

Asset Liability Management at Insurance Companies

A Supervisor's Perspective

- Interpretation of the EIOPA Stress-Test from an ALM View
- Recent Study on ALM Risks at Insurance Companies
- Implications of ALM in the Current Investment Environment

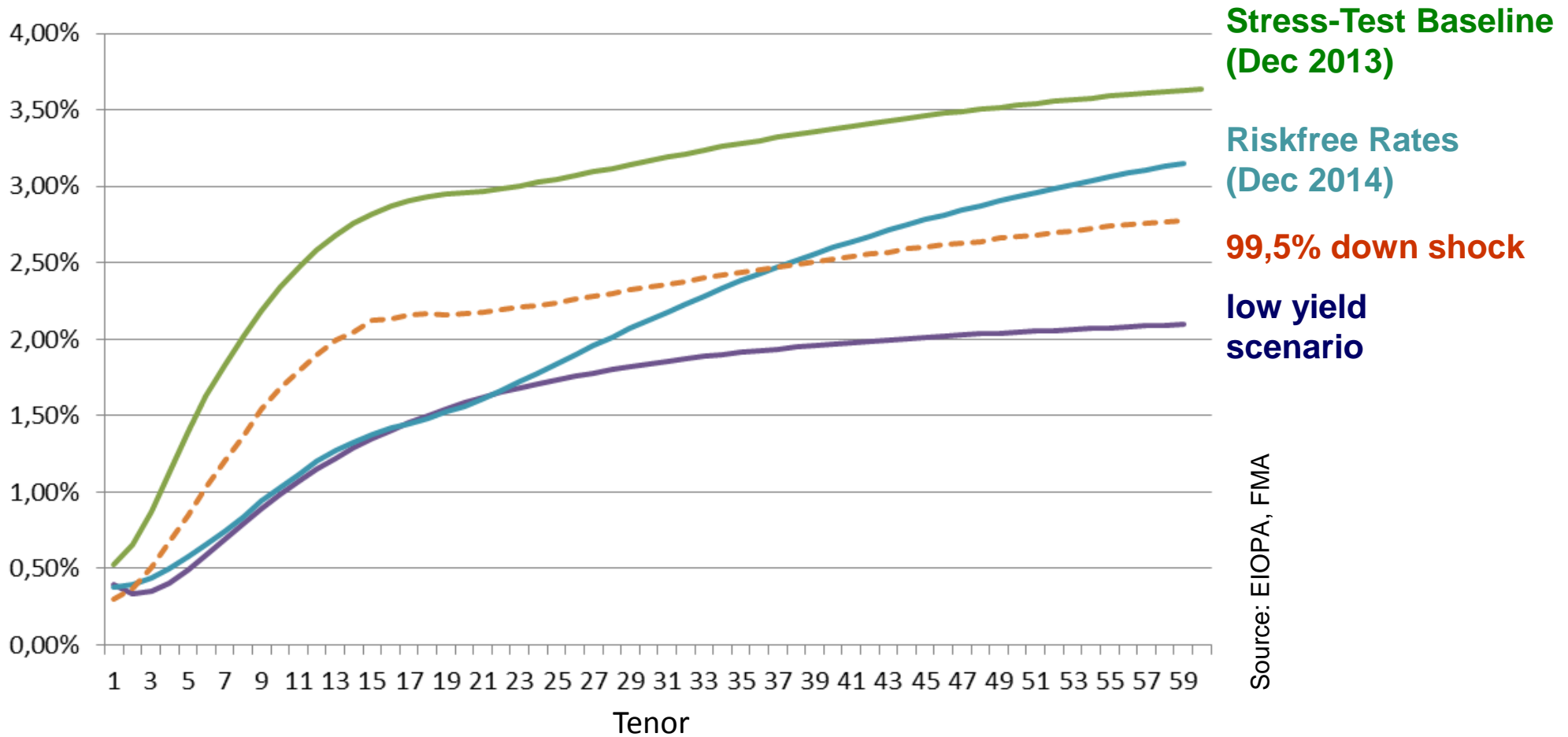
■ Set Up

- application of Solvency II (standard model)
- year end 2013 balance sheet and yield curve
- shocks on market factors
- low yield („Japanese“) scenario
- 167 participating groups + solos from all EU countries + CH, IS, NO

■ Intention

- test on the impact of Solvency II
- test on robustness of financial condition
- assess preparedness (both industry and regulator)
- calibration of final specification

