,5%	9,1%
Technical provisions - index-linked and unit-linked	119 572	8	5,4%	25,1%	23,4%	2,4%	58,4%	16,0%
Other liabilities	229 876	2	10,4%	8,9%	9,0%	4,0%	21,3%	3,9%
Total liabilities	**1 748 022**	3	**79,2%**	**86,9%**	**77,6%**	**49,1%**	**92,7%**	**11,1%**
Excess of assets over liabilities	459 964	1	20,8%	13,1%	22,4%	7,3%	50,9%	11,1%
Total liabilities + Excess of assets over liabilities	**2 207 986**	3	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**0,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

The balance sheet item Investments, deposits, cash and cash equivalents will be further detailed in section 2, while section 3 will focus on Assets held for index-linked and unit-linked contracts.

1.3 Solvency II ratios

At the end of 2017 (2017 Q4), the German insurance market as a whole had available own funds that were more than triple the Solvency Capital Requirement (SCR) levels required by the European Solvency II Directive. The reported SCR ratio amounted to 338% with long-term guarantee (LTG) and transitional measures and is significantly higher than that of the EU, which amounted to 237% at year-end 2017. Out of the 28 EU Member States, Germany is ranked at the 2nd position in terms of the reported SCR ratios.

Table 3 - Solvency II own funds and SCR (S.23.01) and EU comparison (solo)

in Mio EUR	DE		EU				
	Amount	Rank	%	Avg	Min	Max	StD
Total available own funds to meet the SCR	457 148	1	-	-	-	-	-
SCR	134 537	2	-	-	-	-	-
Surplus available own funds	**322 610**	**1**	-	**-**	**-**	**-**	**-**
Ratio of Eligible own funds to SCR	**338%**	**2**	**237%**	**225%**	**135%**	**361%**	**52%**
Ratio of Eligible own funds to SCR (10th percentile)	165%	4	136%	138%	110%	193%	19%
Ratio of Eligible own funds to SCR (25th percentile)	206%	3	162%	164%	128%	214%	24%
Ratio of Eligible own funds to SCR (50th percentile)	300%	1	215%	208%	144%	300%	37%
Ratio of Eligible own funds to SCR (75th percentile)	445%	1	306%	280%	164%	445%	59%
Ratio of Eligible own funds to SCR (90th percentile)	643%	1	457%	396%	173%	643%	99%
Ratio of Eligible own funds to MCR	**933%**	**1**	**640%**	**613%**	**282%**	**933%**	**170%**

Source: EIOPA statistics and Deloitte-CEPS analysis

EIOPA's report on long-term guarantees measures and measures on equity risk published on 18 December 2018 mentions the average impact of the use of LTG and transitional measures. According to that report, at year-end 2017, German participants reported an SCR ratio of 345% including the application of LTGs and transitionals. Removing the measures caused a significant decrease of the SCR ratio to 298%.[2]

[2] https://eiopa.europa.eu/Publications/Reports/2018-12-18%20_LTG%20AnnualReport2018.pdf

2 Investments, deposits, cash and cash equivalents

2.1 Scope

The asset allocation of German insurance undertakings is mainly analysed through the reported Solvency II Exposure List (S.06.02). The classification of the Solvency II Balance Sheet (S.02.01) follows the legal nature of the assets in terms of classification that can differ from the exposures reporting.

Based upon the comparative view below, we note that Total Investments, deposits, cash and cash equivalents reported in the Solvency II Exposure List (S.06.02) and Solvency II Balance Sheet (S.02.01) differ[3] slightly with the latter being higher than the former. In terms of allocation in percentage, we note a slight increase towards the Collective Investments Undertakings asset class when going from Solvency II Balance Sheet to the Exposure list.

Table 4 - Solvency II balance sheet (S.02.01) and Solvency II exposure list (S.06.02) comparison

Ve	Exposure list DE		Solvency II balance sheet DE		Difference
	#	%	#	%	#
Life undertakings	76	28,4%	89	26,3%	-13
Non-Life undertakings	181	67,5%	236	69,8%	-55
Reinsurance undertakings	7	2,6%	8	2,4%	-1
Undertakings pursuing both life and non-life insurance activity	4	1,5%	5	1,5%	-1
Total	**268**	**100,0%**	**338**	**100,0%**	**-70**

in Mio EUR	Exposure list DE		Solvency II balance sheet DE		Difference
	Amount	%	Amount	%	%
Holdings in related undertakings, incl. participations and equities	316 478	16,3%	338 018	17,0%	-0,7%
Holdings in related undertakings, including participations	n/a	n/a	325 559	16,4%	n/a
Equities	n/a	n/a	12 459	0,6%	n/a
Equities - listed	n/a	n/a	6 615	0,3%	n/a
Equities - unlisted	n/a	n/a	5 844	0,3%	n/a
Collective Investments Undertakings	548 676	28,3%	552 723	27,8%	0,5%
Bonds	880 930	45,5%	900 564	45,3%	0,1%
Loans and mortgages	99 671	5,1%	101 257	5,1%	0,0%
Property	32 727	1,7%	34 087	1,7%	0,0%
Deposits	47 140	2,4%	47 676	2,4%	0,0%
Cash and cash equivalents	10 312	0,5%	11 103	0,6%	0,0%
Other investments	530	0,0%	531	0,0%	0,0%
Total	**1 936 466**	**100,0%**	**1 985 959**	**100,0%**	**0,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

2.1.1 Listed and unlisted equity

The distinction between listed and unlisted equity is made based upon the reported Solvency II Balance Sheet (S.02.01). Table 5 compares the listed and unlisted equity, whereby Holdings in related undertakings (including participations) are excluded.

Table 5 - Listed and unlisted equity exposure based upon Solvency II balance sheet (S.02.01)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Equities - listed	6 615	8	53,1%	83,7%	75,0%	12,8%	99,6%	21,1%
Equities - unlisted	5 844	3	46,9%	16,3%	25,0%	0,4%	87,0%	21,1%
Total equities	**12 459**	**5**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**0,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

[3] Some companies reporting under Solvency II are exempted from reporting the Solvency II Exposure List. The decision to exempt certain companies from particular reporting obligations lies with individual National Competent Authorities.

Based upon the quarterly reporting as of Q4 2017, German insurers invested 53,1% of their directly-held equity positions in listed equity in comparison to an average of 75,0% in the EU. With an amount of 6 615 million EUR, Germany ranked number 8 in the EU.

With an invested amount of 5 844 million EUR, unlisted equity constituted a significant portion of the equity investment category of the directly-held equity investments, i.e. 46,9%. Compared to the EU average, this placed Germany as the number 3 in the EU.

2.2 Asset exposure

From an asset exposure perspective, the insurance market in Germany invested significantly in Government bonds [4] and Corporate bonds (in total 44% of Total Investments, deposits, cash and cash equivalents), Collective Investment Undertakings (28,3%), and Equity (16,3%).

Within the bond categories, the insurance market was significantly less exposed to government securities (17,5%) than to corporate debt (26,5%), categories for which Germany ranked number 3 and number 2 in the EU, respectively. Comparing the different assets classes, we note that the government bonds asset class shows the highest standard deviation of 18,9%.

The category of Collective Investment Undertakings was the second most important for the German insurance market in terms of asset exposures. Within this category, the industry was mainly exposed to Debt funds, Equity funds, and Other for which Germany ranked respectively number 1, number 2, and number 1 in the EU.

Equity was the fourth category to which the German insurers had the most exposure. Equity of real estate related corporation constitutes 0,6% within the 16,3% of the total equity exposure.

[4] Note that the relative weight of government and corporate bond only relate to direct investment. "Debt funds" also compromises of bonds and a complete look-through might change the relative weight of both bond categories.

Table 6 - Asset exposure based upon Solvency II exposure list (S.06.02)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Equity	**316 478**	**1**	**16,3%**	**12,0%**	**9,5%**	**1,1%**	**28,1%**	**6,5%**
Common equity	291 981	1	15,1%	10,4%	7,8%	1,0%	22,5%	6,0%
Equity of real estate related corporation	11 301	2	0,6%	1,0%	1,1%	0,0%	4,0%	1,2%
Other equity	13 197	1	0,7%	0,6%	0,6%	0,0%	2,0%	0,7%
Collective Investment Undertakings	**548 676**	**1**	**28,3%**	**19,2%**	**12,8%**	**1,5%**	**41,6%**	**9,3%**
Equity funds	53 273	2	2,8%	3,2%	2,7%	0,4%	10,9%	2,4%
Private equity funds	4 587	3	0,2%	0,5%	0,5%	0,0%	6,9%	1,3%
Debt funds	322 410	1	16,6%	7,8%	5,6%	0,8%	18,0%	4,9%
Money market funds	2 258	6	0,1%	2,3%	1,1%	0,0%	6,3%	1,6%
Asset allocation funds	28 683	1	1,5%	1,1%	0,8%	0,0%	3,9%	1,0%
Real estate funds	27 858	2	1,4%	1,6%	0,8%	0,0%	3,3%	0,9%
Alternative funds	2 934	5	0,2%	0,4%	0,3%	0,0%	3,1%	0,6%
Infrastructure funds	3 455	2	0,2%	0,2%	0,1%	0,0%	0,9%	0,2%
Other	103 217	1	5,3%	2,0%	0,9%	0,0%	7,2%	1,7%
Government bonds	**338 482**	**3**	**17,5%**	**28,7%**	**39,7%**	**10,0%**	**77,0%**	**18,9%**
Corporate bonds	**513 798**	**2**	**26,5%**	**26,9%**	**21,6%**	**1,8%**	**47,3%**	**11,2%**
Structured notes	**21 774**	**2**	**1,1%**	**1,3%**	**0,5%**	**0,0%**	**2,5%**	**0,6%**
Collateralised securities	**6 876**	**3**	**0,4%**	**0,6%**	**0,6%**	**0,0%**	**9,3%**	**1,8%**
Mortgages and loans	**99 671**	**1**	**5,1%**	**4,8%**	**3,8%**	**0,3%**	**26,3%**	**5,2%**
Property	**32 727**	**2**	**1,7%**	**2,0%**	**3,5%**	**0,8%**	**11,6%**	**2,6%**
Deposits	**47 140**	**2**	**2,4%**	**2,8%**	**3,6%**	**0,2%**	**16,6%**	**3,6%**
Cash and cash equivalents	**10 312**	**5**	**0,5%**	**1,4%**	**4,3%**	**0,5%**	**16,6%**	**3,5%**
Other investments	**530**	**5**	**0,0%**	**0,1%**	**0,1%**	**0,0%**	**0,9%**	**0,3%**
Not reported	**0**	**-**	**0,0%**	**0,0%**	**0,0%**	**0,0%**	**0,3%**	**0,1%**
Total Investments, deposits, cash and cash equivalents	**1 936 466**	**2**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**0,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

2.2.1 Asset exposures between Life, Non-Life and Composite insurance undertakings, and reinsurers

Table 7, based upon the Asset Exposure reporting (S.06.02) of Q4 2017, gives further insight into the investment behaviour of Life, Non-Life and Composite insurance companies, and reinsurers in Germany.

