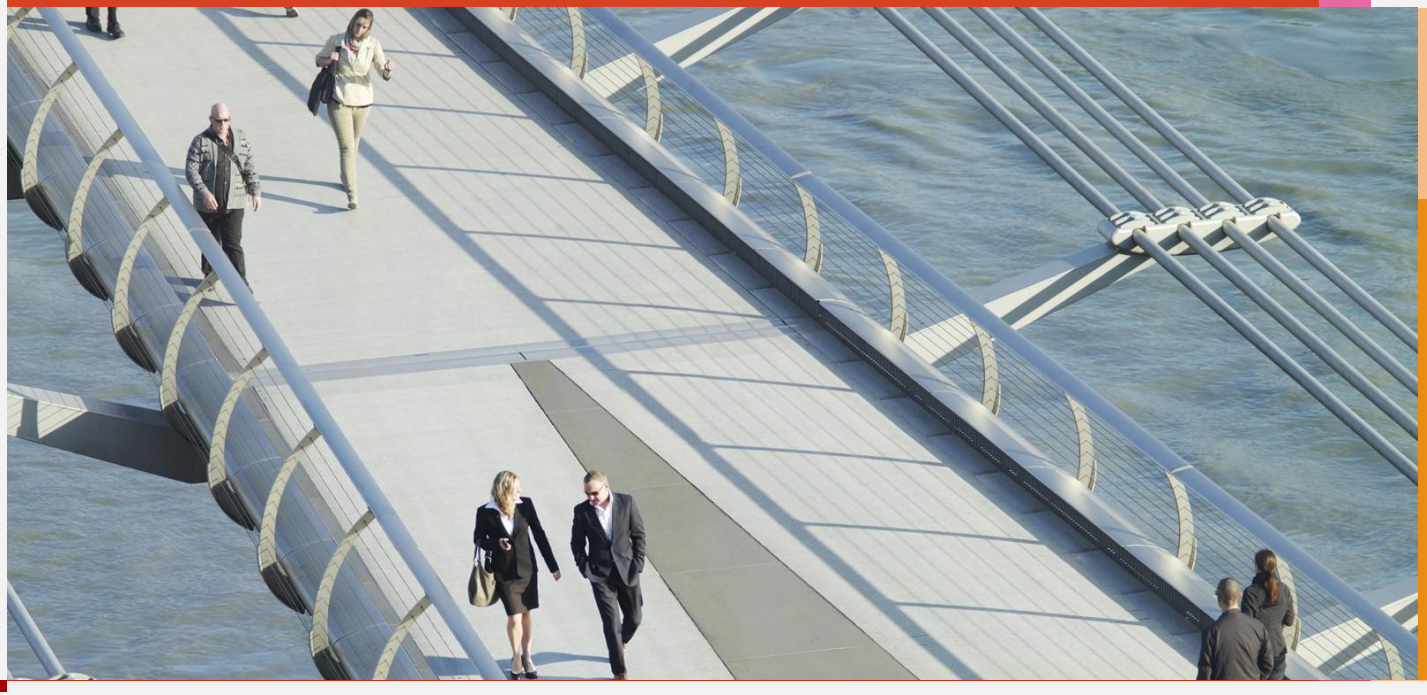
# *Solvency II benchmark*
# A comparison of the Dutch Insurance Market FY2016

