

# LUXEMBOURG

## Key characteristics of the insurance market



<b>1</b>	<b>Introduction</b>	<b>2</b>
1.1	General	2
1.2	Balance sheet	2
1.3	Solvency II ratios	3
<b>2</b>	<b>Investments, deposits, cash and cash equivalents</b>	<b>4</b>
2.1	Scope	4
2.2	Asset exposure	5
2.3	Equity exposure	7
<b>3</b>	<b>Index-linked and unit-linked investments</b>	<b>10</b>
3.1	Scope	10
3.2	Asset exposure	10
3.3	Equity exposure	11
<b>4</b>	<b>Insurance products</b>	<b>13</b>
4.1	Overview	13
4.2	Life insurance products	14
4.3	Non-Life insurance products	15
4.4	Average duration	17
<b>5</b>	<b>Accounting &amp; Tax framework</b>	<b>18</b>
5.1	Accounting framework	18
5.2	Tax framework	18
<b>6</b>	<b>Historical data</b>	<b>20</b>
6.1	Index-linked and unit-linked investments in comparison to total assets	20
6.2	Solvency II – excluding index-linked and unit-linked investments	21
6.3	Solvency I – excluding index-linked and unit-linked assets	22
6.4	European Central Bank – including index-linked and unit-linked assets	23
6.5	Trends in Equity Investments	26

# 1 Introduction

## 1.1 General

At the end of 2017 (2017 Q4), 95 insurance companies<sup>1</sup> in Luxembourg submitted their Solvency II related reporting package to the Luxembourg National Supervisory Authority (NSA). These companies accounted for 1,936% of Total assets of insurance undertakings operating within the European Union (EU).

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

**Table 1 - Insurance reporting submissions**

<b>Insurance reporting submissions</b>	<b>#</b>
Life undertakings	40
Non-Life undertakings	32
Reinsurance undertakings	23
Composite undertakings	0
<b>Total</b>	<b>95</b>
<b>Total assets LU / Total assets EU %</b>	<b>1,936%</b>
<b>Ranking LU based on Total assets EU</b>	<b>11</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

## 1.2 Balance sheet

At the end of 2017 (2017 Q4), Luxembourg was the number 11 country in the EU insurance market in terms of assets held with an amount of 219 billion EUR reported under Solvency II rules.

With regards to the Assets held for index-linked and unit-linked contracts, Luxembourg ranked number 6 in terms of absolute amount with 126 billion EUR invested in this category. However, with 57,8% of Total assets of this category, Luxembourg was significantly above the EU average, i.e. 24,3% in terms of Total assets.

In terms of technical provisions, 22,5% of the total balance sheet relates to the life business (i.e. non index-linked and unit-linked business), while 8,0% represented non-life obligations.

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

in Mio EUR	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Investments, deposits, cash and cash equivalents	49 451	12	22,6%	67,8%	67,3%	22,6%	90,1%	17,2%
Assets held for index-linked and unit-linked contracts	126 452	6	57,8%	24,2%	24,3%	2,5%	59,3%	16,2%
Other assets	42 741	7	19,5%	8,1%	8,4%	2,1%	19,5%	4,9%
<b>Total assets</b>	<b>218 645</b>	<b>11</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>0,0%</b>
Technical provisions - life	49 277	11	22,5%	46,3%	32,2%	3,0%	64,2%	17,9%
Technical provisions - non-life	17 584	10	8,0%	6,6%	12,9%	2,4%	38,5%	9,1%
Technical provisions - index-linked and unit-linked	124 783	6	57,1%	25,1%	23,4%	2,4%	58,4%	16,0%
Other liabilities	10 934	12	5,0%	8,9%	9,0%	4,0%	21,3%	3,9%
<b>Total liabilities</b>	<b>202 579</b>	<b>11</b>	<b>92,7%</b>	<b>86,9%</b>	<b>77,6%</b>	<b>49,1%</b>	<b>92,7%</b>	<b>11,1%</b>
Excess of assets over liabilities	16 066	12	7,3%	13,1%	22,4%	7,3%	50,9%	11,1%
<b>Total liabilities + Excess of assets over liabilities</b>	<b>218 645</b>	<b>11</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>0,0%</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

<sup>1</sup> 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.

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 Luxembourg reinsurance market as a whole had available own funds that were more than double the Solvency Capital Requirement (SCR) levels required by the European Solvency II Directive. The reported SCR ratio amounted to 218% and is below the one of the EU, which amounted to 237% at year-end 2017. Out of the 28 EU Member States, Luxembourg is ranked at the 16<sup>th</sup> 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	LU		EU				
	Amount	Rank	%	Avg	Min	Max	StD
Total available own funds to meet the SCR	16 992	12	-	-	-	-	-
SCR	7 704	12	-	-	-	-	-
<b>Surplus available own funds</b>	<b>9 288</b>	<b>13</b>	-	-	-	-	-
<b>Ratio of Eligible own funds to SCR</b>	<b>218%</b>	<b>16</b>	<b>237%</b>	<b>225%</b>	<b>135%</b>	<b>361%</b>	<b>52%</b>
Ratio of Eligible own funds to SCR (10th percentile)	131%	17	136%	138%	110%	193%	19%
Ratio of Eligible own funds to SCR (25th percentile)	151%	19	162%	164%	128%	214%	24%
Ratio of Eligible own funds to SCR (50th percentile)	202%	14	215%	208%	144%	300%	37%
Ratio of Eligible own funds to SCR (75th percentile)	291%	11	306%	280%	164%	445%	59%
Ratio of Eligible own funds to SCR (90th percentile)	454%	7	457%	396%	173%	643%	99%
<b>Ratio of Eligible own funds to MCR</b>	<b>618%</b>	<b>13</b>	<b>640%</b>	<b>613%</b>	<b>282%</b>	<b>933%</b>	<b>170%</b>

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, Luxembourg participants reported an SCR ratio of 216% including the application of LTGs and transitionals. Removing the measures caused no impact on the SCR ratio.<sup>2</sup>

<sup>2</sup> [https://eiopa.europa.eu/Publications/Reports/2018-12-18%20\\_LTG%20AnnualReport2018.pdf](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 Luxembourg 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, which can differ, from the exposures reporting.

Based upon the comparative view below, we note that amounts reported in the Solvency II Exposure List (S.06.02) and Solvency II Balance Sheet (S.02.01) do not differ. In terms of allocation in percentage, we note a shift from Holdings in related undertakings (including participations and equities) towards Collective Investments Undertakings 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**

in number	Exposure list LU		Solvency II balance sheet LU		Difference
	#	%	#	%	#
Life undertakings	40	42,1%	40	42,1%	0
Non-Life undertakings	32	33,7%	32	33,7%	0
Reinsurance undertakings	23	24,2%	23	24,2%	0
Undertakings pursuing both life and non-life insurance activity	0	0,0%	0	0,0%	0
<b>Total</b>	<b>95</b>	<b>100,0%</b>	<b>95</b>	<b>100,0%</b>	<b>0</b>

in Mio EUR	Exposure list LU		Solvency II balance sheet LU		Difference
	Amount	%	Amount	%	%
Holdings in related undertakings, incl. participations and equities	3 010	6,1%	4 044	8,2%	-2,1%
Holdings in related undertakings, including participations	n/a	n/a	2 849	5,8%	n/a
Equities	n/a	n/a	1 195	2,4%	n/a
Equities - listed	n/a	n/a	1 178	2,4%	n/a
Equities - unlisted	n/a	n/a	17	0,0%	n/a
Collective Investments Undertakings	8 517	17,2%	7 483	15,1%	2,1%
Bonds	29 117	58,9%	29 117	58,9%	0,0%
Loans and mortgages	3 267	6,6%	3 267	6,6%	0,0%
Property	417	0,8%	417	0,8%	0,0%
Deposits	1 964	4,0%	1 980	4,0%	0,0%
Cash and cash equivalents	2 911	5,9%	2 895	5,9%	0,0%
Other investments	248	0,5%	248	0,5%	0,0%
<b>Total</b>	<b>49 451</b>	<b>100,0%</b>	<b>49 451</b>	<b>100,0%</b>	<b>0,0%</b>

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 versus 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	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
Equities - listed	1 178	13	98,6%	83,7%	75,0%	12,8%	99,6%	21,1%
Equities - unlisted	17	20	1,4%	16,3%	25,0%	0,4%	87,0%	21,1%
<b>Total equities</b>	<b>1 195</b>	<b>14</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>0,0%</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

Based upon the quarterly reporting as of Q4 2017, Luxembourg insurers invested 98,6% of their directly-held equity positions in listed equity in comparison to an average of 75,0% in the EU. With an amount of 1 178 million EUR, Luxembourg ranked number 13 in the EU.

With an invested amount of 17 million EUR, unlisted equity constituted a non-significant portion of the equity investment category of the directly-held equity investments, i.e. 1,4%. This placed Luxembourg as the number 20 in the EU.

## 2.2 Asset exposure

From an asset exposure perspective, the insurance market in Luxembourg mainly invested in Government bonds and Corporate bonds (in total 57,9% of Total Investments, deposits, cash and cash equivalents), Collective Investment Undertakings (17,2%), and Mortgages and loans (6,6%).

Within the bond categories, the insurance market was not equally exposed to government securities (25,4%) and corporate debt (32,5%), categories for which Luxembourg ranked number 14 and number 12 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 third most important for the Luxembourg insurance market in terms of asset exposures. Within this category, the industry was mainly exposed to Debt funds, Asset allocation funds and Equity funds for which Luxembourg ranked respectively number 12, number 5, and number 12 in the EU. Equity was the fifth category to which the Luxembourg insurers had the most exposure. Equity of real estate related corporation constitutes 0,7% within the 6,1% of the total equity exposure.