Riskfree Interest Rate

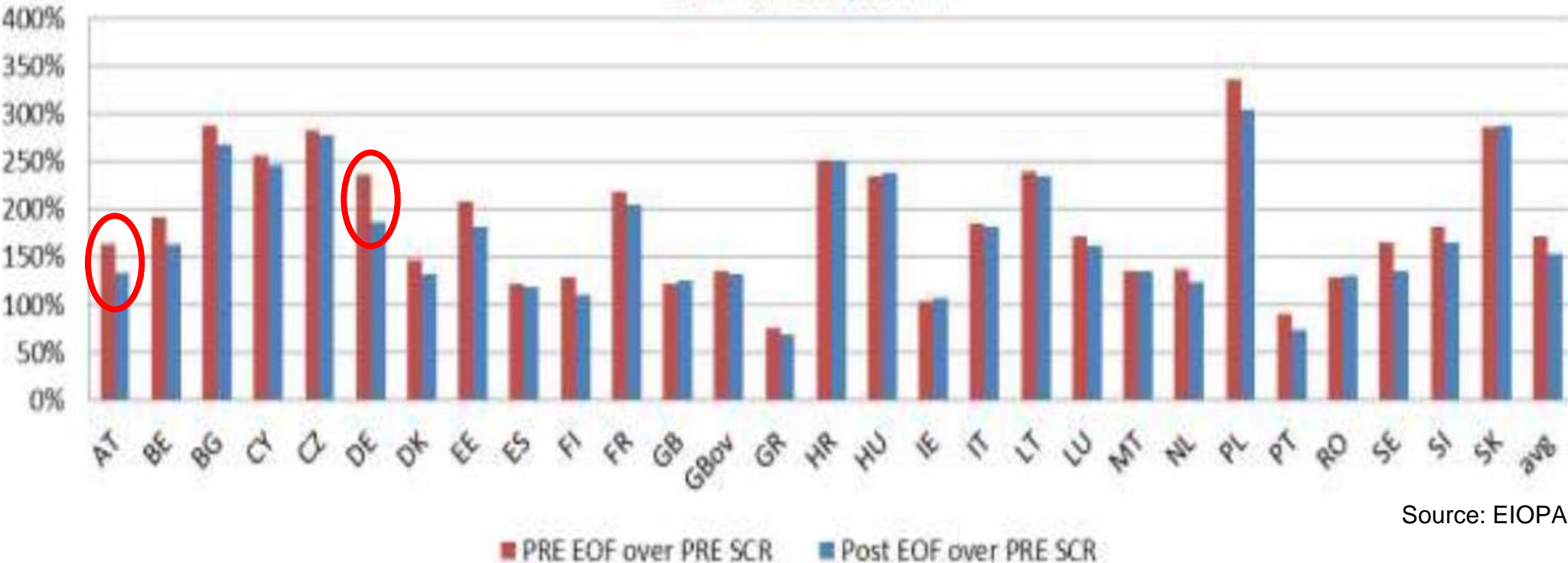


Source: EIOPA, FMA

Stress-Test Results

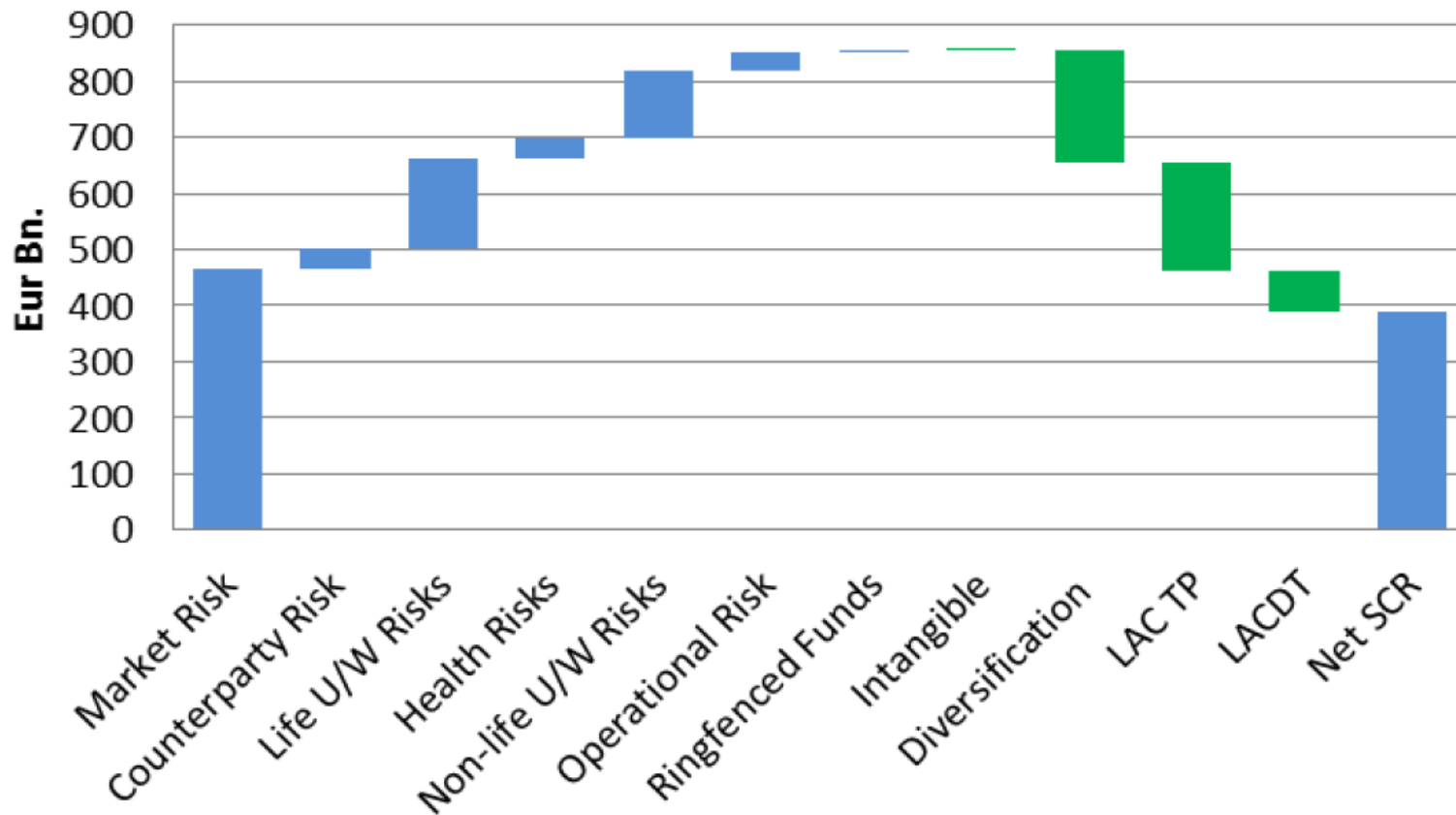
LYA: EOF pre vs post stress over pre stress SCR