*July 2017*



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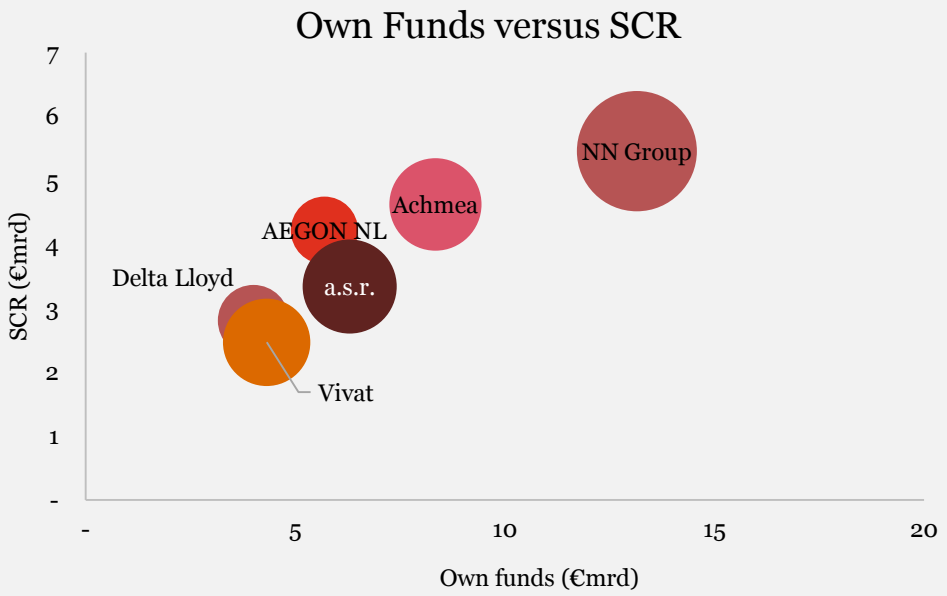
# *Solvency II – market overview of 6 insurance groups*

## *Diverse position of major players*




| | FY 2015 | *capital* | *evolution* | FY 2016 |
|---|---|---|---|---|
| Achmea | 199% | *-5%* | *-11%* | 183% |
| AEGON NL* | 150% | | *-15%* | 135% |
| a.s.r. | 180% | *-5%* | *+14%* | 189% |
| Delta Lloyd | 131% | *+25%* | *-13%* | 143% |
| NN Group | 239% | *-17%* | *+19%* | 241% |
| VIVAT | 160% | *+7%* | *+8%* | 175% |

* for AEGON Netherlands, capital flows from/to AEGON Group are not known

After many years of deliberations, 2016 was the first year in which insurance companies had to report their solvency on Solvency II standard.

Although the regulations were provided a while ago, the details of all submissions and first independent reviews showed adjustments in several areas.

The main areas of attention and change related to:

- The offsetting effect of tax (LAC-DT) on required capital
- Treatment of intra-group and non-insurance operations
- Risk margins determinations
- Treatment of risk transfer solutions

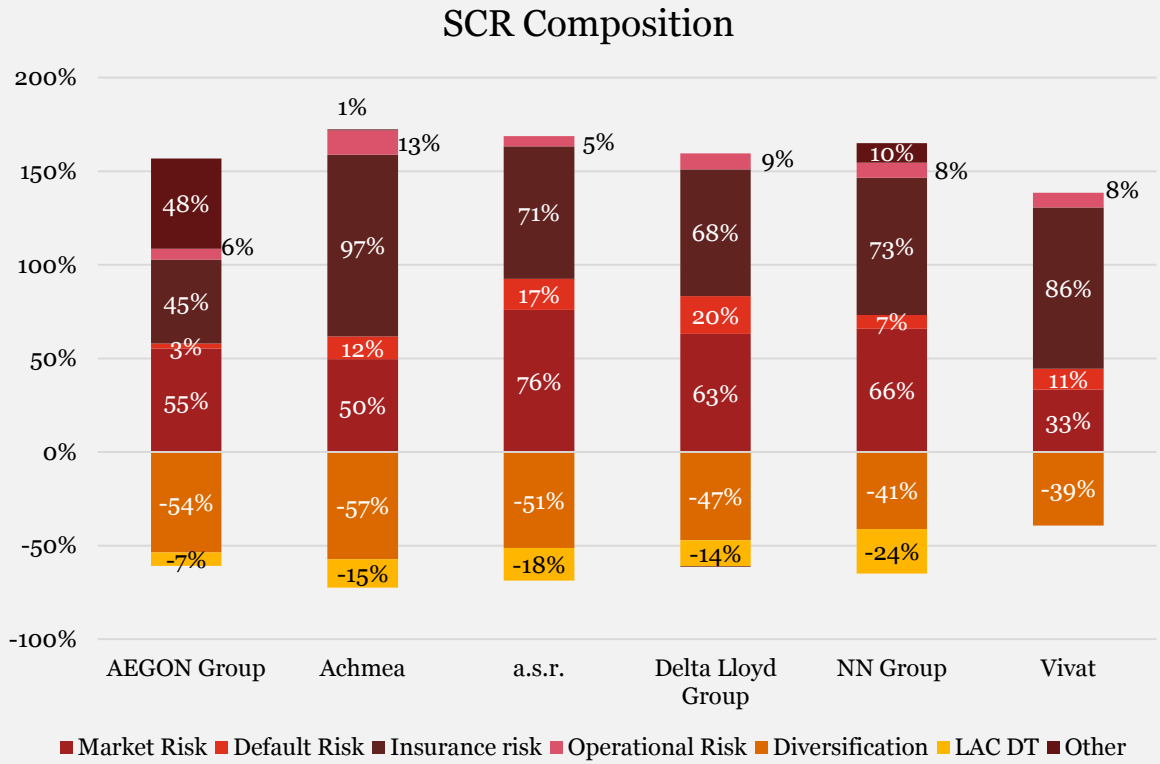
Achmea, a.s.r and NN Group where able to provide dividends to shareholders, thereby decreasing their Solvency II ratio. Delta Lloyd and VIVAT raised capital, with a positive impact on their ratios.