Table 7 - Asset exposures based upon Solvency II exposure list (S.06.02) for Life, Non-Life and Composite insurance undertakings, and reinsurers

in %	DE			EU		
	Life	Non-life	Composite and reinsurance	Life	Non-life	Composite and reinsurance
Equity	**3,6%**	**14,7%**	**56,0%**	**6,6%**	**18,3%**	**16,5%**
Common equity	2,6%	12,6%	55,4%	5,0%	16,2%	14,9%
Equity of real estate related corporation	0,6%	0,6%	0,4%	1,0%	0,8%	1,2%
Other equity	0,4%	1,5%	0,2%	0,6%	1,3%	0,4%
Collective Investment Undertakings	**36,0%**	**29,6%**	**4,0%**	**22,4%**	**22,3%**	**13,8%**
Equity funds	3,2%	2,4%	2,0%	3,7%	2,9%	2,7%
Private equity funds	0,3%	0,3%	0,0%	0,5%	0,5%	0,5%
Debt funds	23,1%	14,6%	1,1%	9,7%	9,7%	4,7%
Money market funds	0,2%	0,1%	0,0%	2,8%	1,4%	2,0%
Asset allocation funds	1,9%	1,7%	0,0%	1,3%	1,2%	0,9%
Real estate funds	1,7%	1,8%	0,0%	1,6%	1,8%	1,4%
Alternative funds	0,2%	0,2%	0,1%	0,3%	0,3%	0,5%
Infrastructure funds	0,2%	0,3%	0,0%	0,2%	0,2%	0,3%
Other	5,3%	8,3%	0,7%	2,3%	4,3%	0,8%
Government bonds	**19,9%**	**16,2%**	**12,5%**	**28,1%**	**19,1%**	**33,4%**
Corporate bonds	**28,2%**	**32,6%**	**12,2%**	**29,2%**	**29,3%**	**22,9%**
Structured notes	**1,6%**	**0,9%**	**0,2%**	**1,4%**	**0,6%**	**1,5%**
Collateralised securities	**0,2%**	**0,2%**	**0,9%**	**0,8%**	**0,6%**	**0,5%**
Mortgages and loans	**7,6%**	**2,6%**	**2,0%**	**7,4%**	**3,2%**	**2,3%**
Property	**1,8%**	**1,7%**	**1,3%**	**2,0%**	**2,5%**	**1,7%**
Deposits	**0,7%**	**0,8%**	**10,0%**	**0,8%**	**1,6%**	**5,8%**
Cash and cash equivalents	**0,3%**	**0,8%**	**0,8%**	**1,0%**	**2,5%**	**1,4%**
Other investments	**0,0%**	**0,0%**	**0,1%**	**0,2%**	**0,0%**	**0,1%**
Not reported	**0,0%**	**0,0%**	**0,0%**	**0,0%**	**0,0%**	**0,0%**
Total Investments, deposits, cash and cash equivalents	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

At EU level Non-Life insurers invested a significantly higher portion of their Investments in Equity (18,3% equity investments) in comparison to pure Life insurers (6,6% equity investments). The same conclusion can be drawn in Germany, and we note that Non-Life insurers invested 3 to 4 times more of their assets into this category than their Life counterparts.

On the other hand, at EU level, pure Life insurers and also Composite insurers allocated a larger share of their investments to government bonds as compared to Non-Life insurers. However, we observe that the Equity investments of German Composite insurers and reinsurers are larger than the investments of their EU counterparts: German Composite insurers and reinsurers reported 56% of their investments in this category, in sharp contrast to the EU level which amounted to 16,5%.

2.3 Equity exposure

Based upon the information included in the Solvency II Exposure List (S.06.02) and Balance Sheet (S.02.01), equity exposures can be calculated and presented in different ways:

- Equity exposure as the sum of Equity (Common equity, Equity of real estate related corporation and Other equity), Equity and Private equity funds, and Equity risk included in structured notes;
- Equity of real estate related corporation could be seen as a property exposure. Therefore equity exposures are presented including and excluding Equity of real estate related corporation;
- The equity amounts of the Solvency II Exposure List does not provide further details as to whether the equity exposures relate to listed or unlisted equity positions. In addition, the Solvency II Exposure List does not mention whether the equity relates to Holdings in related undertakings, including participations;
- Therefore the listed and unlisted share amounts reported in the Solvency II Balance Sheet are considered and integrated as an equity exposure indicator. A rescaling is performed in case a difference is noted between the two Solvency II information sets (Exposure List versus Balance Sheet). The adjusted equity exposure stemming from this analysis excludes the Equity exposure coming from Holdings in related undertakings, including participations. These holdings can potentially be important within insurance groups.

Table 8 - Equity exposure based upon Solvency II balance sheet (S.02.01) and Solvency II exposure list (S.06.02)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Equity	**316 478**	**1**	**16,3%**	**12,0%**	**9,5%**	**1,1%**	**28,1%**	**6,5%**
Common equity	291 981	1	15,1%	10,4%	7,8%	1,0%	22,5%	6,0%
Equity of real estate related corporation	11 301	2	0,6%	1,0%	1,1%	0,0%	4,0%	1,2%
Other equity	13 197	1	0,7%	0,6%	0,6%	0,0%	2,0%	0,7%
Collective Investment Undertakings - Equity funds	**57 860**	**1**	**3,0%**	**3,8%**	**3,2%**	**0,4%**	**14,7%**	**3,5%**
Equity funds	53 273	2	2,8%	3,2%	2,7%	0,4%	10,9%	2,4%
Private equity funds	4 587	3	0,2%	0,5%	0,5%	0,0%	6,9%	1,3%
Structured notes - Equity risk	**84**	**9**	**0,0%**	**0,2%**	**0,1%**	**0,0%**	**0,6%**	**0,1%**
Total Equity exposure	**374 423**	**1**	**19,3%**	**16,0%**	**12,7%**	**2,5%**	**37,4%**	**8,4%**
Equity without Equity of real estate related corporation	**305 178**	**1**	**15,8%**	**11,0%**	**8,4%**	**1,1%**	**24,1%**	**6,1%**
Equity exposure without Equity of real estate related corporation	**363 122**	**1**	**18,8%**	**15,0%**	**11,7%**	**2,4%**	**33,3%**	**7,9%**
Equities market value balance sheet (rescaled to CIC scope)	**12 101**	**5**	**0,6%**	**3,6%**	**3,2%**	**0,1%**	**20,6%**	**4,0%**
Equities - listed (rescaled to CIC scope)	6 425	8	0,3%	3,0%	2,6%	0,0%	15,4%	3,2%
Equities - unlisted (rescaled to CIC scope)	5 676	3	0,3%	0,6%	0,6%	0,0%	5,2%	1,0%
Equity exposure based upon (Un)Listed equities (rescaled)	**70 046**	**3**	**3,6%**	**7,6%**	**6,5%**	**1,2%**	**29,8%**	**6,7%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

The observed standard deviations at EU level are relatively high given the asset allocation in percentage between the different asset classes at EU level.

In Germany, we note that equity exposures coming from Collective Investment Undertakings amount to 3% and are higher than the listed and unlisted equity exposures which in total amount to 0,6%. Hereby the listed and unlisted equities in Germany are very similar to the asset allocation at EU level.

2.3.1 Direct and indirect equity exposure

Table 9 - Direct and indirect equity exposure based upon Solvency II exposure list (S.06.02)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Direct equity	**316 478**	**1**	**84,5%**	**75,2%**	**73,4%**	**39,2%**	**94,5%**	**15,9%**
Common equity	291 981	1	78,0%	64,8%	59,4%	28,6%	93,3%	19,0%
Equity of real estate related corporation	11 301	2	3,0%	6,4%	8,4%	0,0%	39,1%	9,6%
Other equity	13 197	1	3,5%	3,9%	5,7%	0,0%	35,3%	8,8%
Indirect equity	**57 944**	**2**	**15,5%**	**24,8%**	**26,6%**	**5,5%**	**60,8%**	**15,9%**
Collective Investment Undertakings - Equity funds	57 860	2	15,5%	23,6%	25,9%	4,6%	60,6%	15,7%
Equity funds	53 273	2	14,2%	20,2%	22,8%	4,6%	52,9%	13,4%
Private equity funds	4 587	3	1,2%	3,3%	3,1%	0,0%	28,4%	5,7%
Structured notes - Equity risk	84	9	0,0%	1,3%	0,7%	0,0%	4,0%	1,0%
Total Equity exposure	**374 423**	**1**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**0,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

In 2017 Q4, the insurance market in Germany was invested over five times more in Direct equity (84,5% of Total equity) than in Indirect equity (15,5% of Total equity). According to the German NSA, the prevalence of direct versus indirect equity may stem from the reinsurers/parent complex, which might also account for the "home bias" that is given below. For direct insurers, the NSA expect a greater importance of indirect and (within Europe) diversified investments.

In terms of direct equity exposure, Germany ranked number 1 and number 2 in the EU, with regards respectively to the exposure amount to Common equity and Equity of real estate related corporation.

Within the Indirect equity category, Equity funds constituted the bulk of investments with 14,2% of Total equity, significantly more than the amount invested in Private equity funds.