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

in Mio EUR	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
<b>Equity</b>	<b>3 010</b>	<b>15</b>	<b>6,1%</b>	<b>12,0%</b>	<b>9,5%</b>	<b>1,1%</b>	<b>28,1%</b>	<b>6,5%</b>
Common equity	1 701	15	3,4%	10,4%	7,8%	1,0%	22,5%	6,0%
Equity of real estate related corporation	332	13	0,7%	1,0%	1,1%	0,0%	4,0%	1,2%
Other equity	977	8	2,0%	0,6%	0,6%	0,0%	2,0%	0,7%
<b>Collective Investment Undertakings</b>	<b>8 517</b>	<b>12</b>	<b>17,2%</b>	<b>19,2%</b>	<b>12,8%</b>	<b>1,5%</b>	<b>41,6%</b>	<b>9,3%</b>
Equity funds	1 604	12	3,2%	3,2%	2,7%	0,4%	10,9%	2,4%
Private equity funds	428	10	0,9%	0,5%	0,5%	0,0%	6,9%	1,3%
Debt funds	2 368	12	4,8%	7,8%	5,6%	0,8%	18,0%	4,9%
Money market funds	590	9	1,2%	2,3%	1,1%	0,0%	6,3%	1,6%
Asset allocation funds	1 931	5	3,9%	1,1%	0,8%	0,0%	3,9%	1,0%
Real estate funds	329	11	0,7%	1,6%	0,8%	0,0%	3,3%	0,9%
Alternative funds	56	13	0,1%	0,4%	0,3%	0,0%	3,1%	0,6%
Infrastructure funds	47	11	0,1%	0,2%	0,1%	0,0%	0,9%	0,2%
Other	1 165	7	2,4%	2,0%	0,9%	0,0%	7,2%	1,7%
<b>Government bonds</b>	<b>12 575</b>	<b>14</b>	<b>25,4%</b>	<b>28,7%</b>	<b>39,7%</b>	<b>10,0%</b>	<b>77,0%</b>	<b>18,9%</b>
<b>Corporate bonds</b>	<b>16 065</b>	<b>12</b>	<b>32,5%</b>	<b>26,9%</b>	<b>21,6%</b>	<b>1,8%</b>	<b>47,3%</b>	<b>11,2%</b>
<b>Structured notes</b>	<b>359</b>	<b>10</b>	<b>0,7%</b>	<b>1,3%</b>	<b>0,5%</b>	<b>0,0%</b>	<b>2,5%</b>	<b>0,6%</b>
<b>Collateralised securities</b>	<b>118</b>	<b>11</b>	<b>0,2%</b>	<b>0,6%</b>	<b>0,6%</b>	<b>0,0%</b>	<b>9,3%</b>	<b>1,8%</b>
<b>Mortgages and loans</b>	<b>3 267</b>	<b>11</b>	<b>6,6%</b>	<b>4,8%</b>	<b>3,8%</b>	<b>0,3%</b>	<b>26,3%</b>	<b>5,2%</b>
<b>Property</b>	<b>417</b>	<b>17</b>	<b>0,8%</b>	<b>2,0%</b>	<b>3,5%</b>	<b>0,8%</b>	<b>11,6%</b>	<b>2,6%</b>
<b>Deposits</b>	<b>1 964</b>	<b>10</b>	<b>4,0%</b>	<b>2,8%</b>	<b>3,6%</b>	<b>0,2%</b>	<b>16,6%</b>	<b>3,6%</b>
<b>Cash and cash equivalents</b>	<b>2 911</b>	<b>11</b>	<b>5,9%</b>	<b>1,4%</b>	<b>4,3%</b>	<b>0,5%</b>	<b>16,6%</b>	<b>3,5%</b>
<b>Other investments</b>	<b>248</b>	<b>6</b>	<b>0,5%</b>	<b>0,1%</b>	<b>0,1%</b>	<b>0,0%</b>	<b>0,9%</b>	<b>0,3%</b>
<b>Not reported</b>	<b>0</b>	<b>-</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,3%</b>	<b>0,1%</b>
<b>Total Investments, deposits, cash and cash equivalents</b>	<b>49 451</b>	<b>12</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>0,0%</b>

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.

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

in %	LU			EU		
	Life	Non-life	Composite and reinsurance	Life	Non-life	Composite and reinsurance
<b>Equity</b>	<b>2,5%</b>	<b>10,7%</b>	<b>10,1%</b>	<b>6,6%</b>	<b>18,3%</b>	<b>16,5%</b>
Common equity	1,4%	4,9%	6,4%	5,0%	16,2%	14,9%
Equity of real estate related corporation	0,9%	0,8%	0,1%	1,0%	0,8%	1,2%
Other equity	0,2%	5,0%	3,6%	0,6%	1,3%	0,4%
<b>Collective Investment Undertakings</b>	<b>12,8%</b>	<b>13,6%</b>	<b>27,2%</b>	<b>22,4%</b>	<b>22,3%</b>	<b>13,8%</b>
Equity funds	4,3%	1,9%	2,1%	3,7%	2,9%	2,7%
Private equity funds	0,1%	0,1%	2,6%	0,5%	0,5%	0,5%
Debt funds	2,6%	0,4%	11,2%	9,7%	9,7%	4,7%
Money market funds	2,2%	0,1%	0,1%	2,8%	1,4%	2,0%
Asset allocation funds	1,1%	7,9%	6,8%	1,3%	1,2%	0,9%
Real estate funds	1,2%	0,1%	0,0%	1,6%	1,8%	1,4%
Alternative funds	0,1%	0,2%	0,0%	0,3%	0,3%	0,5%
Infrastructure funds	0,2%	0,1%	0,0%	0,2%	0,2%	0,3%
Other	1,1%	2,9%	4,4%	2,3%	4,3%	0,8%
<b>Government bonds</b>	<b>31,5%</b>	<b>31,9%</b>	<b>10,8%</b>	<b>28,1%</b>	<b>19,1%</b>	<b>33,4%</b>
<b>Corporate bonds</b>	<b>38,4%</b>	<b>27,1%</b>	<b>24,6%</b>	<b>29,2%</b>	<b>29,3%</b>	<b>22,9%</b>
<b>Structured notes</b>	<b>1,3%</b>	<b>0,1%</b>	<b>0,0%</b>	<b>1,4%</b>	<b>0,6%</b>	<b>1,5%</b>
<b>Collateralised securities</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,8%</b>	<b>0,8%</b>	<b>0,6%</b>	<b>0,5%</b>
<b>Mortgages and loans</b>	<b>5,1%</b>	<b>5,3%</b>	<b>10,1%</b>	<b>7,4%</b>	<b>3,2%</b>	<b>2,3%</b>
<b>Property</b>	<b>0,3%</b>	<b>1,9%</b>	<b>1,2%</b>	<b>2,0%</b>	<b>2,5%</b>	<b>1,7%</b>
<b>Deposits</b>	<b>1,3%</b>	<b>1,5%</b>	<b>10,3%</b>	<b>0,8%</b>	<b>1,6%</b>	<b>5,8%</b>
<b>Cash and cash equivalents</b>	<b>6,5%</b>	<b>7,7%</b>	<b>3,7%</b>	<b>1,0%</b>	<b>2,5%</b>	<b>1,4%</b>
<b>Other investments</b>	<b>0,3%</b>	<b>0,0%</b>	<b>1,2%</b>	<b>0,2%</b>	<b>0,0%</b>	<b>0,1%</b>
<b>Not reported</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>
<b>Total Investments, deposits, cash and cash equivalents</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

At EU level we note that 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). In Luxembourg this difference was more pronounced, as we note that Non-Life insurers invested 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. An observation was the contrast in behaviour between Luxembourg Composite insurers and their counterpart at EU level with regard to the Mortgages and loans: Luxembourg Composite insurers and reinsurers reported 10,1% of their investments in this category, in sharp contrast to the EU level which amounted to 2,3%.

## 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 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	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
<b>Equity</b>	<b>3 010</b>	<b>15</b>	<b>6,1%</b>	<b>12,0%</b>	<b>9,5%</b>	<b>1,1%</b>	<b>28,1%</b>	<b>6,5%</b>
Common equity	1 701	15	3,4%	10,4%	7,8%	1,0%	22,5%	6,0%
Equity of real estate related corporation	332	13	0,7%	1,0%	1,1%	0,0%	4,0%	1,2%
Other equity	977	8	2,0%	0,6%	0,6%	0,0%	2,0%	0,7%
<b>Collective Investment Undertakings - Equity funds</b>	<b>2 032</b>	<b>12</b>	<b>4,1%</b>	<b>3,8%</b>	<b>3,2%</b>	<b>0,4%</b>	<b>14,7%</b>	<b>3,5%</b>
Equity funds	1 604	12	3,2%	3,2%	2,7%	0,4%	10,9%	2,4%
Private equity funds	428	10	0,9%	0,5%	0,5%	0,0%	6,9%	1,3%
<b>Structured notes - Equity risk</b>	<b>156</b>	<b>5</b>	<b>0,3%</b>	<b>0,2%</b>	<b>0,1%</b>	<b>0,0%</b>	<b>0,6%</b>	<b>0,1%</b>
<b>Total Equity exposure</b>	<b>5 198</b>	<b>13</b>	<b>10,5%</b>	<b>16,0%</b>	<b>12,7%</b>	<b>2,5%</b>	<b>37,4%</b>	<b>8,4%</b>
<b>Equity without Equity of real estate related corporation</b>	<b>2 677</b>	<b>14</b>	<b>5,4%</b>	<b>11,0%</b>	<b>8,4%</b>	<b>1,1%</b>	<b>24,1%</b>	<b>6,1%</b>
<b>Equity exposure without Equity of real estate related corporation</b>	<b>4 865</b>	<b>13</b>	<b>9,8%</b>	<b>15,0%</b>	<b>11,7%</b>	<b>2,4%</b>	<b>33,3%</b>	<b>7,9%</b>
<b>Equities market value balance sheet (rescaled to CIC scope)</b>	<b>1 195</b>	<b>14</b>	<b>2,4%</b>	<b>3,6%</b>	<b>3,2%</b>	<b>0,1%</b>	<b>20,6%</b>	<b>4,0%</b>
Equities - listed (rescaled to CIC scope)	1 178	13	2,4%	3,0%	2,6%	0,0%	15,4%	3,2%
Equities - unlisted (rescaled to CIC scope)	17	20	0,0%	0,6%	0,6%	0,0%	5,2%	1,0%
<b>Equity exposure based upon (Un)Listed equities (rescaled)</b>	<b>3 383</b>	<b>13</b>	<b>6,8%</b>	<b>7,6%</b>	<b>6,5%</b>	<b>1,2%</b>	<b>29,8%</b>	<b>6,7%</b>

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 Luxembourg, we note that equity exposures coming from Collective Investment Undertakings amount to 4,1% and are higher than the listed and unlisted equity exposures which in total amount to 2,4%. Hereby the listed and unlisted equities in Luxembourg are not 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	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
<b>Direct equity</b>	<b>3 010</b>	<b>15</b>	<b>57,9%</b>	<b>75,2%</b>	<b>73,4%</b>	<b>39,2%</b>	<b>94,5%</b>	<b>15,9%</b>
Common equity	1 701	15	32,7%	64,8%	59,4%	28,6%	93,3%	19,0%
Equity of real estate related corporation	332	13	6,4%	6,4%	8,4%	0,0%	39,1%	9,6%
Other equity	977	8	18,8%	3,9%	5,7%	0,0%	35,3%	8,8%
<b>Indirect equity</b>	<b>2 188</b>	<b>12</b>	<b>42,1%</b>	<b>24,8%</b>	<b>26,6%</b>	<b>5,5%</b>	<b>60,8%</b>	<b>15,9%</b>
Collective Investment Undertakings - Equity funds	2 032	12	39,1%	23,6%	25,9%	4,6%	60,6%	15,7%
Equity funds	1 604	12	30,9%	20,2%	22,8%	4,6%	52,9%	13,4%
Private equity funds	428	10	8,2%	3,3%	3,1%	0,0%	28,4%	5,7%
Structured notes - Equity risk	156	5	3,0%	1,3%	0,7%	0,0%	4,0%	1,0%
<b>Total Equity exposure</b>	<b>5 198</b>	<b>13</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>0,0%</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

In 2017 Q4, the insurance market in Luxembourg was invested significantly more in Direct equity (57,9% of Total equity) than in Indirect equity (42,1% of Total equity).