NN Group, AEGON NL and Achmea apply a Partial Internal Model – the other insurers apply the Standard Formula.

All figures in this presentation are based on publicly available information

# *SCR Components*

## *Insurance companies: leveraged market risk takers?*




The profile of solvency capital requirements (SCRs) of the large insurance companies show that on average insurance risk, although being the main component, is followed closely by market risks.

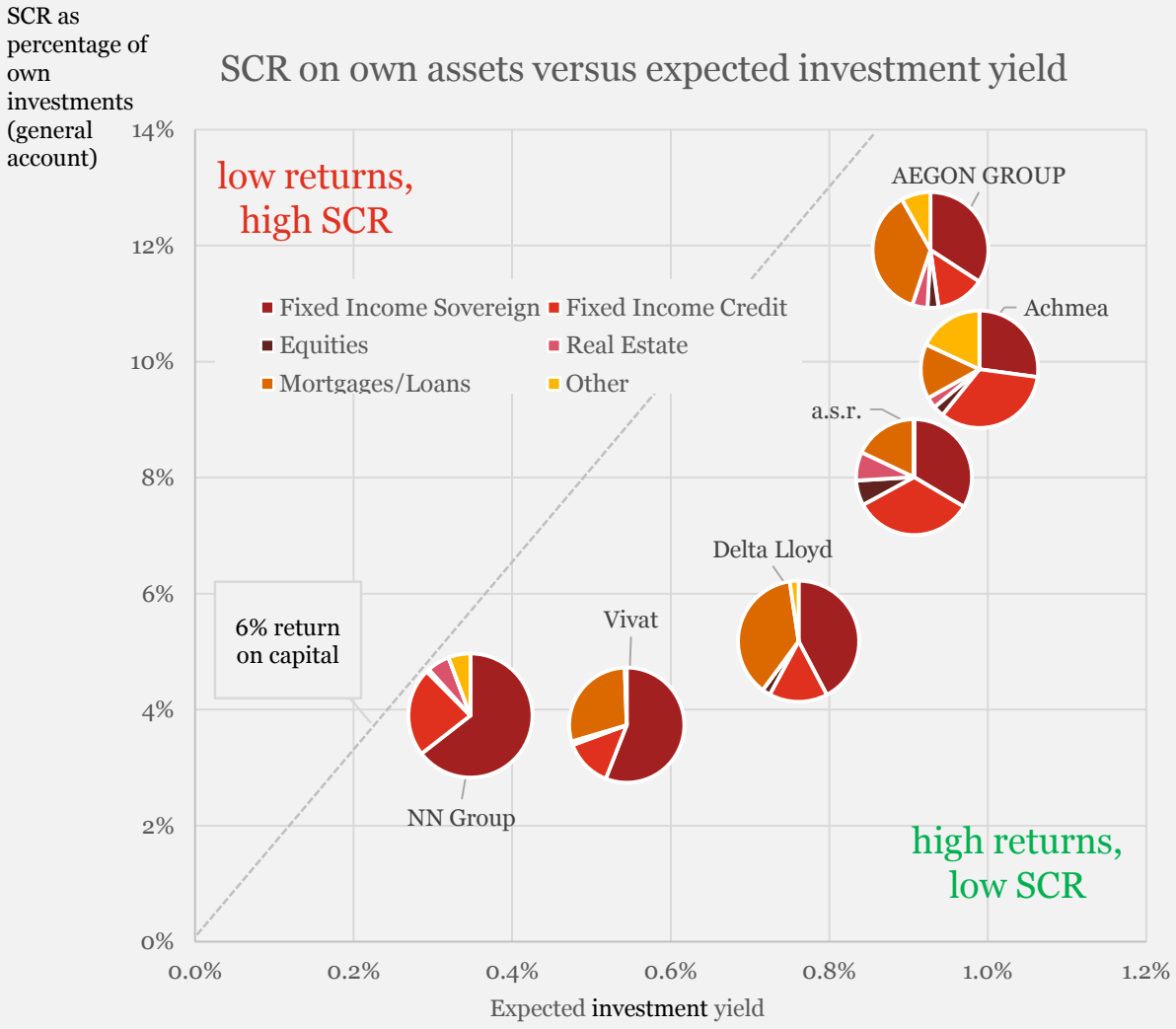
For a.s.r. and AEGON Group, the SCR for market risk is even larger than insurance risk SCR.