- Low Yield Sample, LYA -



Source: EIOPA

Pre-stress SCR decomposed - Core Sample -



Source: EIOPA

Duration Mismatch

- (Modified) Duration D is used to measure the relative sensitivity of value V on the change of interest rate i :

$$\Delta V/V \approx -D * \Delta i$$

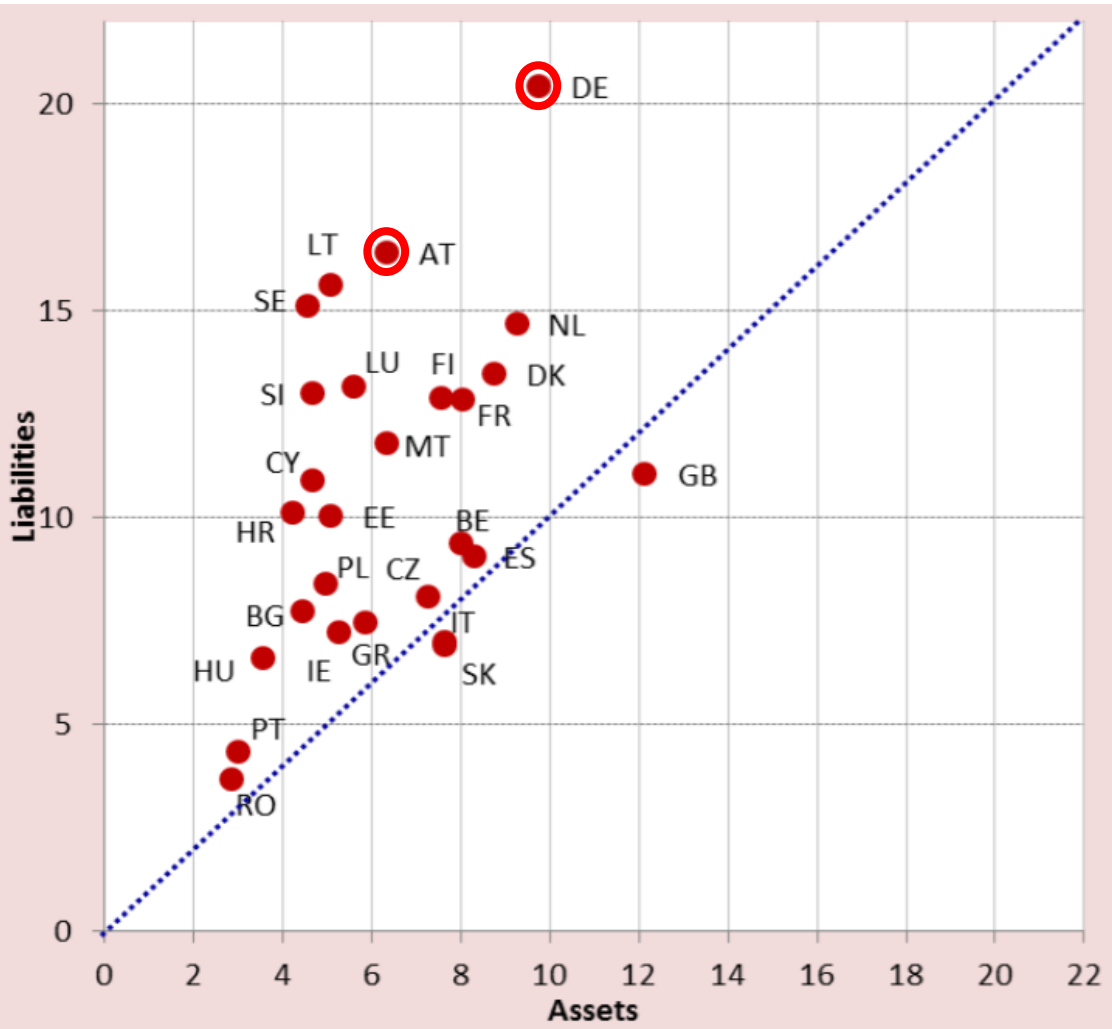
- German life + health insurers reported an average duration of less than 10 (years) for their assets (DA) vs. more than 20 for their liabilities (DL).