In terms of direct equity exposure, Luxembourg ranked number 15 and number 13 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 30,9% of Total equity, more than 3 times 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	LU			
	EU home	EU other	outside EU (1)	Total
<b>Equity</b>	<b>780</b>	<b>1 083</b>	<b>1 146</b>	<b>3 010</b>
Common equity	444	532	724	1 701
Equity of real estate related corporation	242	77	13	332
Other	94	474	409	977
<b>Collective Investment Undertakings - Equity funds</b>	<b>503</b>	<b>1 258</b>	<b>270</b>	<b>2 032</b>
Equity funds	495	1 027	82	1 604
Private equity funds	8	232	188	428
<b>Structured notes - Equity risk</b>	<b>56</b>	<b>93</b>	<b>7</b>	<b>156</b>
<b>Total Equity exposure</b>	<b>1 340</b>	<b>2 435</b>	<b>1 423</b>	<b>5 198</b>

in %	LU			
	EU home	EU other	outside EU (1)	Total
<b>Equity</b>	<b>25,9%</b>	<b>36,0%</b>	<b>38,1%</b>	<b>100,0%</b>
Common equity	26,1%	31,3%	42,6%	100,0%
Equity of real estate related corporation	72,9%	23,3%	3,8%	100,0%
Other	9,6%	48,5%	41,9%	100,0%
<b>Collective Investment Undertakings - Equity funds</b>	<b>24,8%</b>	<b>61,9%</b>	<b>13,3%</b>	<b>100,0%</b>
Equity funds	30,9%	64,0%	5,1%	100,0%
Private equity funds	1,9%	54,1%	44,0%	100,0%
<b>Structured notes - Equity risk</b>	<b>36,1%</b>	<b>59,7%</b>	<b>4,2%</b>	<b>100,0%</b>
<b>Total Equity exposure</b>	<b>25,8%</b>	<b>46,9%</b>	<b>27,4%</b>	<b>100,0%</b>

(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 Luxembourg favoured domestic investments to some extent, dedicating to these 25,9% of their direct equity investments, and 24,8% of their indirect investments.

Table 10 also showed that besides the home market, Luxembourg insurers invested similar amounts in equity of other EU Member States than that of non-EU Member States. The United States, Germany and the rest of the world were the preferred destinations.

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

in Mio EUR	LU	
	Amount	%
<b>Home country</b>	<b>780</b>	<b>25,9%</b>
LU	780	25,9%
<b>Top 5 countries (outside home country)</b>	<b>1 983</b>	<b>65,9%</b>
US	647	21,5%
DE	534	17,8%
Rest of World and unassigned	449	14,9%
FR	256	8,5%
NL	97	3,2%
<b>Home + Top 5 countries (outside home country)</b>	<b>2 764</b>	<b>91,8%</b>
<b>Total Direct equity exposure (with real estate corporation)</b>	<b>3 010</b>	<b>100,0%</b>

in Mio EUR	LU	
	Amount	%
<b>Home country</b>	<b>538</b>	<b>20,1%</b>
LU	538	20,1%
<b>Top 5 countries (outside home country)</b>	<b>1 948</b>	<b>72,8%</b>
US	634	23,7%
DE	532	19,9%
Rest of World and unassigned	449	16,8%
FR	239	8,9%
NL	94	3,5%
<b>Home + Top 5 countries (outside home country)</b>	<b>2 486</b>	<b>92,9%</b>
<b>Total Direct equity exposure (without real estate corporation)</b>	<b>2 677</b>	<b>100,0%</b>

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 minor difference with respect to the Assets held for index-linked and unit-linked investments 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 LU		Solvency II balance sheet LU		Difference
	#	%	#	%	#
Life undertakings	40	42,1%	40	42,1%	0
Non-Life undertakings	32	33,7%	32	33,7%	0
Reinsurance undertakings	23	24,2%	23	24,2%	0
Undertakings pursuing both life and non-life insurance activity	0	0,0%	0	0,0%	0
<b>Total</b>	<b>95</b>	<b>100,0%</b>	<b>95</b>	<b>100,0%</b>	<b>0</b>

in Mio EUR	Exposure list LU		Solvency II balance sheet LU		Difference
	Amount	%	Amount	%	%
Assets held for index-linked and unit-linked contracts	126 533	100,0%	126 452	100,0%	0,1%

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	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
<b>Equity</b>	<b>16 100</b>	<b>4</b>	<b>12,7%</b>	<b>19,3%</b>	<b>4,5%</b>	<b>0,0%</b>	<b>30,1%</b>	<b>7,1%</b>
Common equity	12 230	4	9,7%	18,0%	3,9%	0,0%	28,8%	6,3%
Equity of real estate related corporation	709	6	0,6%	0,8%	0,3%	0,0%	1,5%	0,5%
Other equity	3 161	3	2,5%	0,4%	0,3%	0,0%	4,1%	0,9%
<b>Collective Investment Undertakings</b>	<b>80 480</b>	<b>7</b>	<b>63,6%</b>	<b>63,2%</b>	<b>73,1%</b>	<b>30,1%</b>	<b>97,5%</b>	<b>16,3%</b>
Equity funds	24 948	8	19,7%	26,5%	29,2%	11,2%	57,5%	10,5%
Private equity funds	896	2	0,7%	0,1%	0,2%	0,0%	2,9%	0,6%
Debt funds	18 926	7	15,0%	12,1%	19,0%	4,8%	47,5%	11,4%
Money market funds	2 580	5	2,0%	2,2%	1,7%	0,0%	7,5%	1,8%
Asset allocation funds	17 436	7	13,8%	14,8%	13,1%	0,4%	30,5%	7,7%
Real estate funds	583	6	0,5%	1,4%	0,6%	0,0%	6,2%	1,2%
Alternative funds	6 306	4	5,0%	1,6%	2,4%	0,0%	16,3%	3,8%
Infrastructure funds	4	6	0,0%	0,0%	0,1%	0,0%	2,4%	0,5%
Other	8 799	8	7,0%	4,6%	6,9%	0,0%	44,3%	10,0%
<b>Government bonds</b>	<b>1 524</b>	<b>8</b>	<b>1,2%</b>	<b>6,4%</b>	<b>6,9%</b>	<b>0,0%</b>	<b>31,4%</b>	<b>8,4%</b>
<b>Corporate bonds</b>	<b>11 608</b>	<b>3</b>	<b>9,2%</b>	<b>3,9%</b>	<b>6,0%</b>	<b>0,0%</b>	<b>22,7%</b>	<b>6,9%</b>
<b>Structured notes</b>	<b>4 171</b>	<b>2</b>	<b>3,3%</b>	<b>1,6%</b>	<b>4,1%</b>	<b>0,0%</b>	<b>18,9%</b>	<b>4,9%</b>
<b>Collateralised securities</b>	<b>46</b>	<b>4</b>	<b>0,0%</b>	<b>0,1%</b>	<b>0,1%</b>	<b>0,0%</b>	<b>0,9%</b>	<b>0,2%</b>
<b>Mortgages and loans</b>	<b>7</b>	<b>11</b>	<b>0,0%</b>	<b>0,2%</b>	<b>0,2%</b>	<b>-3,7%</b>	<b>2,5%</b>	<b>1,0%</b>
<b>Property</b>	<b>65</b>	<b>8</b>	<b>0,1%</b>	<b>1,3%</b>	<b>0,6%</b>	<b>0,0%</b>	<b>7,6%</b>	<b>1,5%</b>
<b>Deposits</b>	<b>3 968</b>	<b>4</b>	<b>3,1%</b>	<b>1,2%</b>	<b>2,0%</b>	<b>-0,3%</b>	<b>14,5%</b>	<b>3,3%</b>
<b>Cash and cash equivalents</b>	<b>8 546</b>	<b>1</b>	<b>6,8%</b>	<b>1,2%</b>	<b>2,2%</b>	<b>0,0%</b>	<b>8,5%</b>	<b>2,5%</b>
<b>Other investments</b>	<b>15</b>	<b>5</b>	<b>0,0%</b>	<b>0,4%</b>	<b>0,3%</b>	<b>0,0%</b>	<b>8,1%</b>	<b>1,5%</b>
<b>Not reported</b>	<b>2</b>	<b>4</b>	<b>0,0%</b>	<b>1,2%</b>	<b>0,1%</b>	<b>0,0%</b>	<b>2,3%</b>	<b>0,4%</b>
<b>Total Investments, deposits, cash and cash equivalents</b>	<b>126 533</b>	<b>6</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>0,0%</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

The Collective Investment Undertakings (63,6%) and the Equity (12,7%) 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 large difference between the portion of index-linked and unit-linked related assets that were invested in Direct equity, 12,7% in Luxembourg compared to 4,5% 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	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
<b>Equity</b>	<b>16 100</b>	<b>4</b>	<b>12,7%</b>	<b>19,3%</b>	<b>4,5%</b>	<b>0,0%</b>	<b>30,1%</b>	<b>7,1%</b>
Common equity	12 230	4	9,7%	18,0%	3,9%	0,0%	28,8%	6,3%
Equity of real estate related corporation	709	6	0,6%	0,8%	0,3%	0,0%	1,5%	0,5%
Other equity	3 161	3	2,5%	0,4%	0,3%	0,0%	4,1%	0,9%
<b>Collective Investment Undertakings - Equity funds</b>	<b>25 845</b>	<b>8</b>	<b>20,4%</b>	<b>26,5%</b>	<b>29,3%</b>	<b>11,2%</b>	<b>57,5%</b>	<b>10,4%</b>
Equity funds	24 948	8	19,7%	26,5%	29,2%	11,2%	57,5%	10,5%
Private equity funds	896	2	0,7%	0,1%	0,2%	0,0%	2,9%	0,6%
<b>Structured notes - Equity risk</b>	<b>2 485</b>	<b>2</b>	<b>2,0%</b>	<b>1,2%</b>	<b>2,7%</b>	<b>0,0%</b>	<b>15,0%</b>	<b>3,5%</b>
<b>Total Equity exposure</b>	<b>44 431</b>	<b>8</b>	<b>35,1%</b>	<b>47,1%</b>	<b>36,5%</b>	<b>11,7%</b>	<b>58,6%</b>	<b>10,9%</b>
<b>Equity without Equity of real estate related corporation</b>	<b>15 391</b>	<b>14</b>	<b>12,2%</b>	<b>16,0%</b>	<b>4,2%</b>	<b>0,0%</b>	<b>29,2%</b>	<b>6,8%</b>
<b>Equity exposure without Equity of real estate related corporation</b>	<b>43 721</b>	<b>8</b>	<b>34,6%</b>	<b>40,0%</b>	<b>36,2%</b>	<b>11,7%</b>	<b>58,6%</b>	<b>10,8%</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