2.3.2 Equity by location

Table 10 - Equity exposure by location based upon Solvency II exposure list (S.06.02)

in Mio EUR	DE			
	EU home	EU other	outside EU (1)	Total
Equity	**212 571**	**84 440**	**19 468**	**316 478**
Common equity	191 920	82 277	17 784	291 981
Equity of real estate related corporation	9 524	742	1 035	11 301
Other	11 128	1 421	648	13 197
Collective Investment Undertakings - Equity funds	**49 179**	**8 452**	**229**	**57 860**
Equity funds	48 565	4 587	121	53 273
Private equity funds	614	3 865	108	4 587
Structured notes - Equity risk	**18**	**0**	**66**	**84**
Total Equity exposure	**261 768**	**92 892**	**19 763**	**374 423**

in %	DE			
	EU home	EU other	outside EU (1)	Total
Equity	**67,2%**	**26,7%**	**6,2%**	**100,0%**
Common equity	65,7%	28,2%	6,1%	100,0%
Equity of real estate related corporation	84,3%	6,6%	9,2%	100,0%
Other	84,3%	10,8%	4,9%	100,0%
Collective Investment Undertakings - Equity funds	**85,0%**	**14,6%**	**0,4%**	**100,0%**
Equity funds	91,2%	8,6%	0,2%	100,0%
Private equity funds	13,4%	84,3%	2,4%	100,0%
Structured notes - Equity risk	**21,4%**	**0,0%**	**78,6%**	**100,0%**
Total Equity exposure	**69,9%**	**24,8%**	**5,3%**	**100,0%**

(1) The following countries are included in the class 'outside EU': IS, LI, NO, AU, CA, JP, US, CH and countries grouped under the caption 'Rest of World'. In addition some investments are not assigned to an individual country and are also included in this class.

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

Based upon the Q4 2017 reporting with regards to the location of equity investments, insurers established in Germany favoured domestic investments to a large extent, dedicating to these 67,2% of their direct equity investments, and 85% of their indirect investments.

Table 10 also showed that besides the home market, Germany insurers invested significantly more in equity of other EU Member States than that of non-EU Member States. The Netherlands, Luxemburg and the United States were the preferred destinations.

Table 11 - Direct equity exposure by location based upon Solvency II exposure list (S.06.02)

in Mio EUR	DE	
	Amount	%
Home country	**212 571**	**67,2%**
DE	212 571	67,2%
Top 5 countries (outside home country)	**86 905**	**27,5%**
NL	47 668	15,1%
LU	20 579	6,5%
US	11 070	3,5%
MT	3 917	1,2%
UK	3 671	1,2%
Home + Top 5 countries (outside home country)	**299 477**	**94,6%**
Total Direct equity exposure (with real estate corporation)	**316 478**	**100,0%**

in Mio EUR	DE	
	Amount	%
Home country	**203 047**	**66,5%**
DE	203 047	66,5%
Top 5 countries (outside home country)	**85 626**	**28,1%**
NL	47 654	15,6%
LU	20 336	6,7%
US	10 079	3,3%
MT	3 917	1,3%
UK	3 640	1,2%
Home + Top 5 countries (outside home country)	**288 673**	**94,6%**
Total Direct equity exposure (without real estate corporation)	**305 178**	**100,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

3 Index-linked and unit-linked investments

3.1 Scope

Based upon the comparative view below, we note a slight difference with respect to the Assets held for index-linked and unit-linked contracts reported in the Solvency II Exposure List (S.06.02) and Solvency II Balance Sheet (S.02.01).

Table 12 - Solvency II balance sheet (S.02.01) and Solvency II exposure list (S.06.02) comparison

in number	Exposure list DE		Solvency II balance sheet DE		Difference
	#	%	#	%	#
Life undertakings	76	28,4%	89	26,3%	-13
Non-Life undertakings	181	67,5%	236	69,8%	-55
Reinsurance undertakings	7	2,6%	8	2,4%	-1
Undertakings pursuing both life and non-life insurance activity	4	1,5%	5	1,5%	-1
Total	**268**	**100,0%**	**338**	**100,0%**	**-70**

in Mio EUR	Exposure list DE		Solvency II balance sheet DE		Difference
	Amount	%	Amount	%	%
Assets held for index-linked and unit-linked contracts	106 834	100,0%	110 942	100,0%	-3,7%

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

3.2 Asset exposure

Table 13 depicts a more detailed view of the Assets held for index-linked and unit-linked contracts, based upon the Solvency II exposure list (S.06.02).

Table 13 - Asset exposure based upon Solvency II exposure list (S.06.02)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Equity	**27**	**19**	**0,0%**	**17,9%**	**4,5%**	**0,0%**	**30,1%**	**7,1%**
Common equity	27	19	0,0%	16,5%	3,9%	0,0%	28,8%	6,3%
Equity of real estate related corporation	0	-	0,0%	0,8%	0,3%	0,0%	1,5%	0,5%
Other equity	0	-	0,0%	0,6%	0,3%	0,0%	4,1%	0,9%
Collective Investment Undertakings	**104 151**	**6**	**97,5%**	**64,6%**	**73,1%**	**30,1%**	**97,5%**	**16,3%**
Equity funds	61 384	3	57,5%	27,3%	29,2%	11,2%	57,5%	10,5%
Private equity funds	7	11	0,0%	0,2%	0,2%	0,0%	2,9%	0,6%
Debt funds	9 822	8	9,2%	12,2%	19,0%	4,8%	47,5%	11,4%
Money market funds	546	9	0,5%	2,0%	1,7%	0,0%	7,5%	1,8%
Asset allocation funds	20 083	6	18,8%	14,4%	13,1%	0,4%	30,5%	7,7%
Real estate funds	825	5	0,8%	1,4%	0,6%	0,0%	6,2%	1,2%
Alternative funds	647	8	0,6%	1,9%	2,4%	0,0%	16,3%	3,8%
Infrastructure funds	0	-	0,0%	0,1%	0,1%	0,0%	2,4%	0,5%
Other	10 837	7	10,1%	5,1%	6,9%	0,0%	44,3%	10,0%
Government bonds	**1**	**26**	**0,0%**	**5,9%**	**6,9%**	**0,0%**	**31,4%**	**8,4%**
Corporate bonds	**364**	**15**	**0,3%**	**4,5%**	**6,0%**	**0,0%**	**22,7%**	**6,9%**
Structured notes	**1 732**	**5**	**1,6%**	**1,6%**	**4,1%**	**0,0%**	**18,9%**	**4,9%**
Collateralised securities	**0**	**-**	**0,0%**	**0,1%**	**0,1%**	**0,0%**	**0,9%**	**0,2%**
Mortgages and loans	**537**	**4**	**0,5%**	**0,3%**	**0,2%**	**-3,7%**	**2,5%**	**1,0%**
Property	**0**	**-**	**0,0%**	**1,2%**	**0,6%**	**0,0%**	**7,6%**	**1,5%**
Deposits	**4**	**18**	**0,0%**	**1,2%**	**2,0%**	**-0,3%**	**14,5%**	**3,3%**
Cash and cash equivalents	**17**	**20**	**0,0%**	**1,2%**	**2,2%**	**0,0%**	**8,5%**	**2,5%**
Other investments	**0**	**-**	**0,0%**	**0,3%**	**0,3%**	**0,0%**	**8,1%**	**1,5%**
Not reported	**0**	**-**	**0,0%**	**1,1%**	**0,1%**	**0,0%**	**2,3%**	**0,4%**
Total Investments, deposits, cash and cash equivalents	**106 834**	**8**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**0,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

The Collective Investment Undertakings (97,5%) represent the most important asset classes of the index-linked and unit-linked investments. Overall, we note a significantly different asset exposure allocation in comparison to the asset exposure for non index-linked and unit-linked investments. Hereby we refer to section 2 for further details.

Relatively to the EU average, we observe a significant difference between the portion of index-linked and unit-linked related assets that were invested in Collective Investment Undertakings, 97,5% in Germany compared to 73,1% in the EU.

3.3 Equity exposure

The Solvency II balance sheet (S.02.01) does not include a further split in different asset classes for the Assets held for index-linked and unit-linked contracts. Hence the rescaling exercise as presented in section 2 cannot be performed here.

Table 14 - Equity exposure based upon Solvency II exposure list (S.06.02)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Equity	**27**	**19**	**0,0%**	**19,3%**	**4,5%**	**0,0%**	**30,1%**	**7,1%**
Common equity	27	19	0,0%	18,0%	3,9%	0,0%	28,8%	6,3%
Equity of real estate related corporation	0	-	0,0%	0,8%	0,3%	0,0%	1,5%	0,5%
Other equity	0	-	0,0%	0,4%	0,3%	0,0%	4,1%	0,9%
Collective Investment Undertakings - Equity funds	**61 391**	**3**	**57,5%**	**26,5%**	**29,3%**	**11,2%**	**57,5%**	**10,4%**
Equity funds	61 384	3	57,5%	26,5%	29,2%	11,2%	57,5%	10,5%
Private equity funds	7	11	0,0%	0,1%	0,2%	0,0%	2,9%	0,6%
Structured notes - Equity risk	**1 133**	**5**	**1,1%**	**1,2%**	**2,7%**	**0,0%**	**15,0%**	**3,5%**
Total Equity exposure	**62 552**	**4**	**58,6%**	**47,1%**	**36,5%**	**11,7%**	**58,6%**	**10,9%**
Equity without Equity of real estate related corporation	**27**	**1**	**0,0%**	**16,0%**	**4,2%**	**0,0%**	**29,2%**	**6,8%**
Equity exposure without Equity of real estate related corporation	**62 552**	**4**	**58,6%**	**40,0%**	**36,2%**	**11,7%**	**58,6%**	**10,8%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

In Germany, we note that total equity exposures related to index-linked and unit-linked contracts (58,6%) are significantly higher in comparison to non index-linked and unit-linked contracts (19,3%). Equity funds are the main contributors to the total equity exposures.

3.3.1 Direct and indirect equity exposure

Table 15 - Direct and indirect equity exposure based upon Solvency II exposure list (S.06.02)

in Mio EUR	DE			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Direct equity	**27**	**19**	**0,0%**	**38,3%**	**11,1%**	**0,0%**	**54,2%**	**15,2%**
Common equity	27	19	0,0%	35,4%	9,6%	0,0%	51,8%	13,2%
Equity of real estate related corporation	0	-	0,0%	1,7%	0,7%	0,0%	4,0%	1,1%
Other equity	0	-	0,0%	1,3%	0,8%	0,0%	9,7%	2,2%
Indirect equity	**62 524**	**3**	**100,0%**	**61,7%**	**88,9%**	**45,8%**	**100,0%**	**15,2%**
Collective Investment Undertakings - Equity funds	61 391	3	98,1%	59,1%	81,5%	45,7%	100,0%	15,5%
Equity funds	61 384	3	98,1%	58,6%	81,0%	44,9%	100,0%	16,0%
Private equity funds	7	11	0,0%	0,5%	0,5%	0,0%	6,9%	1,4%
Structured notes - Equity risk	1 133	5	1,8%	2,6%	7,4%	0,0%	35,8%	9,6%
Total Equity exposure	**62 552**	**4**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**0,0%**

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

In 2017 Q4, German insurers invested almost all of their Assets held for index-linked and unit-linked contracts in Indirect equity.