- The reported duration mismatch ($MM = DA - DL$) for Austrian insurers was -10.

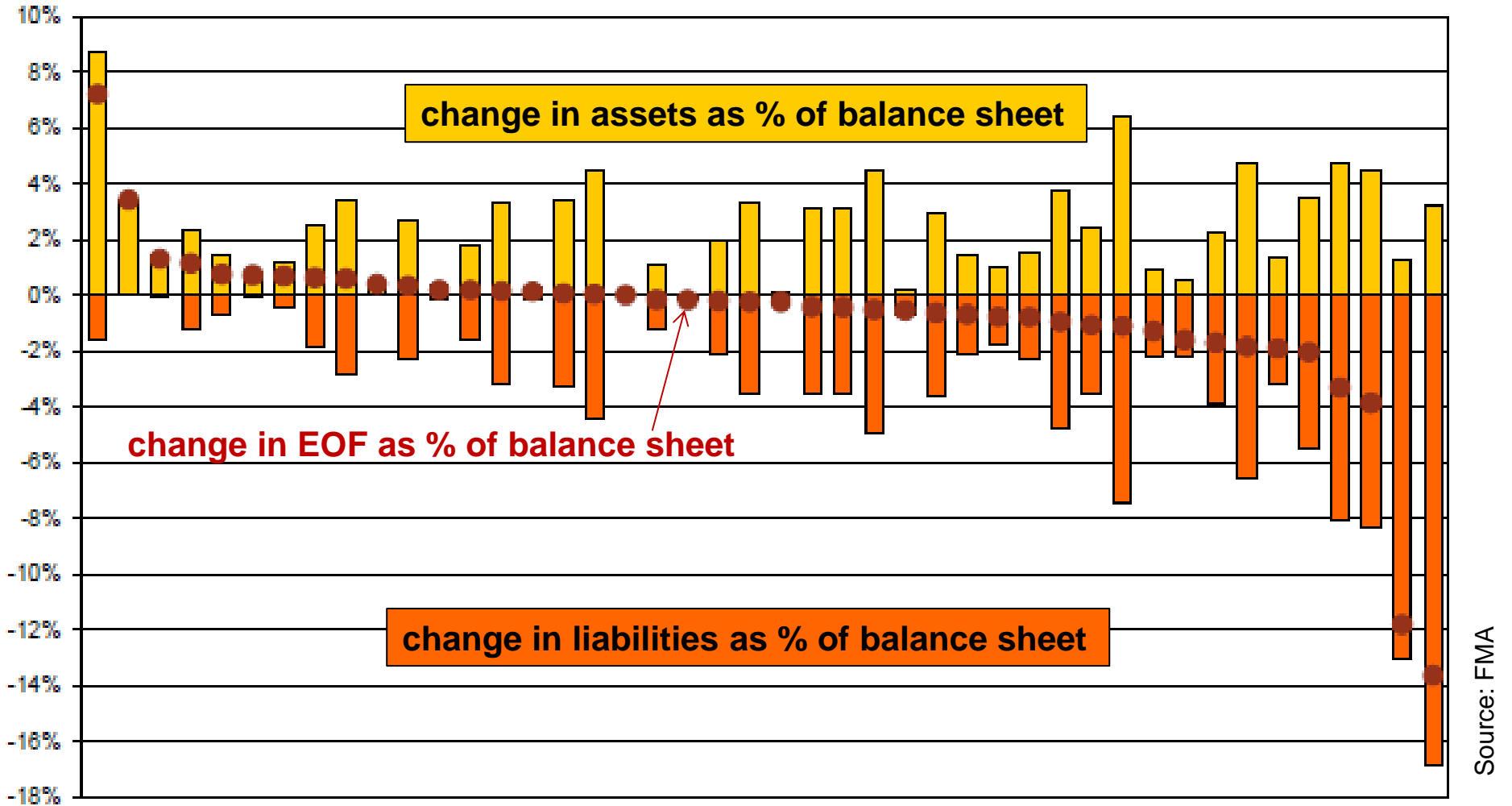
- DE , the „duration“ of equity (eligible own funds $EOF \approx A - L$) can be approximated by the duration mismatch $MM = DL - DA$ and the leverage $Lev = A / EOF$ as follows:

$$DE = DL + Lev * MM$$

Source: FMA



interest down shock sensitivity



Source: FMA

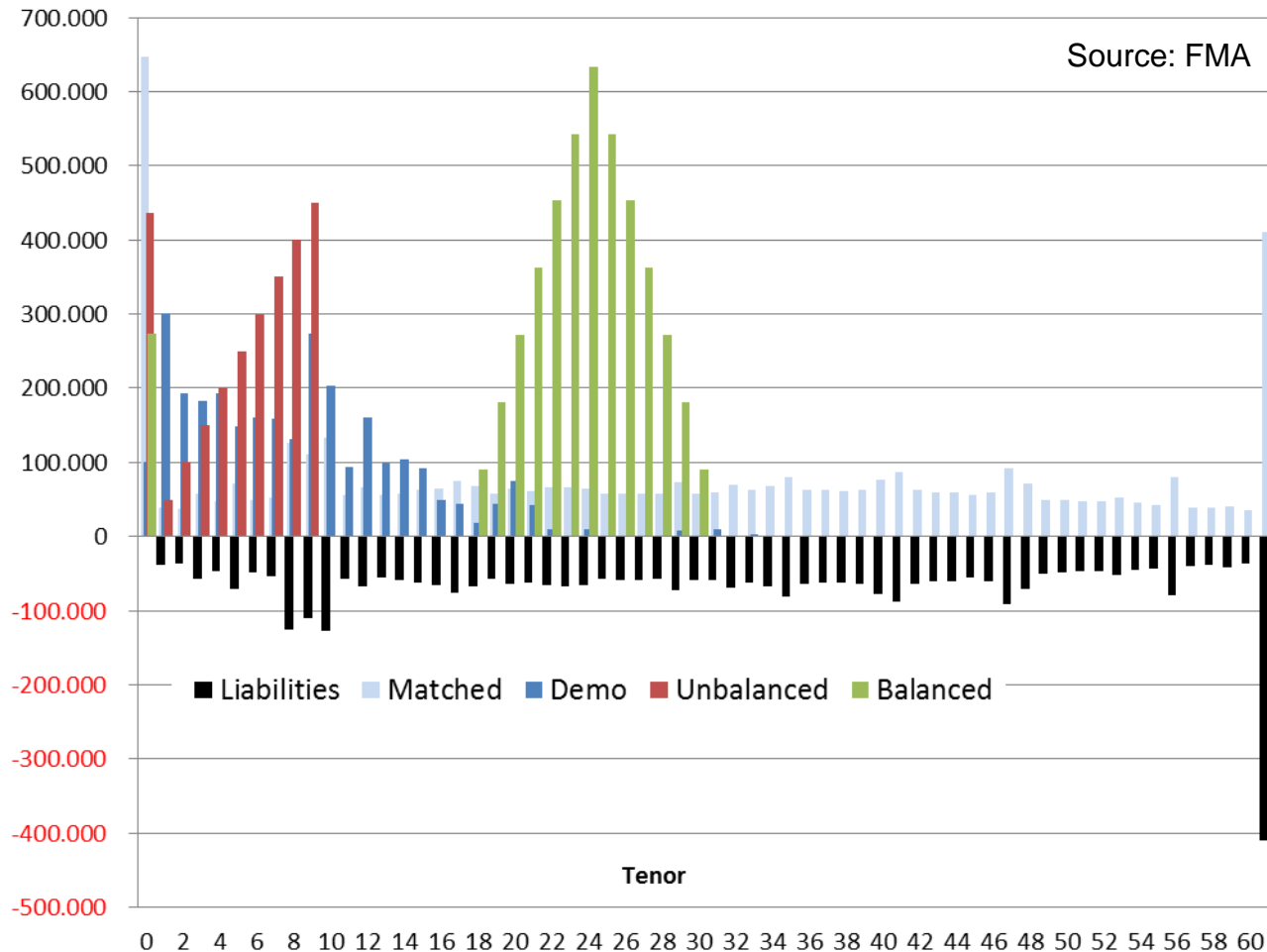
■ Recent Study on ALM-effects for Insurance Companies

- stress-test cashflow profile for Austrian market (“demo”)
- additional “artificial” portfolios (unbalanced, balanced, matched)
- equity impact of Solvency II standard shock (1 in 200 years, 99,5% confidence)
- estimated change in equity over rolling 1 year period since 1996