In Luxembourg, we note that total equity exposures related to index-linked and unit-linked contracts (35,1%) are significantly higher in comparison to non-index-linked and unit-linked contracts (10,5%). 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	LU			EU				
	Amount	Rank	%	%	Avg	Min	Max	StD
<b>Direct equity</b>	<b>16 100</b>	<b>4</b>	<b>36,2%</b>	<b>38,3%</b>	<b>11,1%</b>	<b>0,0%</b>	<b>54,2%</b>	<b>15,2%</b>
Common equity	12 230	4	27,5%	35,4%	9,6%	0,0%	51,8%	13,2%
Equity of real estate related corporation	709	6	1,6%	1,7%	0,7%	0,0%	4,0%	1,1%
Other equity	3 161	3	7,1%	1,3%	0,8%	0,0%	9,7%	2,2%
<b>Indirect equity</b>	<b>28 330</b>	<b>8</b>	<b>63,8%</b>	<b>61,7%</b>	<b>88,9%</b>	<b>45,8%</b>	<b>100,0%</b>	<b>15,2%</b>
Collective Investment Undertakings - Equity funds	25 845	8	58,2%	59,1%	81,5%	45,7%	100,0%	15,5%
Equity funds	24 948	8	56,2%	58,6%	81,0%	44,9%	100,0%	16,0%
Private equity funds	896	2	2,0%	0,5%	0,5%	0,0%	6,9%	1,4%
Structured notes - Equity risk	2 485	2	5,6%	2,6%	7,4%	0,0%	35,8%	9,6%
<b>Total Equity exposure</b>	<b>44 431</b>	<b>8</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>0,0%</b>

Source: EIOPA Solvency II statistics and Deloitte-CEPS analysis

In 2017 Q4, Luxembourg insurers invested more than half of their Assets held for index-linked and unit-linked contracts in Indirect equity (63,8%) of Total equity; with Direct equity thus constituting 36,2% of Total equity.

In terms of direct equity exposure, Luxembourg ranked number 4 and number 6 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, amounting to 56,2% of Total equity whereas allocation to Private equity funds constituted a small part.

## 4 Insurance products

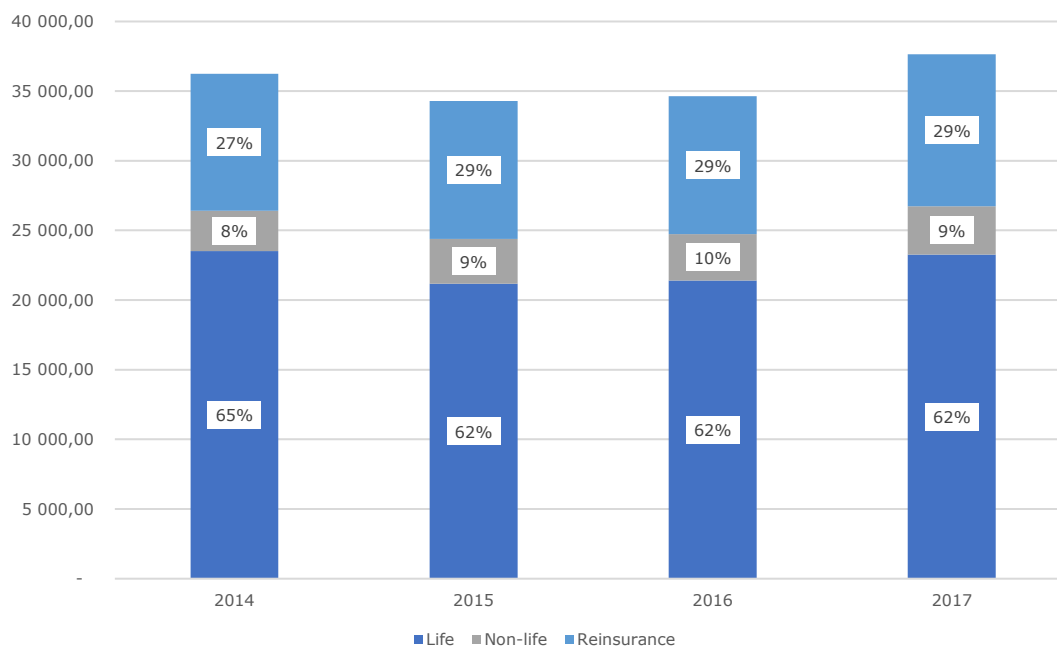
### 4.1 Overview

This section covers the most important insurance products offered in Luxembourg. Data reported in this section was obtained from the professional association of Luxembourg insurers and reinsurers (ACA)<sup>3</sup> and Commissariat aux Assurances (CAA)<sup>4</sup>.

The insurance market in Luxembourg can be divided into three broad categories: life insurance, non-life insurance, and reinsurance. Overall, we note that the market share of each category remains roughly stable over time, with a market share of 62,0% for life insurance, 9,0% for non-life insurance, and 29,0% for reinsurance in 2017.

Premiums written by Luxembourg insurance companies increased in 2017 by 8,7%. In particular, premium income increased from 34 641 million EUR in 2016 to 37 650 million EUR in 2017. Life insurance and reinsurance segments contributed the most towards this development, with respectively a growth rate of around 8,7% and 10,5%. Similar to the European insurance market, dominated by the life insurance segment, in Luxembourg life insurance business accounts for approximately 62%.

**Graph 1 - Gross written premiums (in Mio EUR)**



Source: CAA

<sup>3</sup> [https://www.aca.lu/media/5b598eef01afe\\_aca\\_annual\\_report\\_2017.pdf](https://www.aca.lu/media/5b598eef01afe_aca_annual_report_2017.pdf)

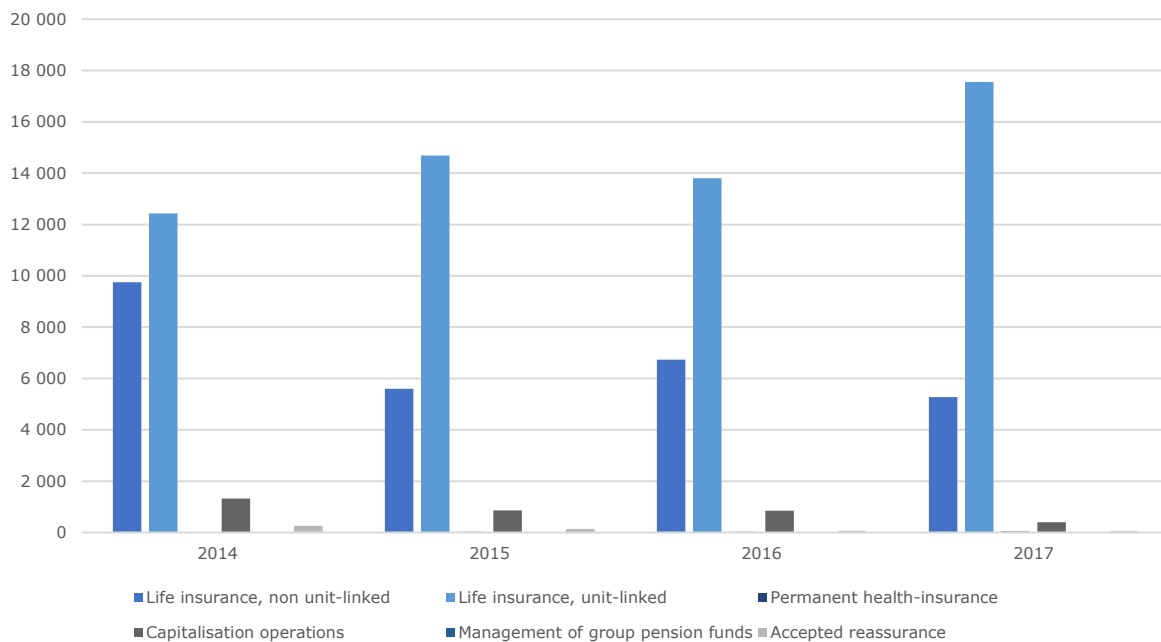
<sup>4</sup> [http://www.caa.lu/uploads/documents/files/rapport\\_annuel\\_2017\\_-\\_annexes.pdf](http://www.caa.lu/uploads/documents/files/rapport_annuel_2017_-_annexes.pdf)

## 4.2 Life insurance products

Life insurers are the largest segment in the Luxembourg insurance industry with gross written premiums of 23 000 million EUR in 2017. Life insurance (non-unit linked) and life insurance (unit-linked), generate 98% of the total premiums, with a share of 23,0% and 75,0% respectively in 2017.

Overall we note that the life insurance market increased by 8,7% in 2017, from 21 472 million EUR in 2016 to 23 323 million EUR in 2017. In particular, premiums written by Luxembourg insurance companies in Life Insurance (unit-linked), rose steadily in 2017, with a growth rate of 27,2%. Life insurance (non-unit linked) showed a steady decline of 21,6%. Although Group Pension Funds Activities and Permanent health insurance still represent a small part of life insurance, we note that they increased respectively by 12% and 10%.

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



Source: CAA

### **4.3 Non-Life insurance products**

Next sections contain information about main Non-Life insurance products available on the Luxembourg market. According to the report published by CAA, Non-life insurance business represents 10,5% of the insurance market . Over the last year, premium income increased by 4,1%.

#### **4.3.1 Medical expense insurance:**

In Luxembourg, the medical expense insurance accounted for about 7,4% or 277 million EUR of the non-life insurance products premiums in 2017. This section of the Luxembourg non-life insurance products experienced significant growth in the last four years, from 182 million EUR in 2014 to 277 million EUR in 2017, at a growth rate between 11,8% and 19,9% per year.<sup>5</sup>

#### **4.3.2 Income protection insurance**

No data available from CAA for the Income Protection insurance in Luxembourg.