Zooming in on the gross components, one sees that VIVAT and Achmea (of which market risk is reported on Standard Formula) have the least market risks. a.s.r. seems to invests less conservative.

NN Group and AEGON Group report their market risks on an internal model and are therefore obliged to cover sovereign bond investments as well, of which the risk offset by changing Volatility Adjustment.

* SCR components expressed as percentage of SCR
** diversification benefit is benefit of diversification between insurance risk, market risk and default risk, not within these modules.

# *The challenge of making a sound return on capital*
## *Expected investment income versus SCR*




The SCR is quite a hurdle for insurance companies: it is roughly between 5% and 10% of their investments for general account. Under Solvency I, this would have been about 4%.

Based on the reported investment mix, an expected yield has been estimated (see yields below). This rate has been compared against the total SCR, expressed as a percentage of the investments for general account.

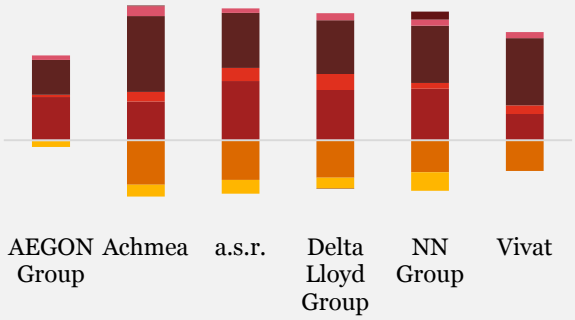
It is remarkable that the large insurance companies seem to make more than the cost of capital assumed by Solvency II (6%). Shareholders however, would expect more return on capital.

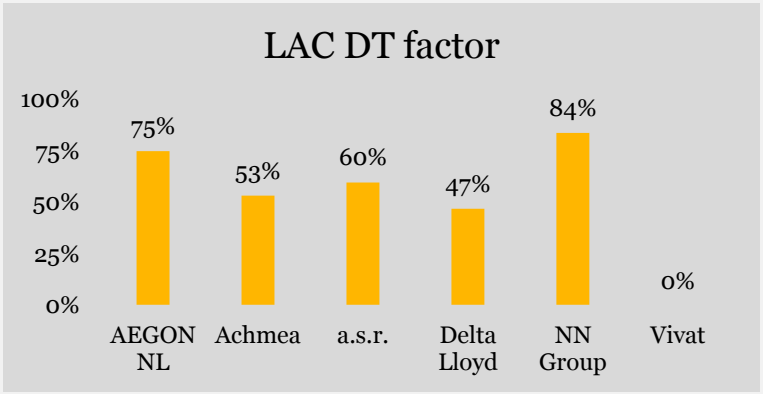
Expected yields
Fixed income sovereign: -0.1%, credit: 1%, equities: 3%, real estate: 2%, loans & mortgages: 1.5%, other (alternatives, derivatives, cash positions): 1.5%