■ Intention

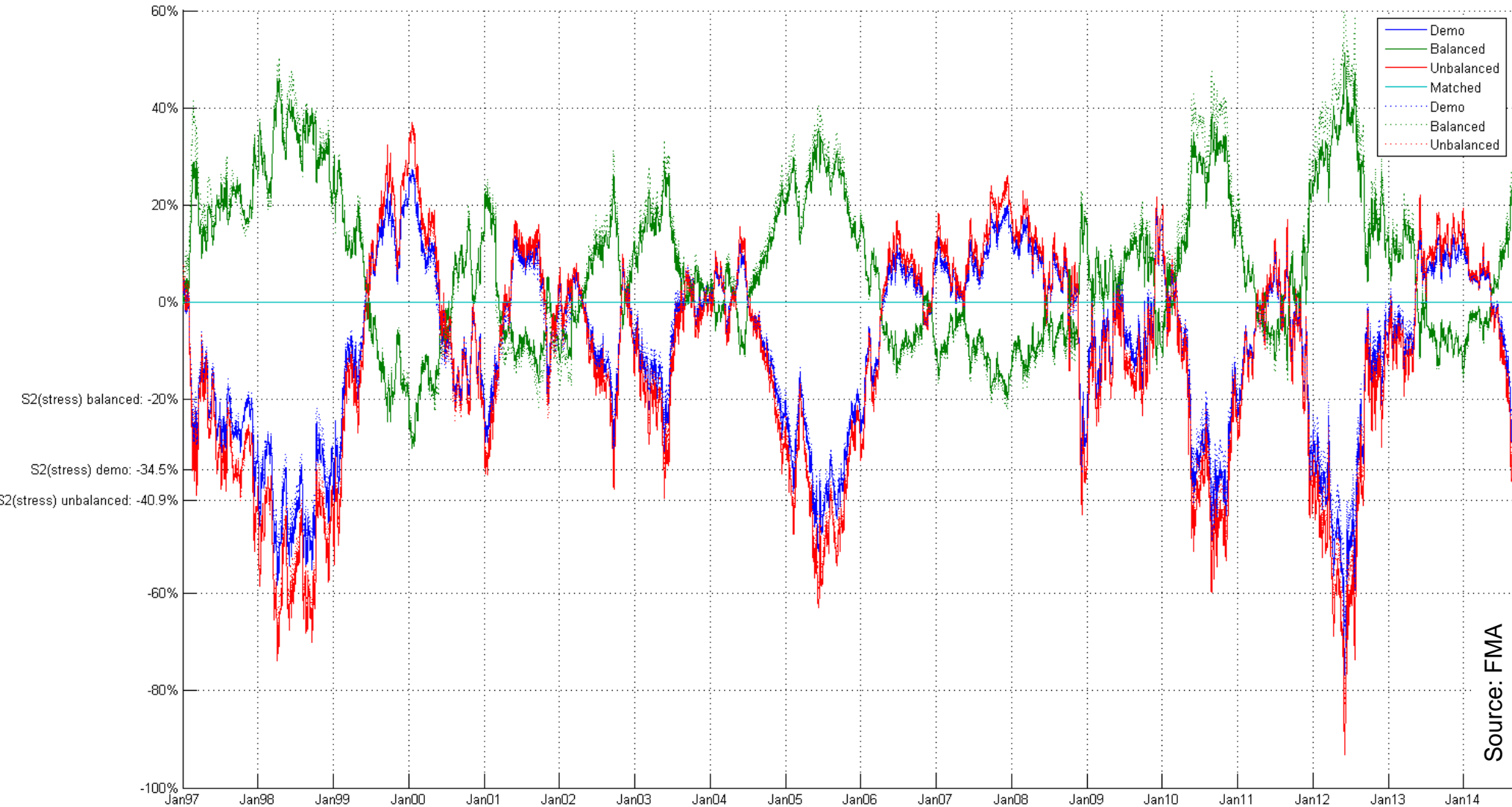
- validation and applicability of standard method (parallel shift)
- effect of non-parallel, real world shocks
- effect of non-balanced cashflow profiles
- benchmark for own risk assessments (ORSA) of insurers

Cashflow Profiles



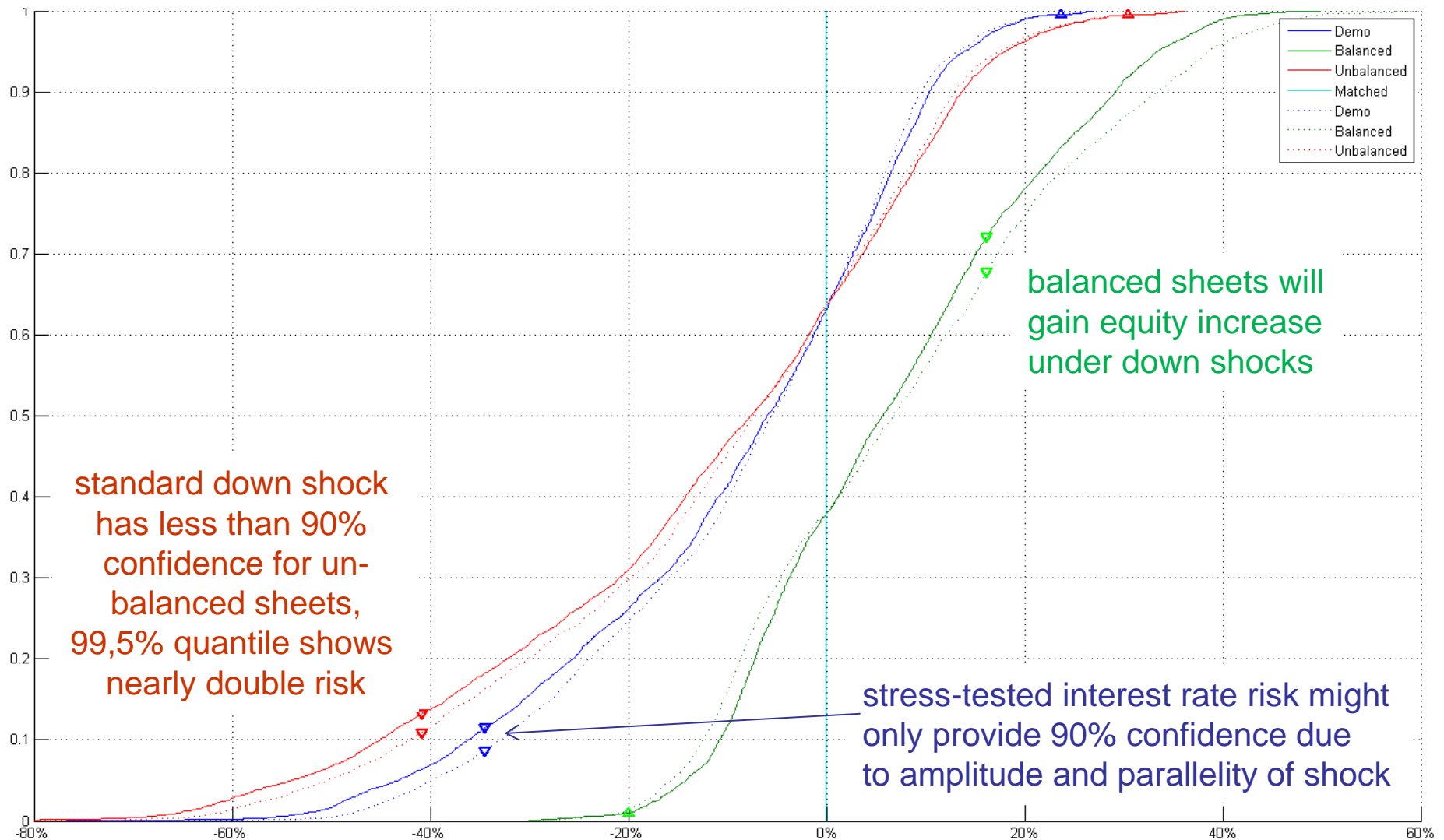
- Liabilities shows the aggregate (unweight) cashflows reported in the EIOPA stress-test.
- “Demo” was chosen as the reported aggregate (unweight) asset cashflow profile.
- “Unbalanced” refers to a possible asset allocation profile under a low yield environment.
- “Balanced” shows a profile with matched duration of assets and liabilities, exposed to twists.
- “Matched” has identical A+L cashflows in every year except for equity at $t=0$.