#### **4.3.3 Worker's compensation insurance**

No data available from CAA for the Worker's Compensation insurance in Luxembourg.

#### **4.3.4 Motor vehicle insurance:**

Motor Vehicle insurance is ranked 5<sup>th</sup> among the non-life insurance product in Luxembourg, according to gross written premiums. It usually has a duration of a year and accounts for 8,8% or 330 million EUR of the gross non-life premiums in 2017. From 2014 to 2017, gross premiums for motor vehicle insurance increased by 23,7% from 266 million EUR in 2014 to 330 million EUR in 2017. <sup>6</sup>

#### **4.3.5 Other motor insurance**

Other motor insurance is ranked 9<sup>th</sup> among the non-life insurance products in Luxembourg, based on gross written premiums. It accounts for 5,2% or 195 million EUR of the non-life products' gross written premiums of Luxembourg in 2017. From 2014 to 2017, gross premiums for other motor insurance increased by 10,7% from 177 million EUR in 2014 to 195 million EUR in 2017.<sup>7</sup>

#### **4.3.6 Marine, aviation and transport insurance**

In Luxembourg, the marine, aviation and transport insurance accounted for about 16,4% or 610 million EUR of the non-life insurance products premiums.<sup>8</sup> From 2014 to 2017, gross premiums for Marine, Aviation and Transport Insurance decreased by 16,3% from 729 million EUR in 2014 to 610 million EUR in 2017.

#### **4.3.7 Fire and other damage to property insurance**

Fire and other damage to property insurance is the most common non-life insurance product sold in Luxembourg. It accounts for 18,2% or 678 million EUR of the non-life insurance premiums in 2017. Several products are sold underneath the fire and other damage to property insurance, such as the Agriculture insurance, Fire and natural elements insurance, House insurance, Industry and Commercial Insurance and Other damages to

---

<sup>5</sup> CAA, Rapport Annuel 2017, Annexes, p.40

<sup>6</sup> CAA, Rapport Annuel 2017, Annexes, p.40

<sup>7</sup> CAA, Rapport Annuel 2017, Annexes, p.40

<sup>8</sup> CAA, Rapport Annuel 2017, Annexes, p.40

goods. Over the past four years there was an 31,5% increase in the total gross premiums of Fire and other damage to property insurance, from 515 million EUR in 2014 to 678 million EUR in 2017.<sup>9</sup>

#### **4.3.8 General liability insurance**

In Luxembourg, the general liability insurance accounted for about 10,1% or 375 million EUR of the non-life insurance products premiums in 2017.<sup>10</sup> From 2014-2017 the gross premiums for general liability insurance increased by 26,3% or 78 million EUR.

#### **4.3.9 Credit and suretyship insurance**

In Luxembourg, the credit and suretyship insurance accounted for about 17,7% or 658 million EUR of the non-life insurance products premiums for 2017.<sup>11</sup> Credit and suretyship was is the second largest non-life insurance product category for Luxembourg. From 2014 to 2017, gross premiums for Credit and Suretyship Insurance increased by 29,7% from 508 million EUR in 2014 to 658 million EUR in 2017.

#### **4.3.10 Legal expenses insurance**

In Luxembourg, the legal expenses insurance accounted for about 0,9% or 34 million EUR of the non-life insurance products premiums. This represents an increase of 13,9% over a period of four years, from 2014-2017.<sup>12</sup>

#### **4.3.11 Assistance**

In Luxembourg, the Assistance category of the non-life insurance products represented 0,5% of the total gross written premiums or 18 million EUR. Assistance has seen a growth of 37,2% or 5 million EUR over the period 2014-2017, reaching a high of 19 million in 2016.<sup>13</sup>

#### **4.3.12 Miscellaneous financial loss**

In Luxembourg, the Miscellaneous financial Loss accounted for 7,7% or 288 million EUR of the non-life insurance product premiums. This represents an increase of 46,1% over the observation period, 2014-2017.<sup>14</sup>

#### **4.3.13 Accepted Reinsurance:**

In Luxembourg, the CAA also specifies an Accepted Reinsurance category for the non-life insurance products. This category represents 7,0% or 262 million EUR of the 2017 gross written premiums for the non-life insurance products. Accepted Reinsurance has seen a decline from 2014 to 2015 by 6,7% and an increase of 4,7% and 4,5% in 2016 and 2017 respectively.

---

9 CAA, Rapport Annuel 2017, Annexes, p.40

10 CAA, Rapport Annuel 2017, Annexes, p.40

11 CAA, Rapport Annuel 2017, Annexes, p.40

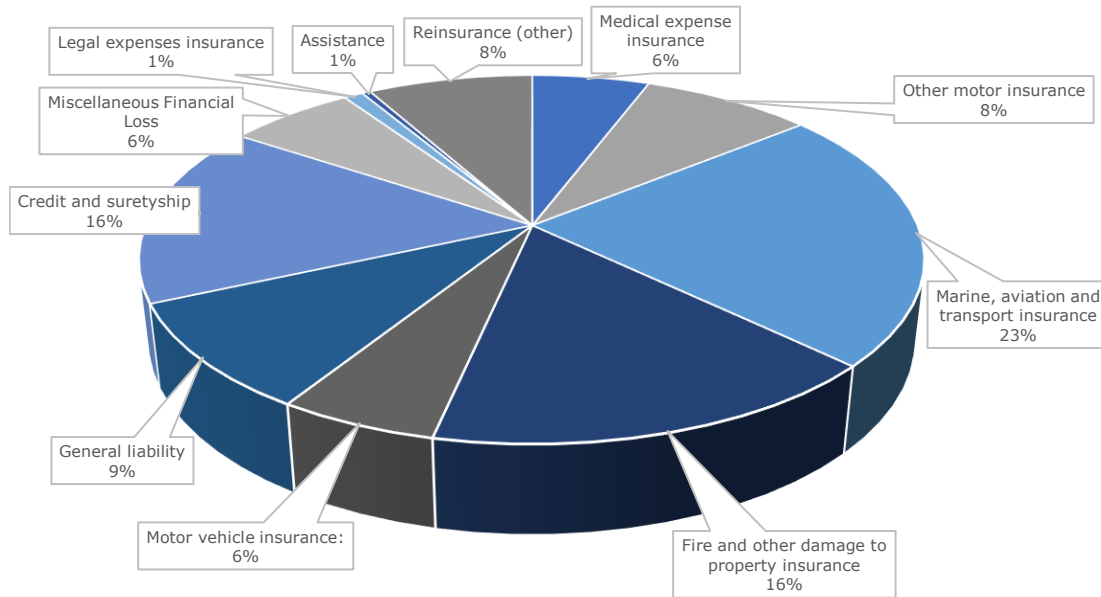
12 CAA, Rapport Annuel 2017, Annexes, p.40

13 CAA, Rapport Annuel 2017, Annexes, p.40

14 CAA, Rapport Annuel 2017, Annexes, p.40



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



Source: The professional association of Luxembourg insurers and reinsurers (ACA)

#### 4.4 Average duration

In 2016, EIOPA published their Insurance Stress Test Report, which resulted in the following conclusions for Luxembourg:

1. The approximate effective duration for the TP life for all lines of business reported by the EIOPA 2016 stress test participants is 2,38;
2. The Macaulay duration for the TP life for all lines of business reported by the EIOPA 2016 stress test participants is 11,78.

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.

## 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.<sup>15</sup>

1. Applicable GAAP at consolidated level: IFRS required for all listed companies on a regulated market (as defined by the EU) and permitted for all listed companies on a non-regulated market and permitted for all non-listed companies<sup>16</sup>;
2. Applicable GAAP at statutory level: IFRS permitted for all listed and non-listed companies<sup>16</sup>;

### 5.2 Tax framework

#### 5.2.1 Capital gains on shares

Capital gains derived from the disposal of shares may be exempt from corporate income if:

1. A residence requirement: the parent company is a fully taxable resident company, a Luxembourg permanent establishment of a company resident in an EEA country and referred to in article 2 of the EU Parent-Subsidiary Directive (2011/96) or a Luxembourg permanent establishment of a company resident in a country with which Luxembourg has concluded a tax treaty;
2. A second residence requirement: the subsidiary is a fully taxable resident company;
3. A holding requirement: at the date of the shares' disposal, the recipient holds, or undertakes to hold continuously, a minimum participation of 10% or a participation with an acquisition price of at least 6 million EUR in the capital of the subsidiary during an uninterrupted period of at least 12 months.

If one or more of the above conditions is not complied with, this will result in taxation whereby capital gains are charged to corporation tax at the same rate as other profits or income: 15% for the taxable income not exceeding 25 000 EUR, 33% for income between 25 000 EUR and 30 000 EUR and 18% for income exceeding 30 000 EUR. These rates are supplemented by municipal business tax.

#### 5.2.2 Capital losses on shares

A capital loss from the sale or other disposition of business property is treated as any other loss made during the accounting year. It may be set off against positive income.

#### 5.2.3 Taxation of dividends

A 100% exemption applies on dividends under the same conditions as the exemption for capital gains, but there is no minimum acquisition value for this exemption to apply. If one or more of the above conditions is not met, the dividend is taxed at the ordinary tax rate.

---

<sup>15</sup> [https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/financial-reporting\\_en](https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/financial-reporting_en)

<sup>16</sup> <https://www.ifrs.org/-/media/feature/around-the-world/jurisdiction-profiles/luxembourg-ifrs-profile.pdf>

Luxembourg source dividends are subject to 15% withholding tax (WHT), unless a tax treaty provides for a lower rate or the EU parent-subsidiary directive applies. Luxembourg has extended the benefits of the directive to parent companies resident in non-EU tax treaty countries, provided conditions similar to those under the Luxembourg participation exemption are satisfied and the parent company is subject to a tax similar to Luxembourg corporate income tax.

Foreign tax paid may be credit against Luxembourg tax if the foreign tax is comparable to Luxembourg corporate income tax. The credit is limited to the amount of Luxembourg income tax payable on the foreign income.