For AEGON GROUP, an adjustment for non-EEA insurance subsidiaries on the SCR and own investments was made

# *Loss-absorbing capacity of deferred taxes*

## *A moving target with large potential offsetting impact on SCR*




LAC DT factor represents the percentage of tax recoverability (25% flat tax rate) which is used to offset the capital requirement. A full LAC DT factor of 100% represents a 25% deduction of the gross SCR (i.e. sum of basic SCR, SCR for operational risk and SCR adjustment for loss absorbing capacity of technical provisions).

LAC DT can be managed by identifying management actions that help recovering future profitability.

Guidance of DNB in February focused on:

- Ability to get to required solvency ratio after stress within reasonable time frame
- Ability to maintain expected taxable profits after a shock emerges
- Recoverability of DTA on the balance sheet

This has lead to several adjustments to the LAC DT methodologies and is still under review at several companies

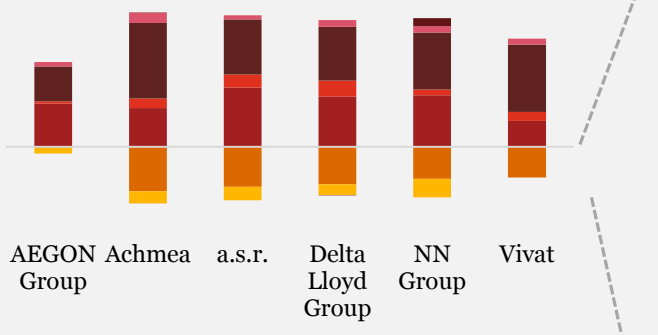
Source: Insurer's Annual Report (2016)

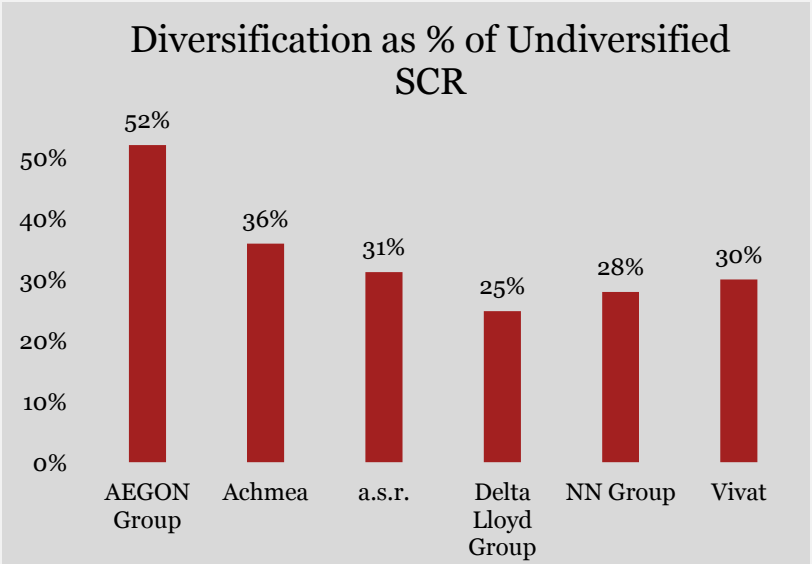
# *Diversification: measuring and managing*
## *Another offsetting element on the SCR*

Diversification effects emerge, at several levels in the Solvency II framework:

1. Diversification between market risk individual capital requirements (e.g. between credit risk and equity risk)
2. Diversification between insurance risks individual capital requirements (e.g. between lapse risk and mortality risk)
3. Diversification between combined market risk capital requirement, insurance risks capital requirements and default risk capital requirement.

