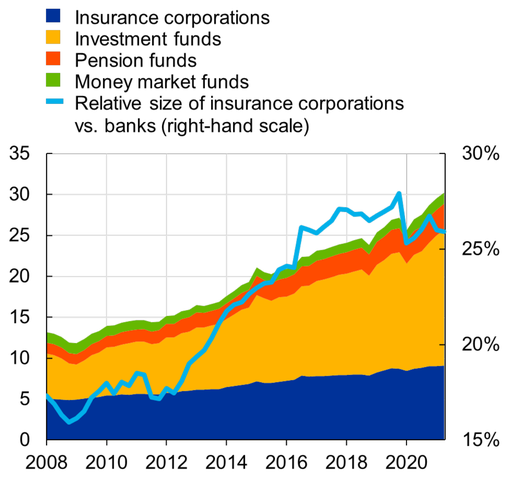
Insurance Corporations' Balance Sheets, Financial Stability and Monetary Policy

Christoph Kaufmann (ECB), Jaime Leyva (Banco de Portugal), Manuela Storz (ECB)

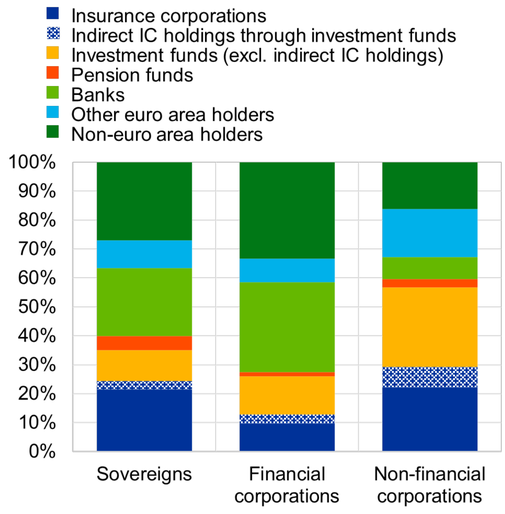
Motivation

- ▷ The euro area insurance sector almost doubled in size between 2008-2021, from 5 to 9 tn EUR; equivalent to 25% of the banking sector.
- ▷ Insurance corporations (ICs) are large investors in capital markets, providing financing for sovereigns and the real economy.

Size of euro area financial sector



Investor base of euro area bond markets



Notes: Left: Areas show the balance sheet size of non-bank financial institutions in EUR trillion. The line shows the size of insurance corporations relative to the banking sector in % (right-hand scale). Right: In % of total amounts outstanding as of 2021 Q4, excluding holdings of the Eurosystem.

➠ Given their business model, monetary policy (MP) is a key element for insurers, but systematic empirical evidence is scarce.

Research Questions

- ▷ How does monetary policy affect the size and composition of insurance corporations' balance sheets?
- ▷ What are the financial stability implications of those changes?

➠ We study the dynamic responses of insurers' balance sheet items and risk-taking metrics to MP shocks.

Data & Methodology

Data

- ▷ Country-sector panel data for ICs' balance sheet items and securities holdings in all 19 euro area countries between 2008 and 2021 (ECB ICB and SHSS data).
- ▷ Term structure factor from high-frequency MP shocks to capture surprise changes over the whole yield curve (Altavilla et al., 2019; Jarociński & Karadi, 2020).

Possible channels

What are potential mechanisms behind changes in insurers' balance sheet size and composition after a monetary policy loosening?

- ▷ Real channels affecting sector size via demand for insurance products:
  Higher GDP and household disposable income (demand ↑)
  vs. substitution between savings and consumption (demand ↓)
- ▷ Financial channels affecting change in sector risk-taking:
  More search for yield to cover guaranteed policies (risk ↑)
  vs. valuation gains from duration gap (risk ↓)

Methodology

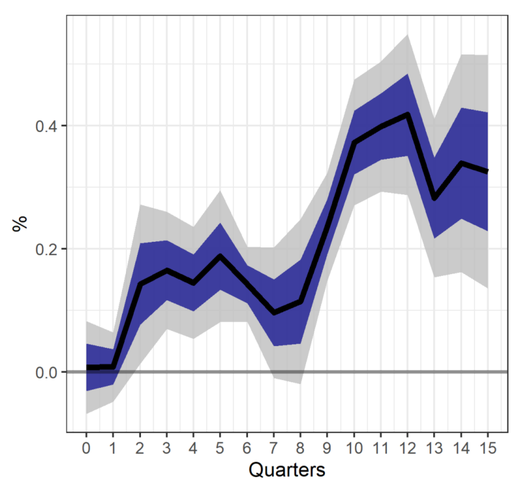
Local projections (Jordà, 2005) to compute impulse response functions:

$$y_{i,t+h} = \alpha_i^h + \theta^h MP_t + \sum_{l=1}^{L} \beta_l^h y_{i,t-l} + \sum_{l=1}^{L} \gamma_l^h \text{Controls}_{i,t-l} + \varepsilon_{i,t+h}$$