## 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 Luxembourg 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 index-linked and unit-linked investments based upon Solvency I and Solvency II**



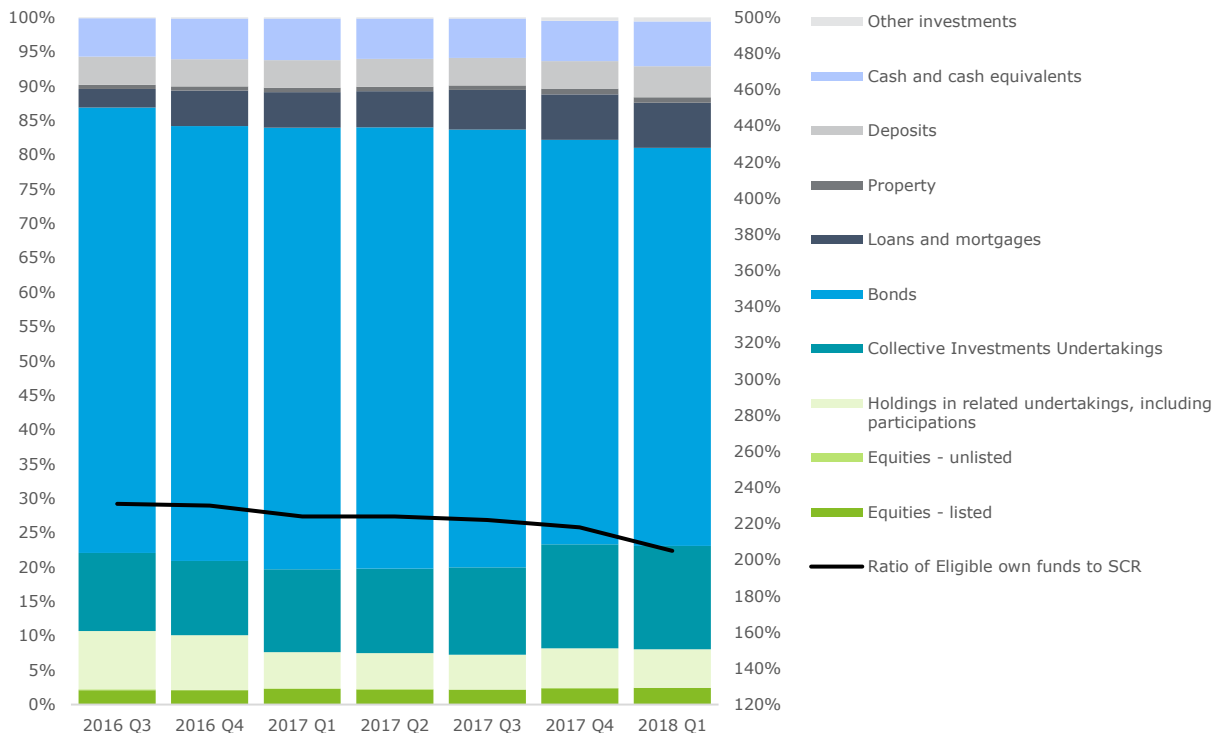
Source: EIOPA Solvency I and Solvency II statistics and Deloitte-CEPS analysis

As shown in Graph 4, the share of index-linked and unit-linked investments in comparison to total assets shows a relatively stable behaviour. Furthermore, there is a missing value for the year 2015. The graph for the EU shows a relatively stable behaviour over the observation period, with a slightly increasing trend as from 2011.

## 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 Luxembourg insurers' balance sheet has remained relatively stable over the quarters since the introduction of Solvency II on 1 January 2016<sup>17</sup>. The combined weight of the most dominant assets classes, Bonds and Collective Investment Undertakings, does not change significantly over the observation period. However, the individual percentages of Collective Investments Undertakings, Cash and cash equivalents and Loans and Mortgages, have all increased slightly, whereas the percentage for Bonds decreased slightly over the period 2016 Q3 until 2017 Q3 and significantly in 2017 Q4 and 2018 Q1.

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

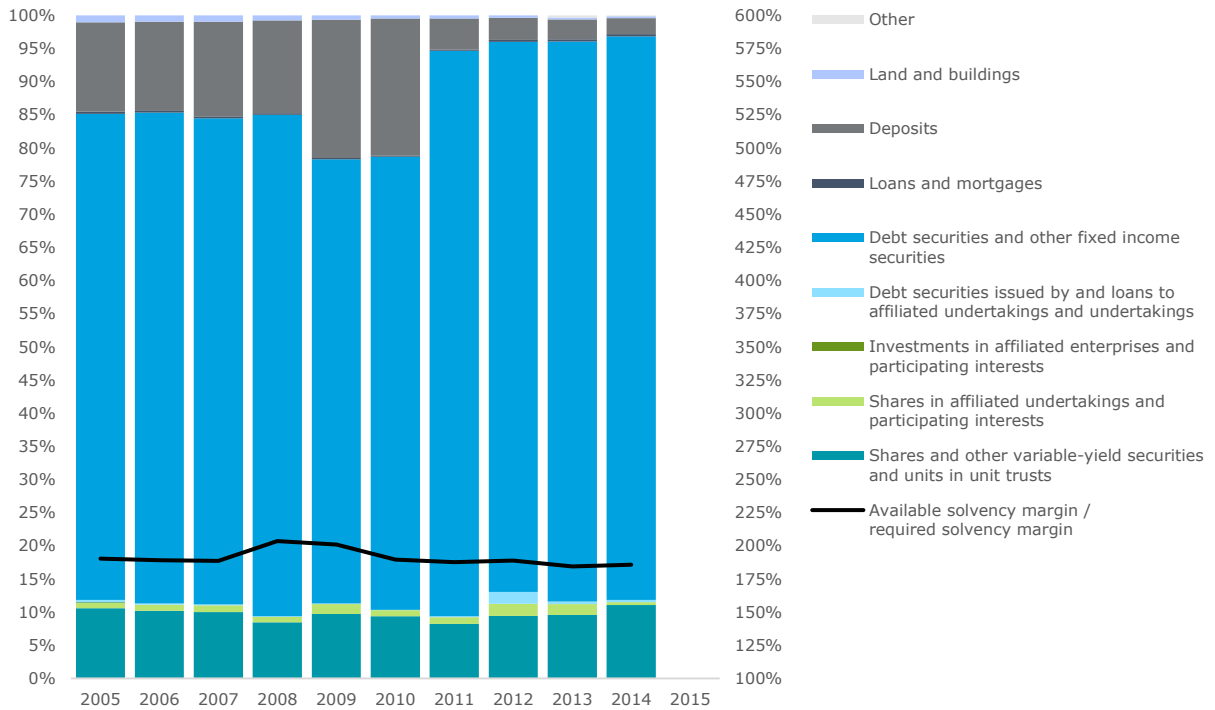
For Luxembourg, the SCR ratio shows a decreasing trend as from 2016 Q3. Overall, this trend has not resulted into significant changes in the asset allocation of the overall Luxembourg insurance market.

<sup>17</sup> Day one reporting, 2016 Q1 and Q2 are not publicly available

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

Based upon the Solvency I yearly data from 2005 until 2015, with a missing value for 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)**

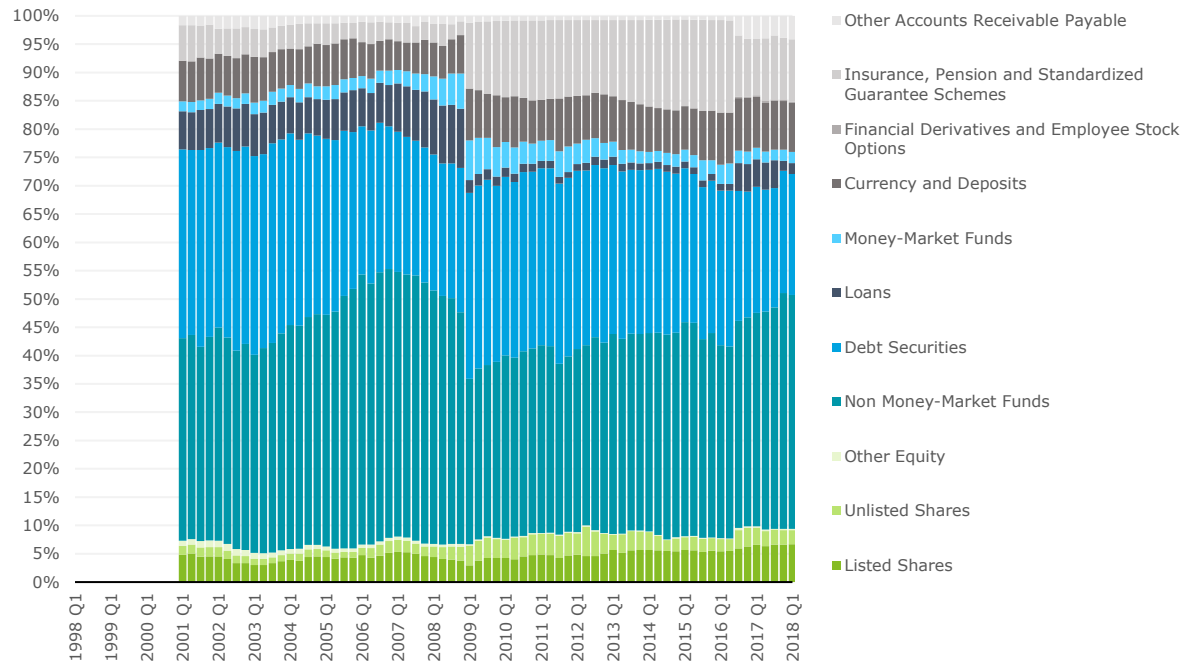


Source: EIOPA Solvency I statistics and Deloitte-CEPS analysis

Graph 6, which relates to Solvency I figures suggests the following observations. The dominance of Bonds that we observed under the rules of Solvency II has been a characteristic of the Luxembourg insurers' balance sheet for more than a decade.