This is based on the Standard formulae approach. Internal models can have more granular correlation matrices leading to an ever wider diversification benefit. As a rule of thumb, more or less 5% ratio is gained in case the double approach of the standard formulae is transferred to one large single diversification matrix.

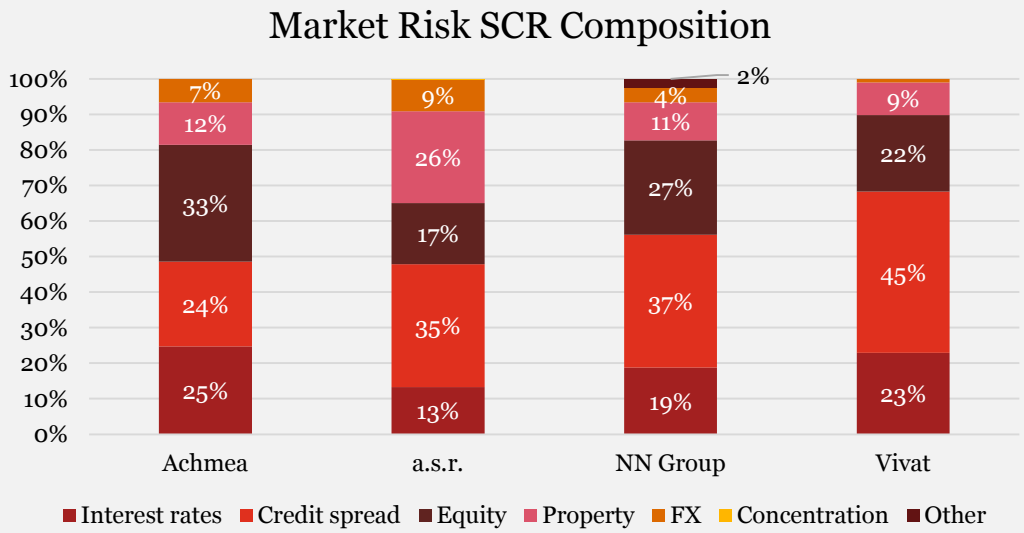


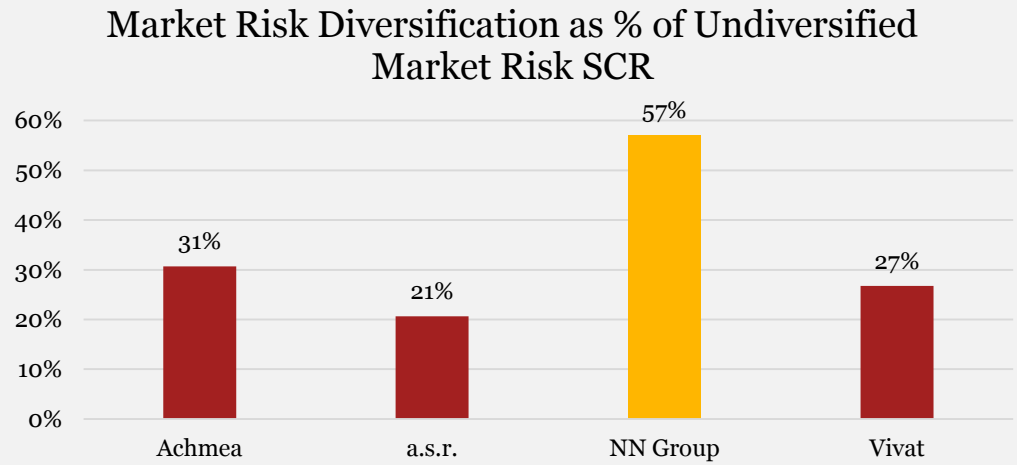




Diversification benefits range between 25-50%.

The IM model users show a larger benefit, however not always visible on the level of diversification between market and non-market risks. Next slide dives into the diversification within market risks.