In terms of direct equity exposure, Germany ranked number 19 in the EU, given the investments in Direct equity are negligible (27 million EUR).

Within the Indirect equity category, Equity funds constituted the bulk of investments, amounting to 98,1% of Total equity whereas allocation to Private equity funds were inexistent.

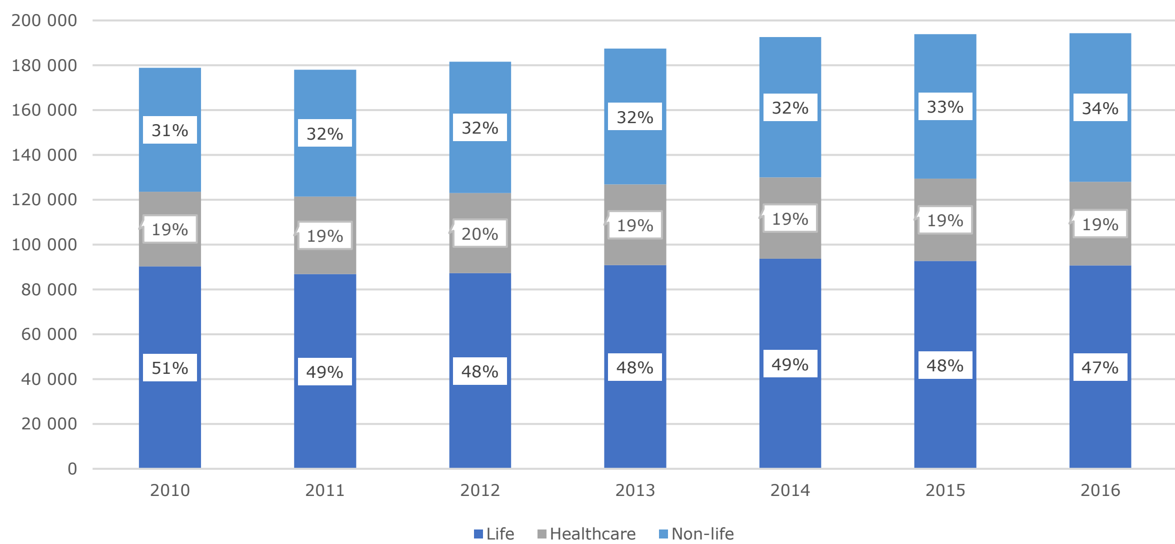
4 Insurance products

4.1 Overview

This section covers the most important insurance products offered in Germany and the volume of the market. Data reported in this section is obtained from the Gesamtverband der Deutschen Versicherungswirtschaft (GDV), the German Insurance Association[5].

The insurance market in Germany can be divided into three broad categories: life insurance, health insurance, and non-life. In 2016, the premium income of the insurance market remained stable (+0,2%) at 194 billion EUR. Life insurance products, which represent 46,7% of the total premium, where down by 2,1% in 2016. On the other hand, both health insurance and non-life products, further increased their share and reached an all-time-high of 37 billion EUR and 66 billion EUR, respectively.

Graph 1 - Gross written premiums (in Mio EUR)



Note: Numbers are based on gross written premiums. Figures for 2016 are provisional.

Source: GDV

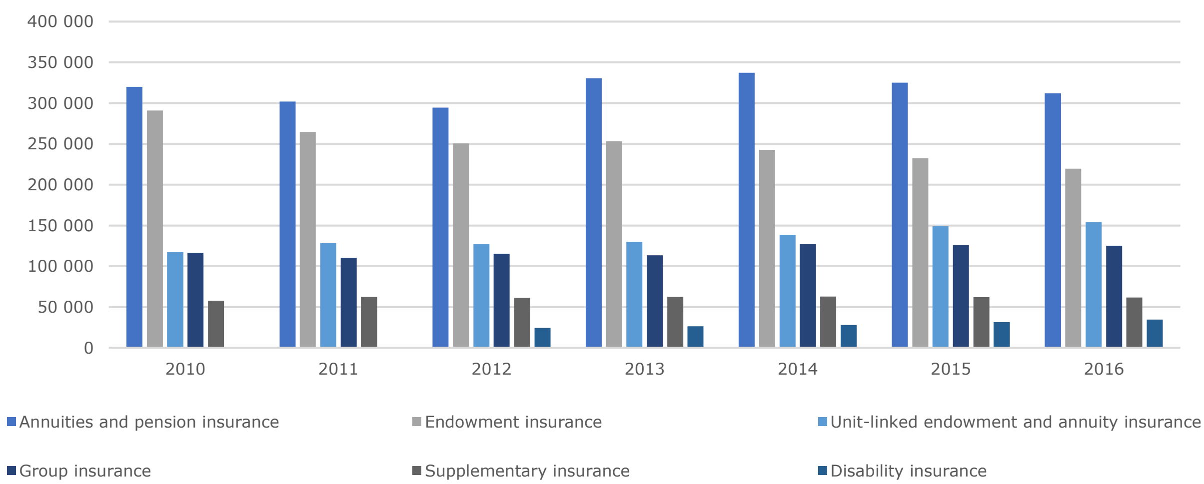
5 Available at https://www.en.gdv.de/en.

4.2 Life insurance products

Life insurers are the largest segment in the German insurance industry with gross written premiums of 91 billion EUR in 2016. The life insurance market includes life insurers, pension schemes and pension funds. However, the last two represent a very small part of the market[6]. In 2016, out of 91 million EUR premium income generated, 95,5% was generated by life insurers and the remaining 4,5% (or 4 088 million EUR) by pension schemes and pension funds.

The observed trend since 2004 in which German life insurers have moved away from traditional endowment policies continued also in 2016. Endowment insurance represented 24,2% of the life insurance policies (32,2% in 2010), while unit-linked and annuity businesses further increased their share by 4% and 3,4% respectively. Other life insurance products, such as group insurance, disability and supplementary insurance represent smaller part of the life insurance business.

Graph 2 - Gross written premiums for life insurance products (in Mio EUR)



Source: GDV

4.3 Health insurance

Healthcare insurance is mandatory in Germany, with most of the population obliged to deal with state regulated providers. For 2016, the number of people with full cover health insurance was 8 773 000, down from 8 787 000 in 2015. Long-term care insurance numbers have been steadily declined since 2011 (9 667 000) to 9 375 000 in 2016.

Private health insurers had premiums totalling 37 250 million EUR in 2016, from which 35 065 million EUR were due to health insurance and 2 185 million EUR due to compulsory long-term care insurance.

[6] However, when measured compared to the balance sheets, we observe that the share of the pension schemes is as small as their share within GWP.

4.4 Non-Life insurance products

Gross written premiums for the non-life segment of the insurance market have experienced an average annual growth rate of 3,1% over the last six years. At the end of 2016, premium income reached an all-time high of 66 296 million EUR.

4.4.1 Motor

Motor insurance is the most common non-life insurance product in Germany accounting for 39,1% or of the non-life premiums. In 2016, premiums reached totalled 25 906 million EUR.

4.4.2 Property

Insurance against property, the second most important class of non-life business, experienced an increase of 4,1% in 2016, with premiums accounting for 18 741 million EUR.

4.4.3 General liability

Following the momentum of the other non-life insurance products, general liability insurance premiums stood at 7 667 million EUR, higher by 1,9% to 2015.

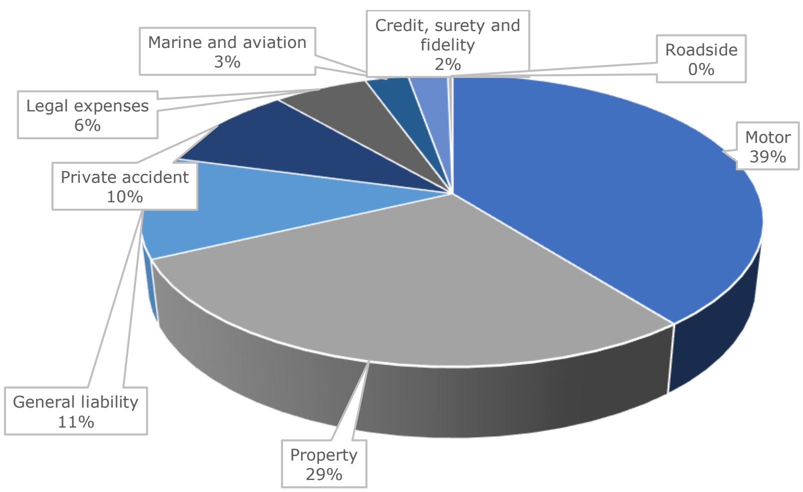
4.4.4 Legal expenses

In 2016, the legal expenses insurance accounted for about 5,8% or 3,828 million EUR of the non-life insurance products premiums.

4.4.5 Private accident

Private accident insurance accounted for 9,7% or 6 450 million EUR of the non-life insurance products premiums. Other non-life
Other non-life insurance – such as credit and suretyship, and marine, aviation and transport – represented 5,6% of the non-life premiums, and increased to 3 703 million EUR.

Graph 3 - Allocation of gross written premiums for non-life insurance products (in %)



Notes: Motor includes motor vehicle third party liability, full and partial own damage, and motor accident. Property includes both private and non-private property insurance. Other non-life includes credit and suretyship, and marine, aviation and transport.

Source: GDV

4.5 Average duration

In 2016, EIOPA published their Insurance Stress Test Report[7], which resulted in the following conclusions for Germany:

- The approximate effective duration for the TP life for all lines of business reported by the EIOPA 2016 stress test participants is 8,67;
- The Macaulay duration for the TP life for all lines of business reported by the EIOPA 2016 stress test participants is 21,40.

In comparison, the approximate effective duration and Macaulay duration for the TP life for all lines of business for the EU/EEA are 8,23 and 13,97, respectively. As the German NSA notes, the difference between effective and Macaulay duration in Germany reflects the huge importance of discretionary bonuses which are (wrongly) considered fixed in calculating the Macaulay duration.

[7] EIOPA, 2016, 2016 EIOPA Insurance Stress Test Report. https://eiopa.europa.eu/publications/surveys/eiopa-bos-16-302%20insurance%20stress%20test%202016%20report.pdf

5 Accounting & Tax framework

5.1 Accounting framework

The EU has introduced rules, as laid down in Directive 2013/34/EU, to promote the convergence of accounting standards at global level and to ensure consistent and comparable financial reporting across the EU. Regulation 1606/2002/EC requires all listed companies to prepare their consolidated financial statements in accordance with a single set of international standards, the so-called IFRS[8].