## 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

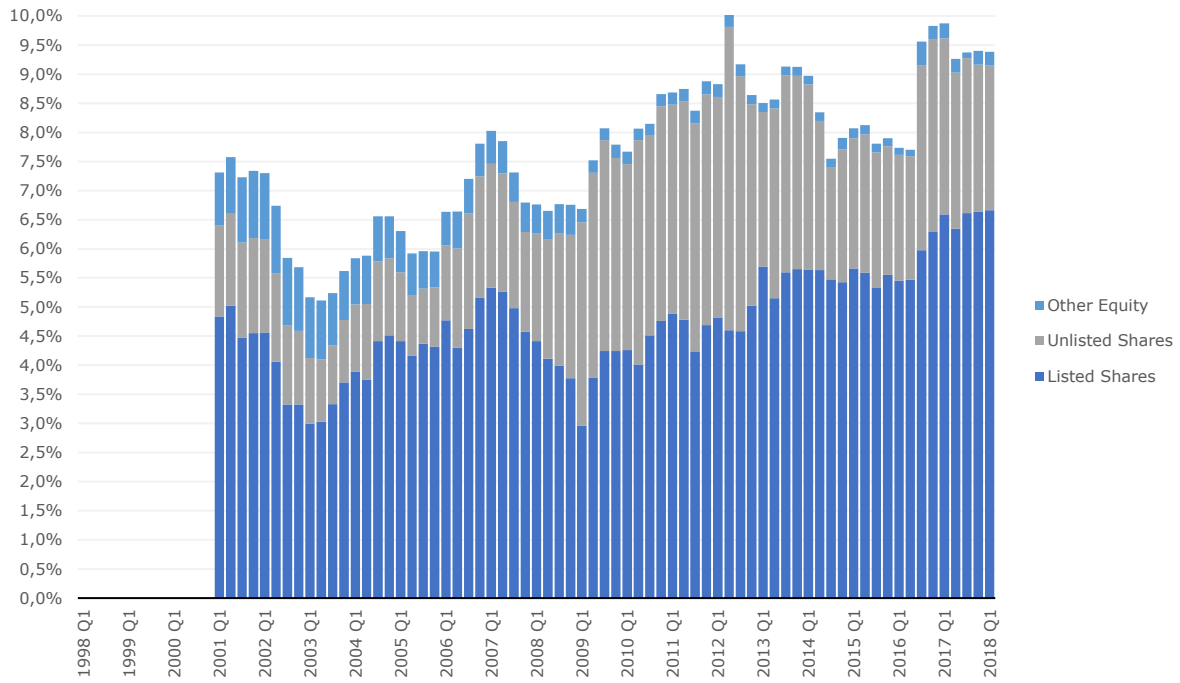
Graph 7 relates to figures of investments by Luxembourg Insurers since 2001 Q1 as reported by the ECB<sup>18</sup>. No data is available for Luxembourg before 2001 Q1. Although Debt Securities are an important part of the balance sheet over the observation period, the non Money-Market Funds make up a larger part of the ECB balance sheet. Also, over the last years, there is an increasing importance of the Other Accounts Receivable Payable.

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 Luxembourg 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.

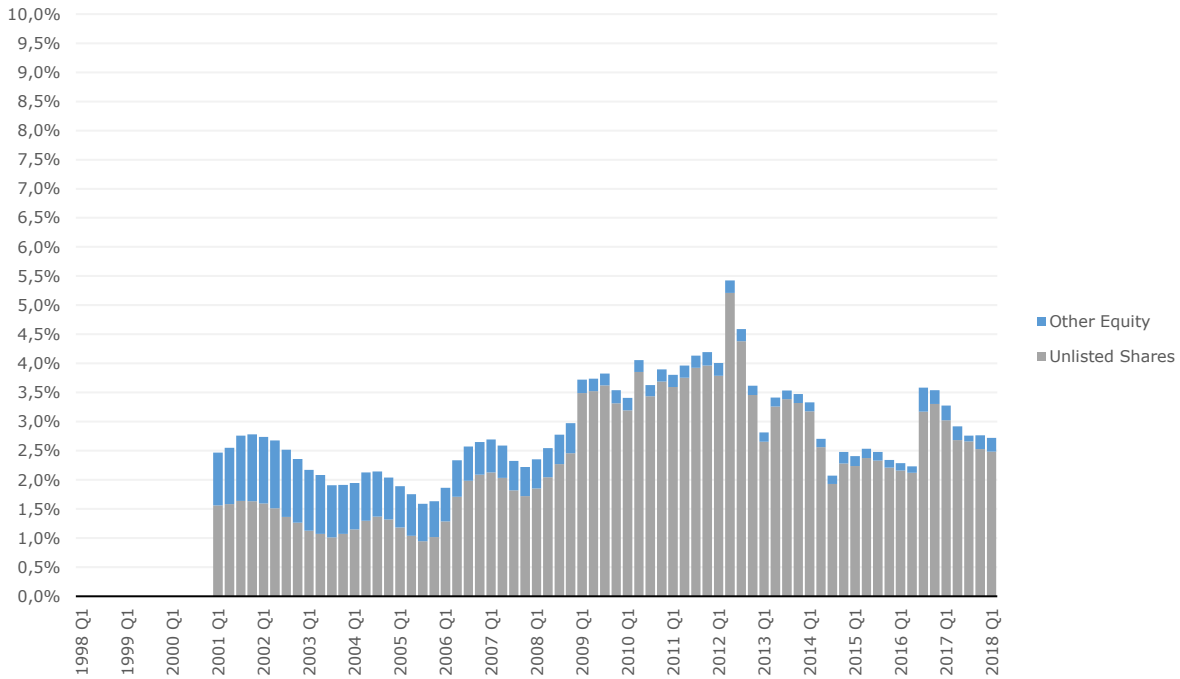
<sup>18</sup> The NSA of Luxembourg notes that since 2009 Q1, they use the official ECB Insurance Corporations and Pension Funds (ICPF) statistics as the source, which implies a re-classification at that point. However, this re-classification is about the loans/claims to insurers and is not related to the equity investments.

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



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

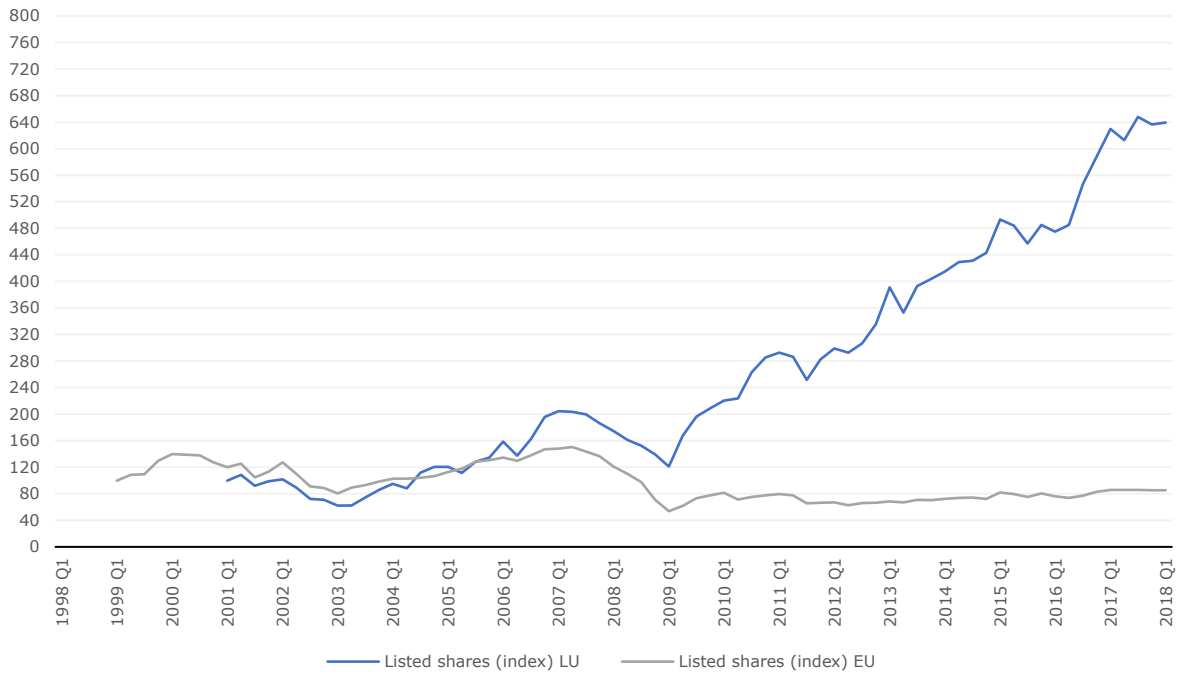
**Graph 9 - Evolution ECB balance sheet items (Unlisted Shares and Other Equity)**



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

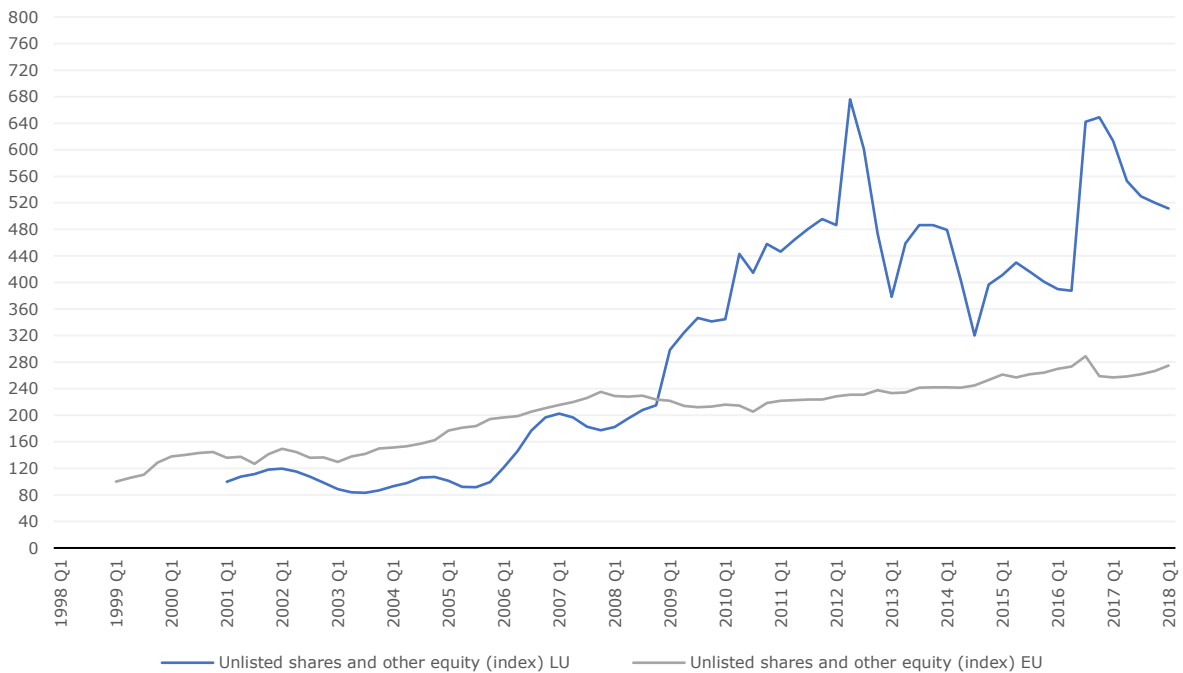


**Graph 10 - Evolution ECB listed shares LU and EU (as index)**



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

**Graph 11 - Evolution ECB unlisted shares LU 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 insurers in Luxembourg 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