# *Zooming in: diversification between market risks*



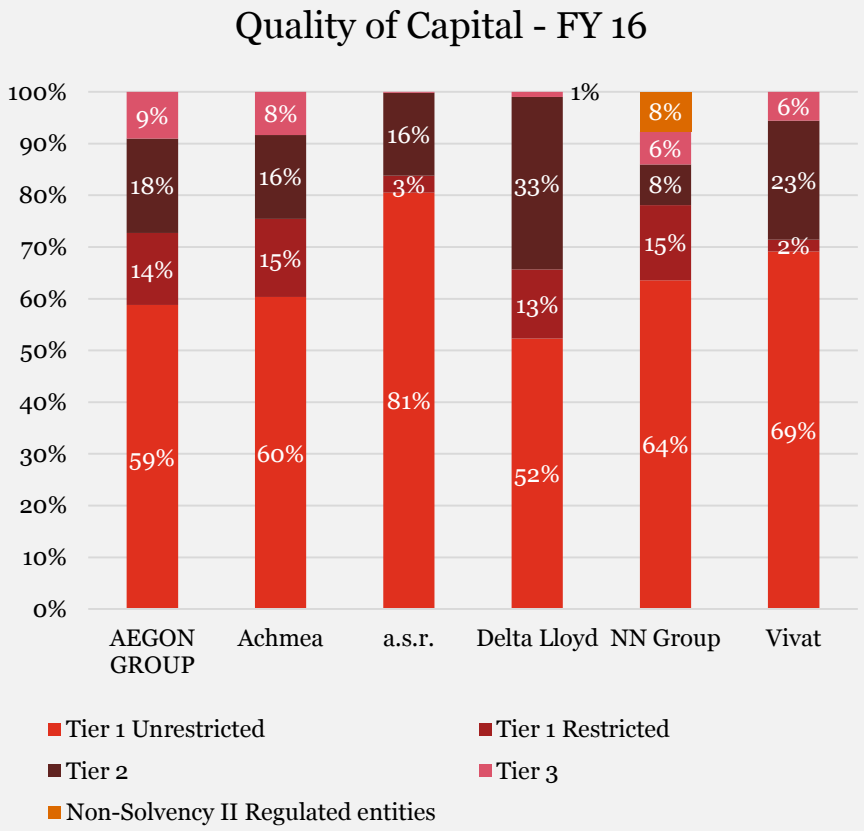




a.s.r. and NN Group published the composition of their market risk capital requirements. As these companies run on a different capital model, the comparison of individual items is not that insightful.

But one thing stands out: the diversification benefit that NN Group has within its market risk module: less than half of the market risk SCR remains after diversification between risk modules. NN Group is the only insurer of these four that has an internal model on market risk.

For a.s.r., 79% of the market risk SCR remains after diversification. As such, diversification benefits should be taken into account in asset allocation and hedge programs.

# *High quality of Solvency II capital*




The quality of the own funds in general is high in the Netherlands – insurers tend to have a large portion of Tier 1 capital. An overview is provided in the graph.

However, still some insurers reached the quantitative limits set on the eligibility of Tier 2 en Tier 3 capital. This has an effect of more than 10% points on the Solvency II ratio of VIVAT and Delta Lloyd.

| | Non-eligible capital (EUR m) | SII ratio points |
|---|---|---|
| Achmea | 122 | 3% |
| AEGON Group | 147 | 1% |
| a.s.r. | - | - |
| Delta Lloyd | 481 | 17% |
| NN Group | 84 | 2% |
| VIVAT | 259 | 11% |

# *Key differences between Internal Model and Standard Formula*

| Item | IM | SF |
|---|---|---|
| **Sovereign risk** | Based on own assessments | No charge |
| **VA changes** | Formulae based on spread movements | No changes, despite formulae |
| **Management actions** | Included if evidenced | Excluded |
| **Mortgages** | Spread and default risk, including offsetting effect of NHG | Default risk, excluding NHG guarantee |
| **Longevity stress** | Short term versus longer term uncertainty | Flat rate |
| **Diversification** | Several levels, using stress based correlations | Two-step approach |
| **Stress factors applied** | Distribution functions | Single stress parameters |

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