rolling 1-year %-change in equity

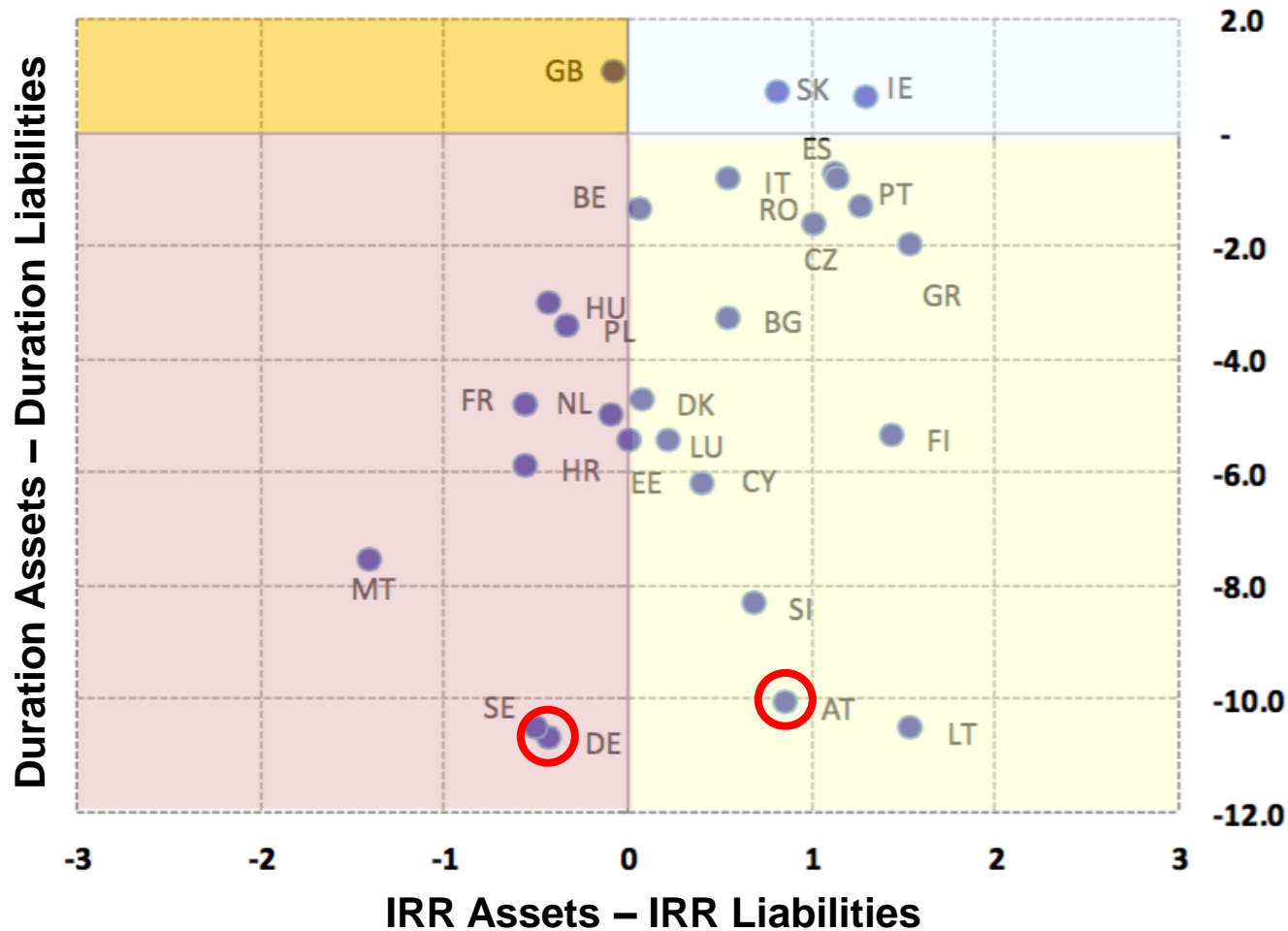


Source: FMA

distribution of 1-year equity-change

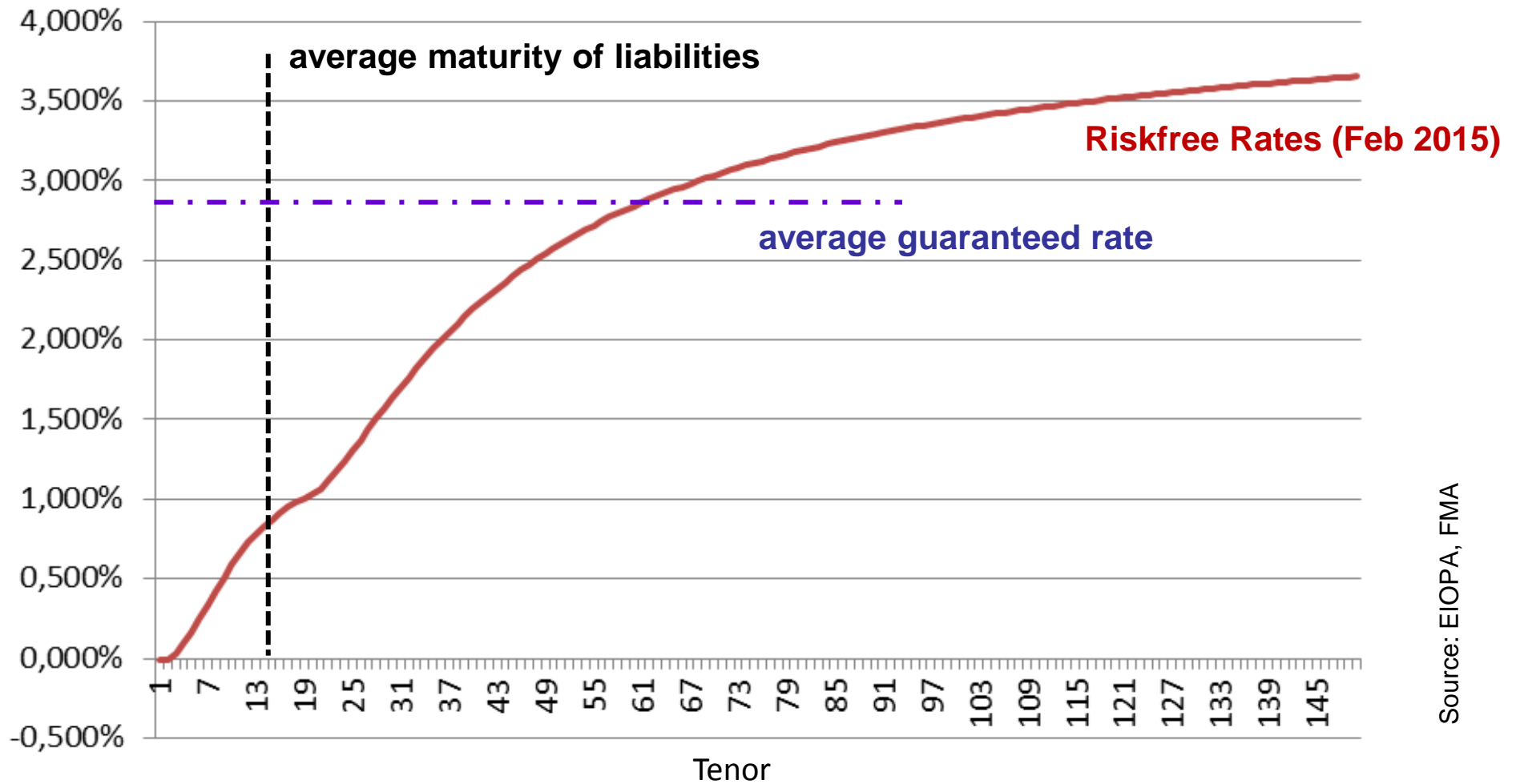


implications of ALM in a low yield world



Source: EIOPA

implications of ALM in a low yield world



Source: EIOPA, FMA