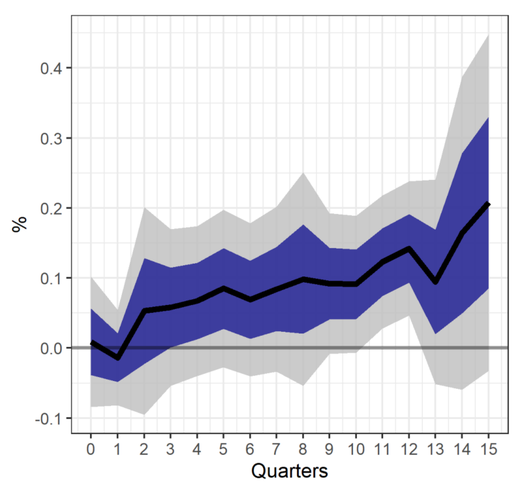
Impact on Sector Size

- ▷ MP loosening leads to an expansion of insurance balance sheets.

Change in total assets at market value



Change in total assets at nominal value



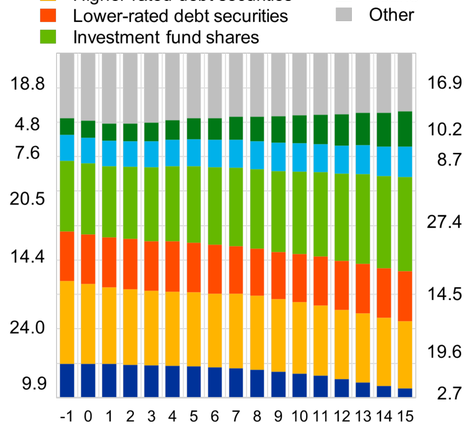
Notes: Impulse responses to an expansionary high-frequency monetary policy shock inducing a 1 basis point decrease of the term structure factor. Shaded areas denote 95% (grey) and 68% (blue) confidence intervals. Nominal values are holding amounts after removing valuation effects.

- ▷ Growth in total assets is due to both positive valuation effects and an increase in nominal asset holdings.
- ▷ A 10bps MP loosening shock increases ICs' financial intermediation capacity by 200 bn EUR (ca. 1.6% of EA GDP) after one year.

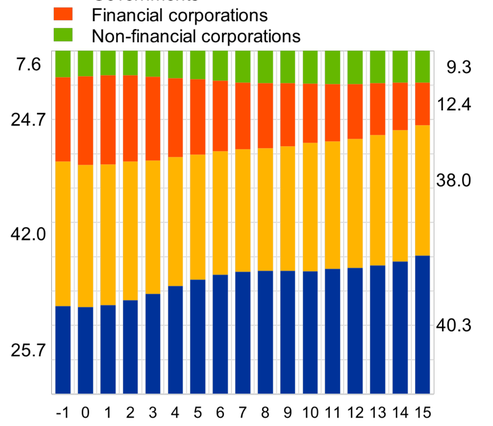
Impact on Risk-Taking

- ▷ After a MP loosening shock ICs increase risk-taking in their investment portfolio (search for yield).

Response of main balance sheet items



Response of sectoral bond portfolio allocation



Notes: The charts are a graphical representation of the projected evolution of insurance corporations' balance sheet composition in % of total assets, following an expansionary high-frequency monetary policy shock inducing a 10 basis point decrease of the term structure factor. The x-axis shows quarters after the shock. The bar denoted "-1" represents the sample average for each item.

- ▷ Our results show different dimensions of risk-taking:
  Liquidity risk: Decline in cash holdings and other liquid assets
  Credit risk: Shifts towards equities and lower-rated bonds
  Duration risk: Increase in share of long-maturity sovereign bonds

Conclusions

- ▷ MP has a macroeconomic relevant effect on insurers' balance sheets
- ▷ After a MP loosening shock we find:
  - A pro-cyclical rise in ICs' financial intermediation capacity
  - Portfolio re-balancing consistent with the MP risk-taking channel
- ▷ The prolonged period of low yields contributed to a build-up of financial stability risks
  - Increase in ICs' vulnerability to economic downturns (rises in credit risk) and liquidity shocks (policy lapses, margin calls)
  - Rising interest rates may pose risks, but also contribute to a reversal in risk-taking

CONTACT

manuela.storz@ecb.europa.eu

REFERENCES

[1] Altavilla, C., L. Brugnolini, R. S. Gürkaynak, R. Motto, and G. Ragusa (2019). Measuring Euro Area Monetary Policy. *Journal of Monetary Economics 108*, 162– 179.

[2] Jarociński, M. and P. Karadi (2020). Deconstructing Monetary Policy Surprises—The Role of Information Shocks. *American Economic Journal: Macroeconomics 12(2)*, 1– 43.

[3] Jordà, O. (2005). Estimation and Inference of Impulse Responses by Local Projections. *American Economic Review 95(1)*, 161– 182.

READ THE FULL PAPER HERE ⇒