1. Applicable GAAP at consolidated level: IFRS required for all listed companies and permitted for all non-listed companies[9];
2. Applicable GAAP at statutory level: German GAAP required for all companies[9];
3. Prudential regulatory framework: Solvency II for the calculation of the Solvency Capital Requirement.

5.2 Tax framework

5.2.1 Capital gains on shares

Capital gains realised by resident or (permanent establishment of) non-resident corporate shareholders from the sale of shares in a resident or non-resident company are 95% exempt subject to following conditions:

1. Depreciation condition: the gains do not arise from an earlier depreciation of the shares that has been deducted for tax purposes;
2. A holding period requirement: a minimum holding period of 7 years is required;
3. An activity requirement: short-term trading rules might apply for certain financial enterprises, which excludes the application of the exemption.

If one or more of the above conditions is not complied with, this will result in taxation as follows: Capital gains are fully taxable at the standard corporate income tax rate: 15,825%.

5.2.2 Capital losses on shares

Capital losses are not deductible from German-source income if they stem from the depreciation, sale or capital reduction of shares.

5.2.3 Taxation of dividends

A 95% exemption applies on dividends received by resident companies and permanent establishments of non-resident parent companies, subject to the general corporate income tax if the following conditions are met:

1. A holding requirement: minimum participation of 10%;
2. A deduction requirement: it is required that the dividends were not deducted when determining the profits of the distributing company.

If one or more of the above conditions is not met, the dividend is taxed at the ordinary tax rate.

[8] https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/financial-reporting_en
[9] https://www.ifrs.org/-/media/feature/around-the-world/jurisdiction-profiles/germany-ifrs-profile.pdf

A statutory rate of 25% (26,375%, including solidarity charge) applies, with a possible 40% refund for non-resident corporations, giving rise to an effective rate of 15,825%, unless the rate is reduced under a tax treaty. No tax is levied on dividends qualifying under the EU parent-subsidiary directive.

Foreign tax paid may be credited against German tax that relates to the foreign income or may be deducted as a business expense. Germany typically applies the exemption system.

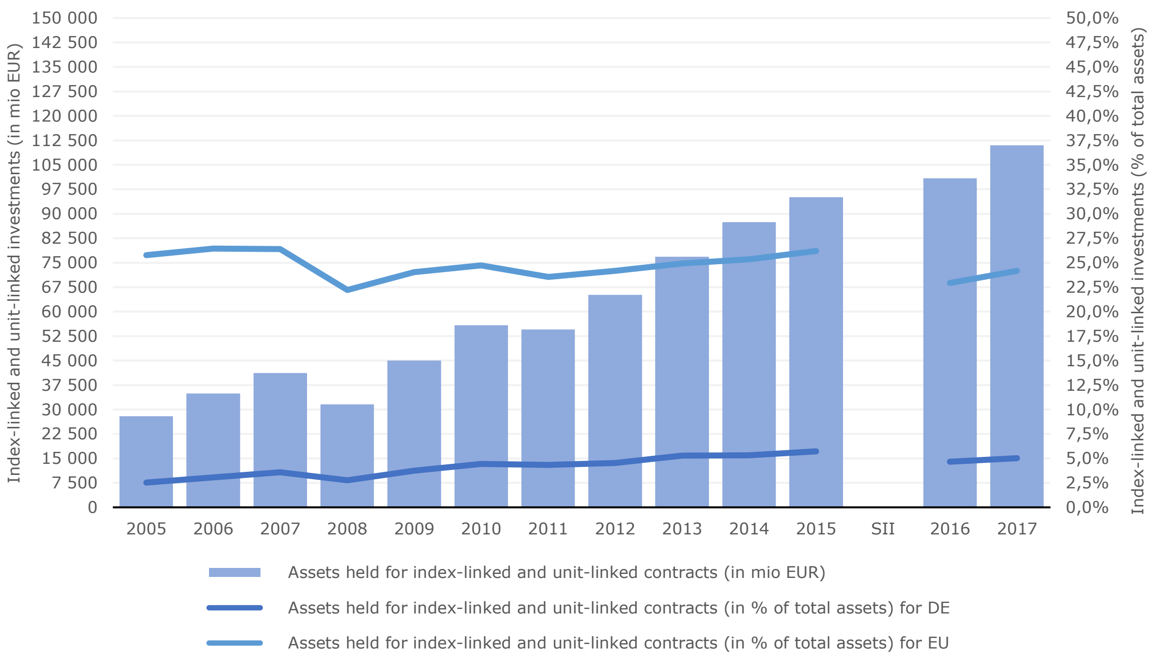
6 Historical data

The following section contains historical overviews of Solvency I, Solvency II and ECB data in order to provide insights on possible short and long-term trends.

6.1 Index-linked and unit-linked investments in comparison to total assets

Based upon the Solvency I and Solvency II (S.02.01) historical information, the evolution of the index-linked and unit-linked investments in comparison to total assets of Germany is compared to the EU. The break in Graph 4 shows the transition from the Solvency I to the Solvency II regulatory framework. Under Solvency II assets are presented based upon their market value.

Graph 4 - Evolution of index-linked and unit-linked investments based upon Solvency I and Solvency II



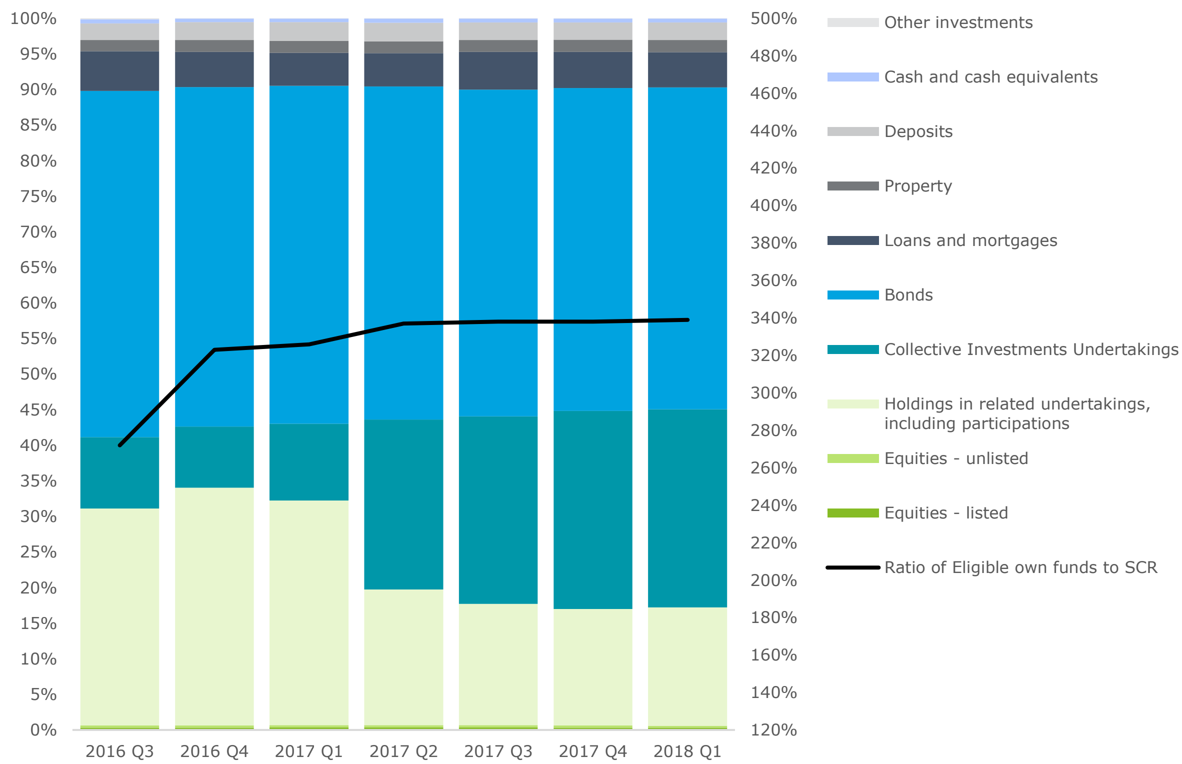
Source: EIOPA Solvency I and Solvency II statistics and Deloitte-CEPS analysis

As shown in Graph 4, the share of index-linked and unit-linked investments in comparison to total assets depict a stable increasing trend starting from 2005. Note that the graph for the EU shows a similar relatively stable behaviour like Germany, over the observation period, with a slightly increasing trend as from 2011. This similar behaviour is because Germany composes a large part of the EU. As a result, Germany has a relatively large impact on the trend depicted in the EU. However, it is clear that Germany invests far less in index-linked and unit-linked contracts compared to the EU.

6.2 Solvency II – excluding index-linked and unit-linked investments

Based upon the Solvency II (S.02.01) quarterly data from 2016 Q3 until 2018 Q1, the evolution of the different asset categories is depicted in Graph 5. Furthermore, the evolution of the SCR ratio is shown over the seven quarters.

Graph 5 - Evolution Solvency II balance sheet (S.02.01) items (Total Investments, deposits, cash and cash equivalents) and SCR ratio



Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

The composition of the German insurers' balance sheet has remained relatively stable over the quarters since the introduction of Solvency II on 1 January 2016[10]. This seems to be confirmed by the fact that the most dominant assets classes such as Bonds, Holdings in related undertakings and Collective Investment Undertakings remain the most important balance sheet items, covering almost all the assets. There is a significant decrease in the share of Holdings in related undertakings in favour of Collective Investment Undertakings is noticeable starting from 2017 Q2; however, as pointed out by the German NSA, this change is due to the fact that until 2017 Q1 investments in some special Collective Investment Undertakings were considered holdings. The other balance sheet items do not suggest a clear trend whether it be downwards or upwards.

Bonds have constituted the major part of the German insurers' balance sheet since the introduction of Solvency II.