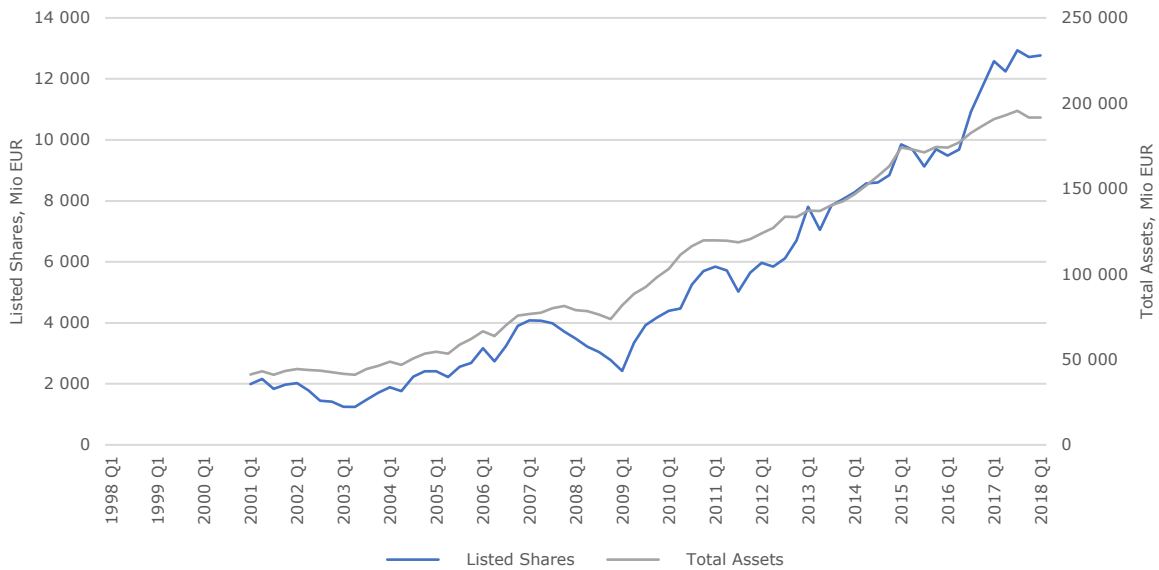
In the analysis below, the listed shares of insurance corporations are plotted against the total assets in the industry both in amounts and in indexed values. The aim of this comparative analysis is to understand the evolution of listed shares in the overall insurance market. Similarity of the growth 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. We observe that total assets experience an increasing upward trend from 41 270 million EUR in 2001 Q1 to 191 603 million EUR in 2018 Q1. Investments in listed shares display a similar increasing trend as compared to the total assets. Investments in listed shares grow from 1 997 million EUR to 12 765 million EUR, translating into an increase of 539%.

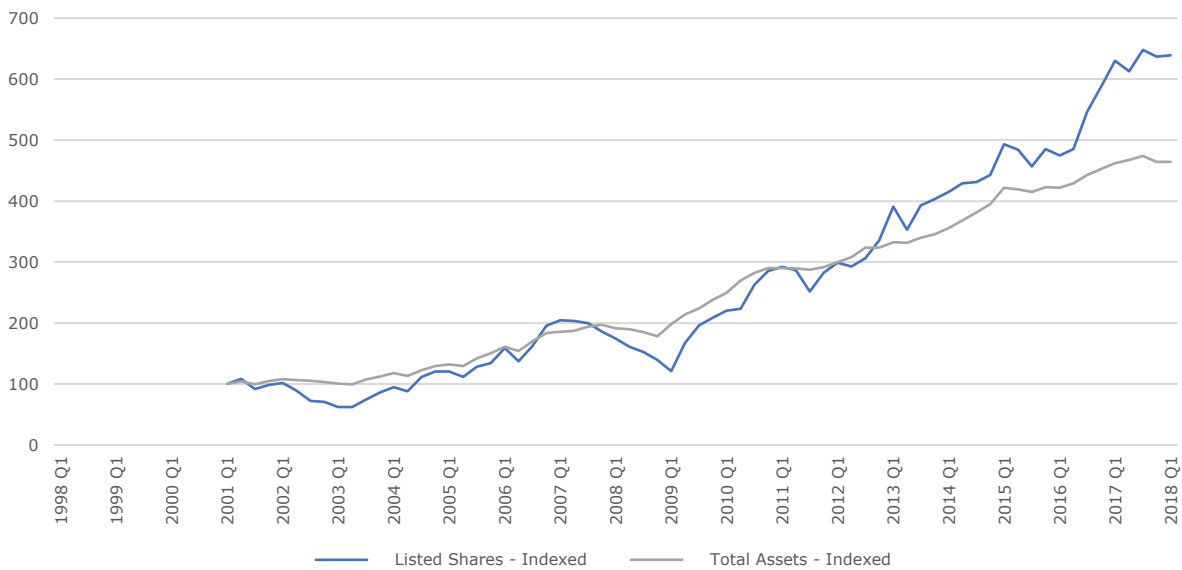
By indexing, the similarity in growth pattern of the investments in listed shares and total assets becomes more pronounced. From 2013 onwards, listed shares start increasing more than total assets. Concluding, that over the period 2001 – 2018, indexed total assets increase to a value of 464, while indexed investments in listed shares increase to a value of 639.

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



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

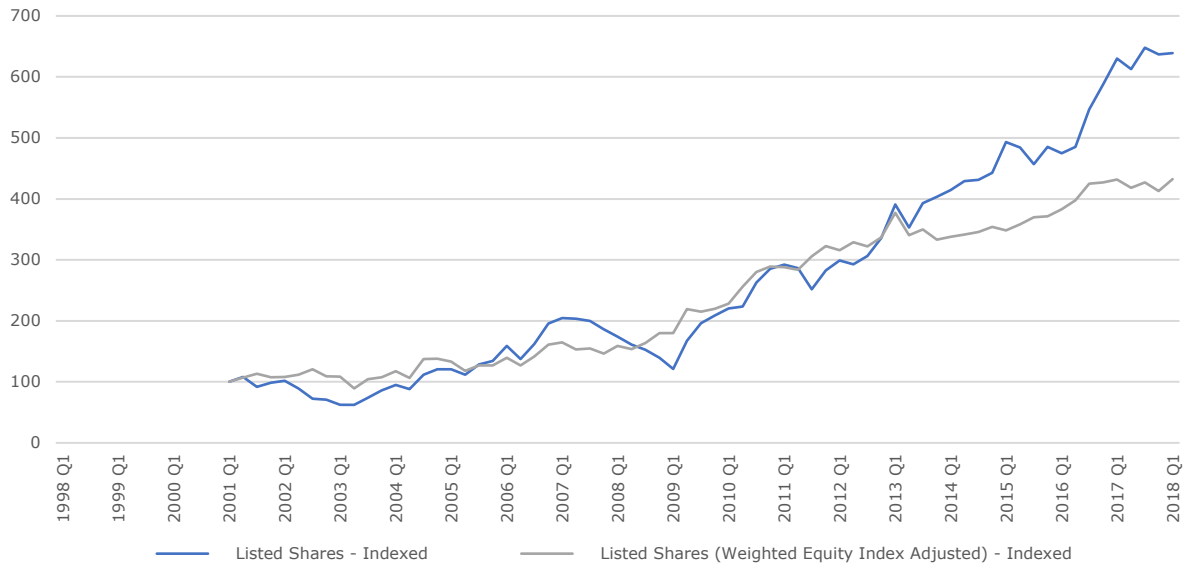
**Graph 13 – Evolution of Listed Shares and Total Assets, Indexed Values**



Source: ECB Statistical Data Warehouse and Deloitte-CEPS analysis

Graph 14 presents the indexed values of the amounts invested in listed shares against its Weighted Equity Index adjusted counterpart. On this graph, we observe that overall; the indexed amount of investments in listed shares Indexed and the adjusted amounts have a similar behaviour. However, we do observe some periods of deviation, where Listed Shares Indexed are larger than Weighted Listed Shares Index Adjusted. This is the case starting from 2013. This in turn points to a market price effect being present during that particular period. The increasing trend for Weighted Listed Shares Index Adjusted suggests that Luxembourgish insurers increase their investment in Listed Shares.

**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. Investments in this category show an increasing but volatile behaviour. The investment amounts experience several peaks and lows over the period 2012-2018. The highest accumulated amount is recorded in the second quarter of 2012. In the first quarter of 2018, the investments in unlisted shares and other equity attain a value of 5 215 million EUR.

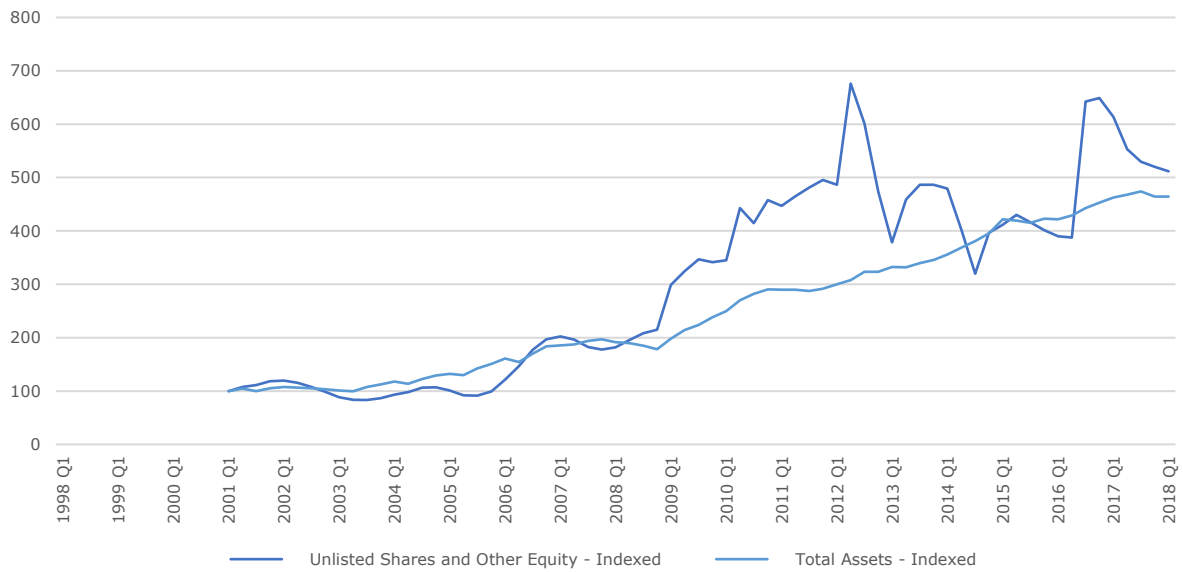
By indexing the values, the difference in growth pattern between the series becomes more pronounced. While total assets exhibit a stable increasing trend, investments in unlisted shares and other equity show a volatile increasing trend. Concluding, that over the period 2001 – 2018, total assets reach an Indexed value of 464. While investments in unlisted shares and other equity reach an indexed value of 512.

**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