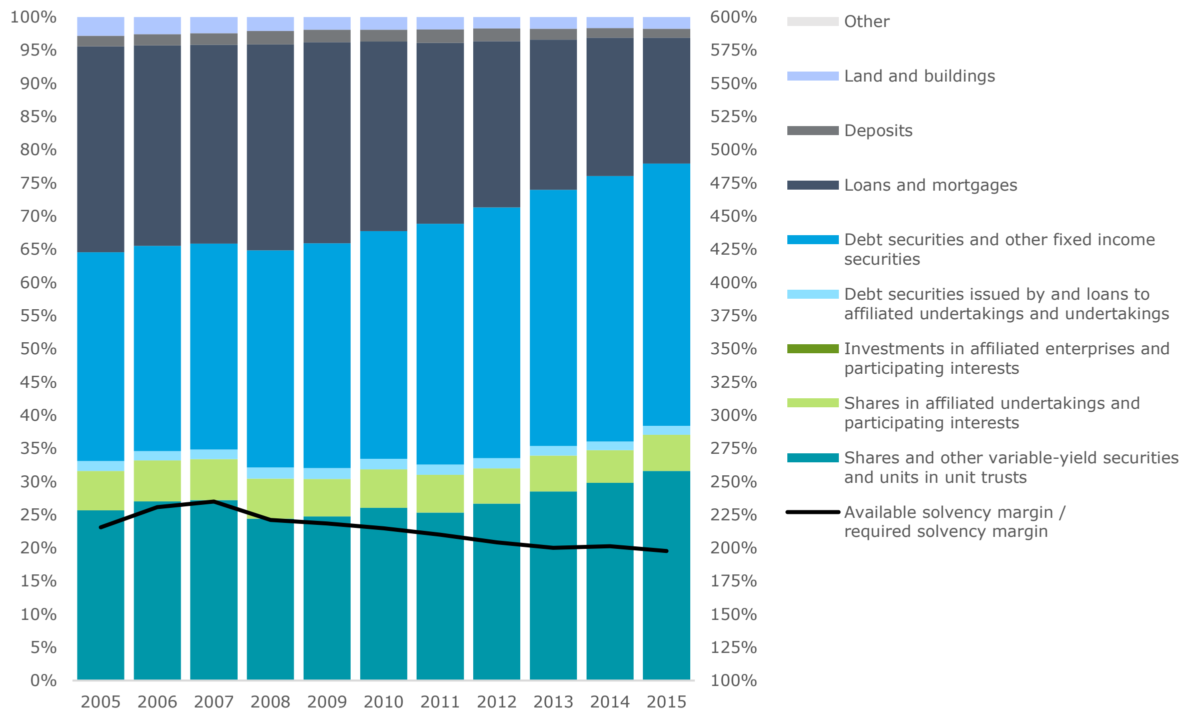
[10] Day one reporting, 2016 Q1 and Q2 are not publicly available

For Germany, the SCR ratio experienced an increase in third quarter of 2016, where after it remained stable. Overall, the increase in Collective Investments Undertakings, due to the decrease in Holdings related undertakings, was the sole noticeable changes in asset allocation for the German insurance market.

6.3 Solvency I – excluding index-linked and unit-linked assets

Based upon the Solvency I yearly data from 2005 until 2015, the evolution of the different investment asset categories is depicted in Graph 6. Furthermore, the evolution of the solvency ratio is shown over the history.

Graph 6 - Evolution Solvency I balance sheet items (Total Investments, deposits, cash and cash equivalents)

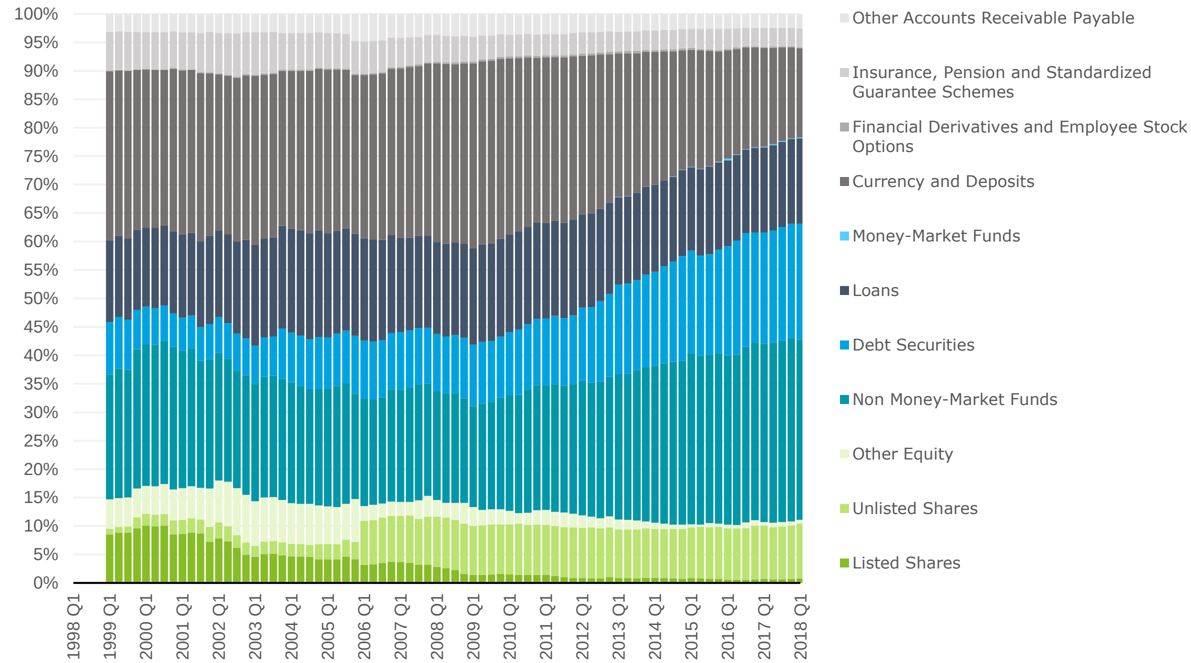


Source: EIOPA Solvency I statistics and Deloitte-CEPS analysis

Graph 6, which relates to Solvency I figures suggests that the dominance of Bonds in the German balance sheets that we observed under the rules of Solvency II has been the result of a steady increase during the previous decade. Furthermore, the solvency margin shows a slight decreasing trend since 2007.

6.4 European Central Bank – including index-linked and unit-linked assets

Graph 7 - Evolution ECB balance sheet items (asset categories)



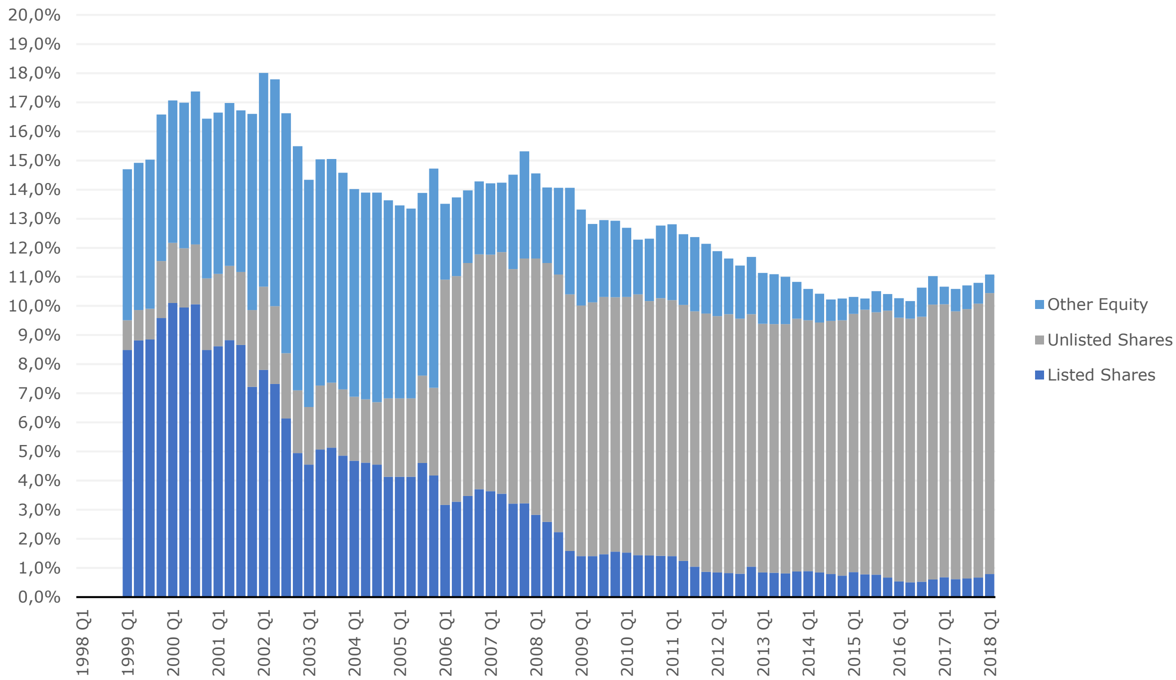
Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

Graph 7 relates to figures of investments by German Insurers since 1999 Q1 as reported by the ECB. It can be observed that no real balance sheet items dominated the German balance sheets during the observation period. A steady increase in Non Money-Market Funds starting from 2009 Q2 is noted. According to the German NSA, the increase of Non Money Market funds have to be looked at in the context of continuous decrease of interest rates during the mentioned period.

On the next page, the Equity asset classes are presented in a more detailed view. Furthermore, the evolution of the listed shares (normalised to a start value of 100) of Germany is plotted against the aggregated EU data.

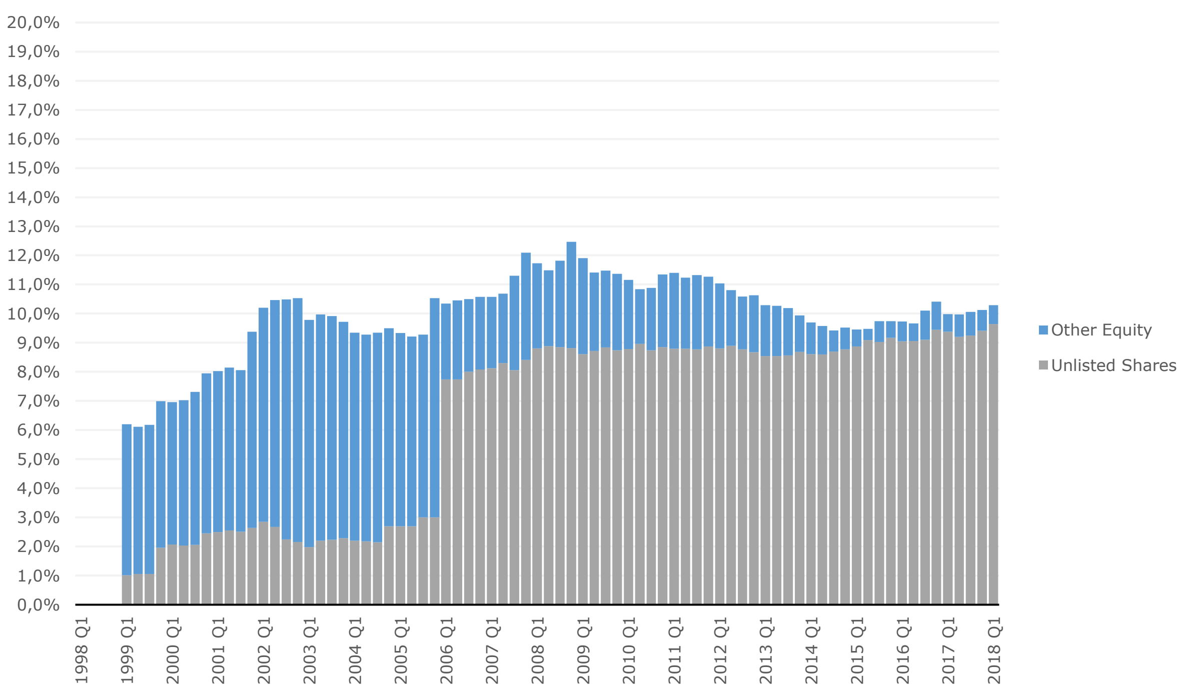
We remark that these graphs include index-linked and unit-linked assets, which cannot be individualised from the figures published by the ECB. However, the German NSA notes that there is no impact of index-linked and unit-linked on trends in listed shares, unlisted shares and other equity. As shown in Section 3, index-linked and unit-linked assets typically are CIU investments. The typical German unit-linked product uses UCITs and often equity funds.

Graph 8 - Evolution ECB balance sheet items (equity categories)



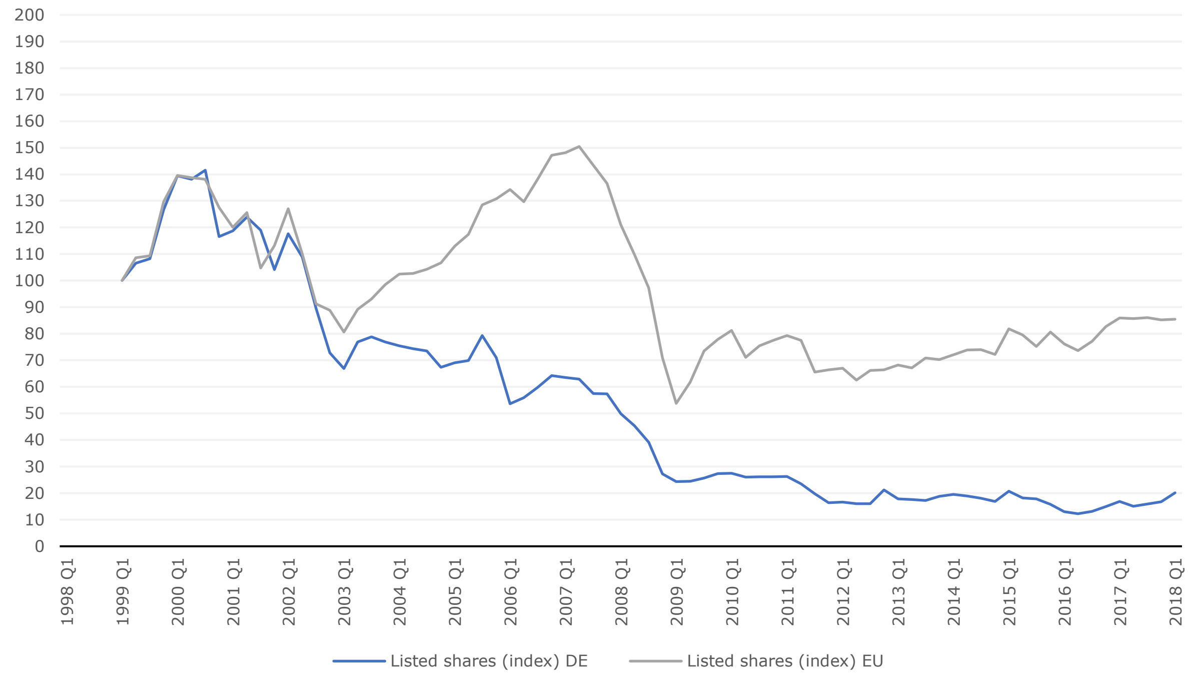
Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

Graph 9 - Evolution ECB balance sheet items (Unlisted Shares and Other Equity)



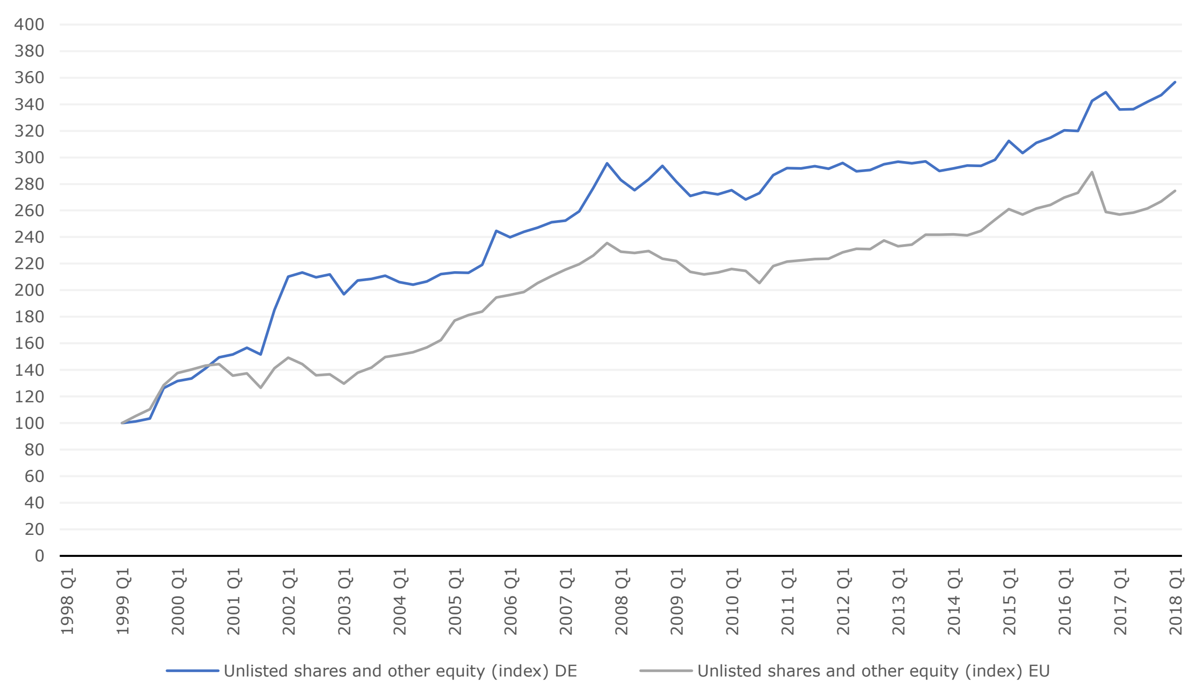
Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

Graph 10 - Evolution ECB listed shares DE and EU (as index)



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

Graph 11 - Evolution ECB listed shares DE and EU (as index)



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

6.5 Trends in Equity Investments

This section provides a trend analysis of the equity investments of the German insurers using the balance sheet data of the insurance sector from the ECB Statistical Data Warehouse. Given the availability of the equity split in the ECB database, the analysis focuses on investments in listed shares and investments in unlisted shares and other equity.

6.5.1 Listed Shares

In the analysis below, the listed shares of insurance corporations are plotted against the total assets in the industry both in amounts and in indexed values. The aim of this comparative analysis is to understand the evolution of listed shares in the overall insurance market. Similarity of the growth patterns in the listed shares and total assets can be considered as an indication of the extent to which the equity investments are driven by a good (or bad) economic environment in the industry at a certain point in time. A presentation of the variables only in amounts might dilute the magnitude of the growths for countries with large assets because in such a representation, the listed shares will be overstated. Therefore, we also plot each series as indexed to the initial point in their available history.

In the next step, we focus on the relationship with the listed shares and stock market indices. The ECB QSA balance sheet items are valued at market prices at the end of each quarter. Therefore, it is plausible to assume that the changes in the stock prices are reflected on the amounts held in listed shares. In order to remove this "price effect" from the observed amounts of listed shares and approximate the "real" amounts held in shares, we consider adjusting the observed amounts in listed shares. Even though we observe high correlations with listed shares and several stock indices, since the exact destinations of the portfolio invested in listed shares at each period is not observable, we build a "Weighted Equity Index" similar to the EIOPA Equity Dampener.

Amounts invested in listed shares and the total amount of assets of the insurance sector are plotted in Graph 12 while the indexed values of the series are presented in Graph 13. For the amounts invested in listed shares, we observe a long term downward trend after a brief increase in 2000 Q3. On the indexed values, we observe that indexed total assets grow over time while the listed shares has a long-term downward trend.

June 2003 marks the insolvency of the German life insurer Mannheimer Leben, where a combination of an investment strategy tilted towards equities and declining equity prices, impacted the company's solvency position and ultimately triggered its default. The portfolio of the defaulted insurer was since then managed in run-off by Protektor, a German insurance industry rescue vehicle. As referred to in an IMF paper[1], the German regulators had already responded in early 2002 to the negative impact of declining equity prices on insurers' capital positions, by amending the regulations governing the valuation of equities and other assets, while leaving in place the solvency requirements. Insurers were allowed to value equities at an "estimated ultimate realizable value", above current market prices. The paper notes that this action eased stability pressures, but many observers noted that it also reduced the transparency of reported solvency margins. We also refer to the discussion on the accounting framework as a driver of equity investments, and the impact of volatility of an insurer's results.

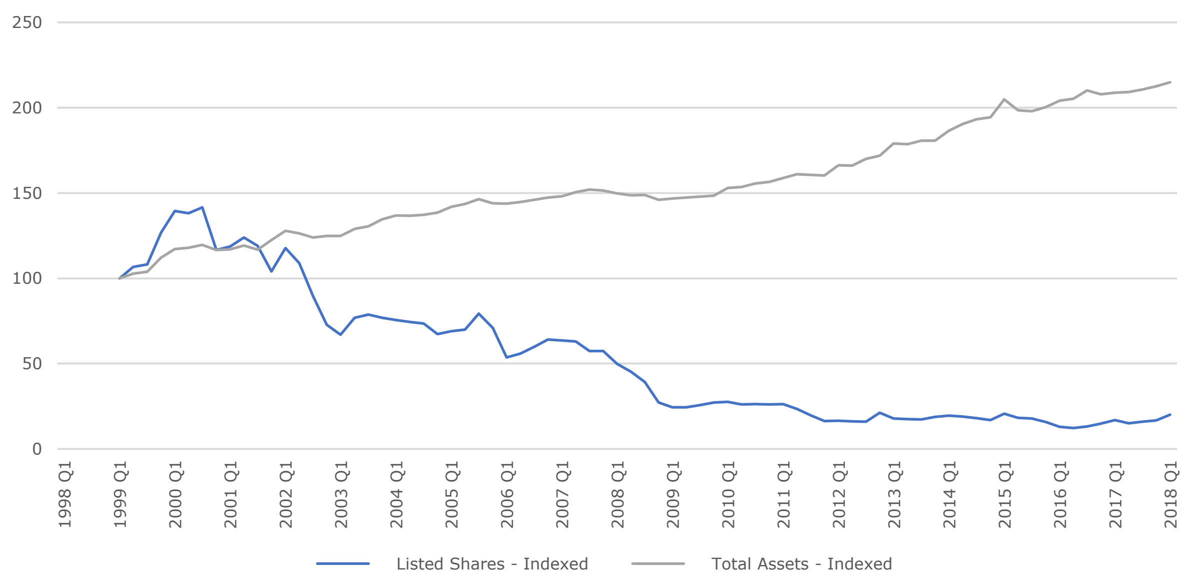
[1] As referred to in the IMF paper on "Risk transfer and the insurance industry" (21 Oct 2004)

In Germany, there has been a shift from listed equity towards debt securities and non money-market funds. The percentage of total investments allocated to debt securities by German insurers have increased from 9,3% in 1999 to 20,4% in 2018, whilst the investments in non money-market funds increased from 21,9% in 1999 to 31,6% in 2018. We also refer to the discussion above on the insolvency of Mannheimer Leben in 2003.

Graph 12 – Evolution of Listed Shares and Total Assets (in Mio EUR)

Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

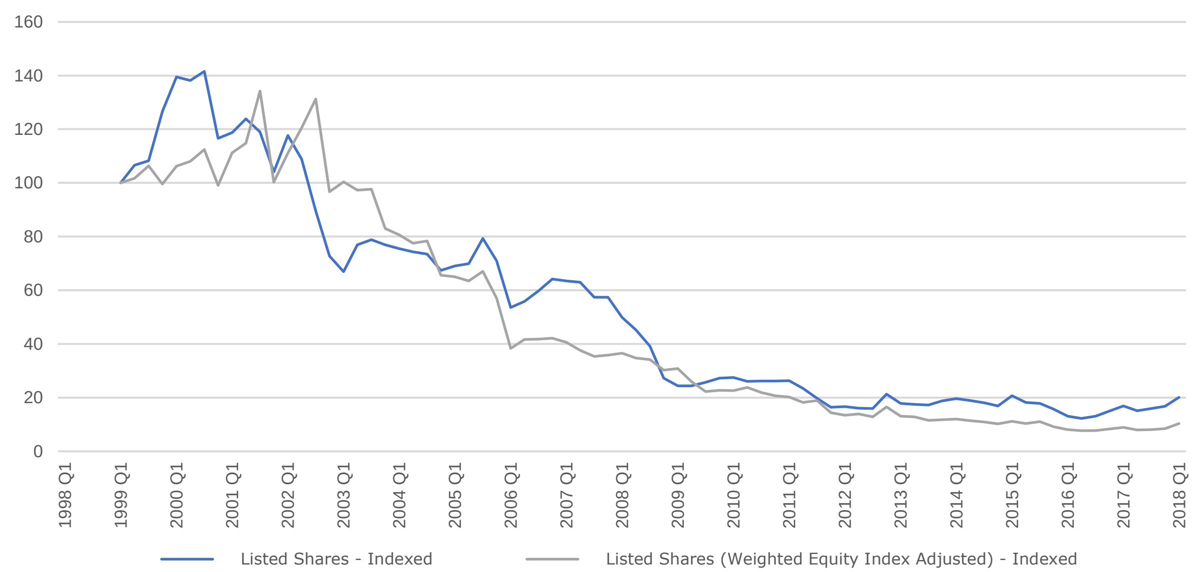
Graph 13 – Evolution of Listed Shares and Total Assets (indexed values)



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

Graph 14Graph 14 presents the indexed values of the amounts invested in listed shares against its Weighted Equity Index adjusted counterpart. On the plot, we observe a long-term downward trend in the adjusted listed equity investments of German insurers over the observation period (i.e. 1999 Q1 – 2018 Q1). At the end of the observation period, in 2018 Q1, the value of the indexed adjusted series comes down to 10,4%. The bulk of the decrease in the investments occur between 2003 Q4 and 2009 Q3. Even though there are quarters in which adjusted amounts increase during the period, they are not enough to make up for the decreases by 15% in 2003 Q4, 16,2% in 2004 Q4; 14% in 2005 Q4, 32,6% in 2006 Q1, 11,5% in 2008 Q4, 15,9% in 2009 Q2, and 14% in 2009 Q3. The indexed value of the adjusted investments drops to 22,3% at the end of 2009 Q3. After 2009 Q3, we observe episodes of consecutive negative growths in the equity investments. The indexed adjusted series drops to the lowest level in 2016 Q2 with 7,6% and then recovers to 10,4% in 2018 Q1.

Graph 14 – Evolution of Listed Shares – Indexed (Weighted Equity Index Adjusted)



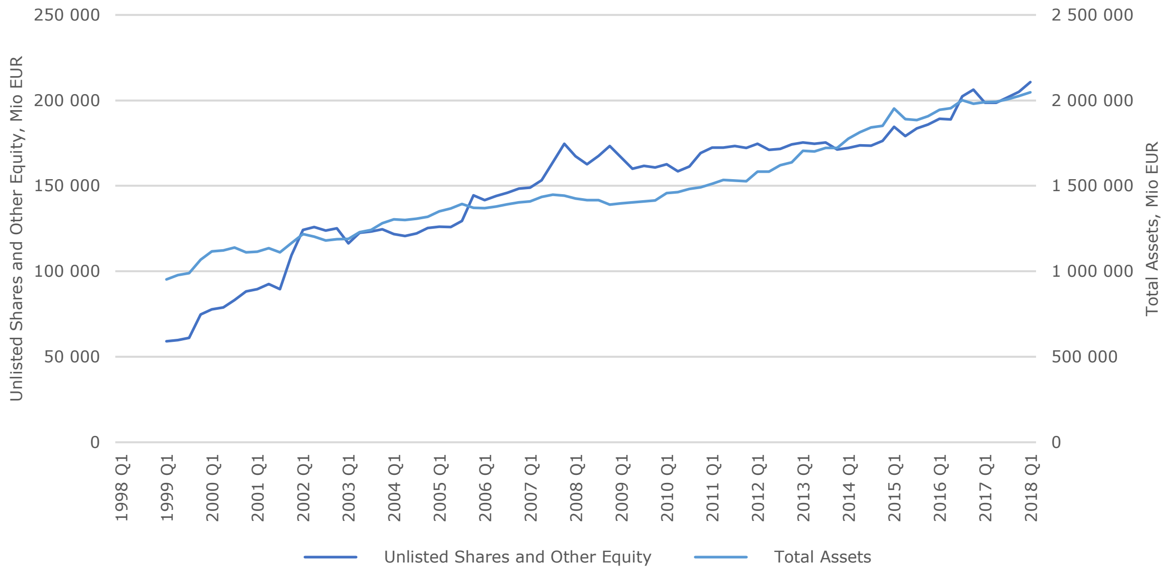
Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

6.5.2 Unlisted Shares

Graph 15 depicts the amounts invested in unlisted shares and other equity plotted against the total assets in the insurance markets of while Graph 16 presents the indexed values of the series for an easier comparison of the movements in these two series.

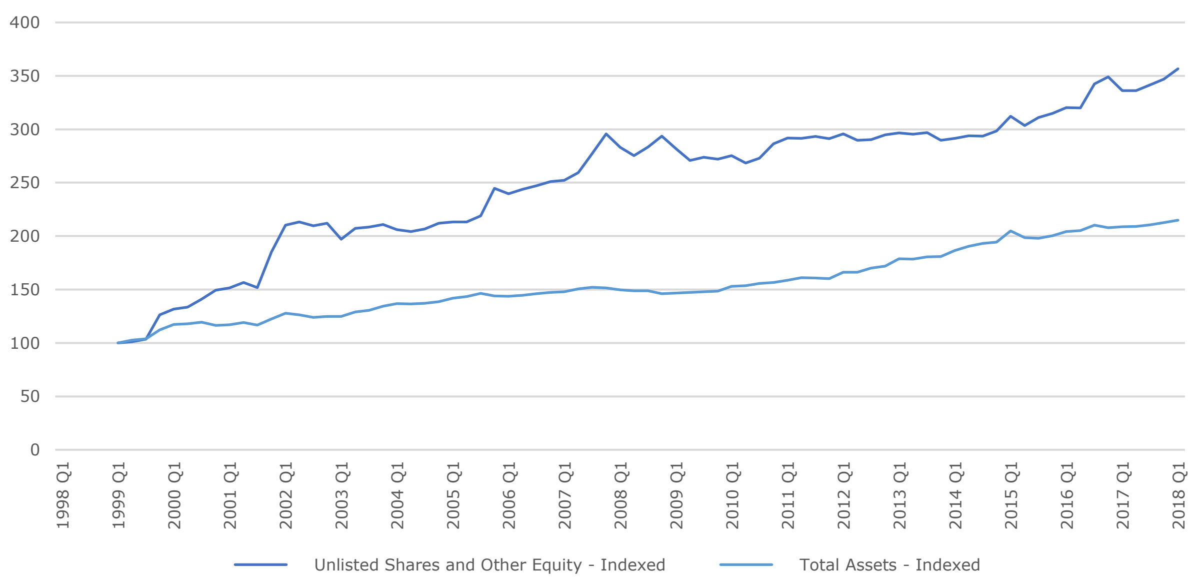
As it can be observed on these plots, both series increase steadily over the period (1998 – 2018), however the unlisted shares increase at a significantly higher rate. As such, the indexed value of this series ends the period at 357% compared to 215% for the total assets series. Due to this quicker growth rate, unlisted shares therefore end the period at a significantly higher proportion of total assets.

Graph 15 – Evolution of Total Unlisted Shares and Other Equity and Total Assets (in Mio EUR)



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

Graph 16 – Evolution of Unlisted Shares and Other Equity, Indexed Values



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis