



Unconventional Monetary Policy in the Euro Area: a tale of three shocks.

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Motivation

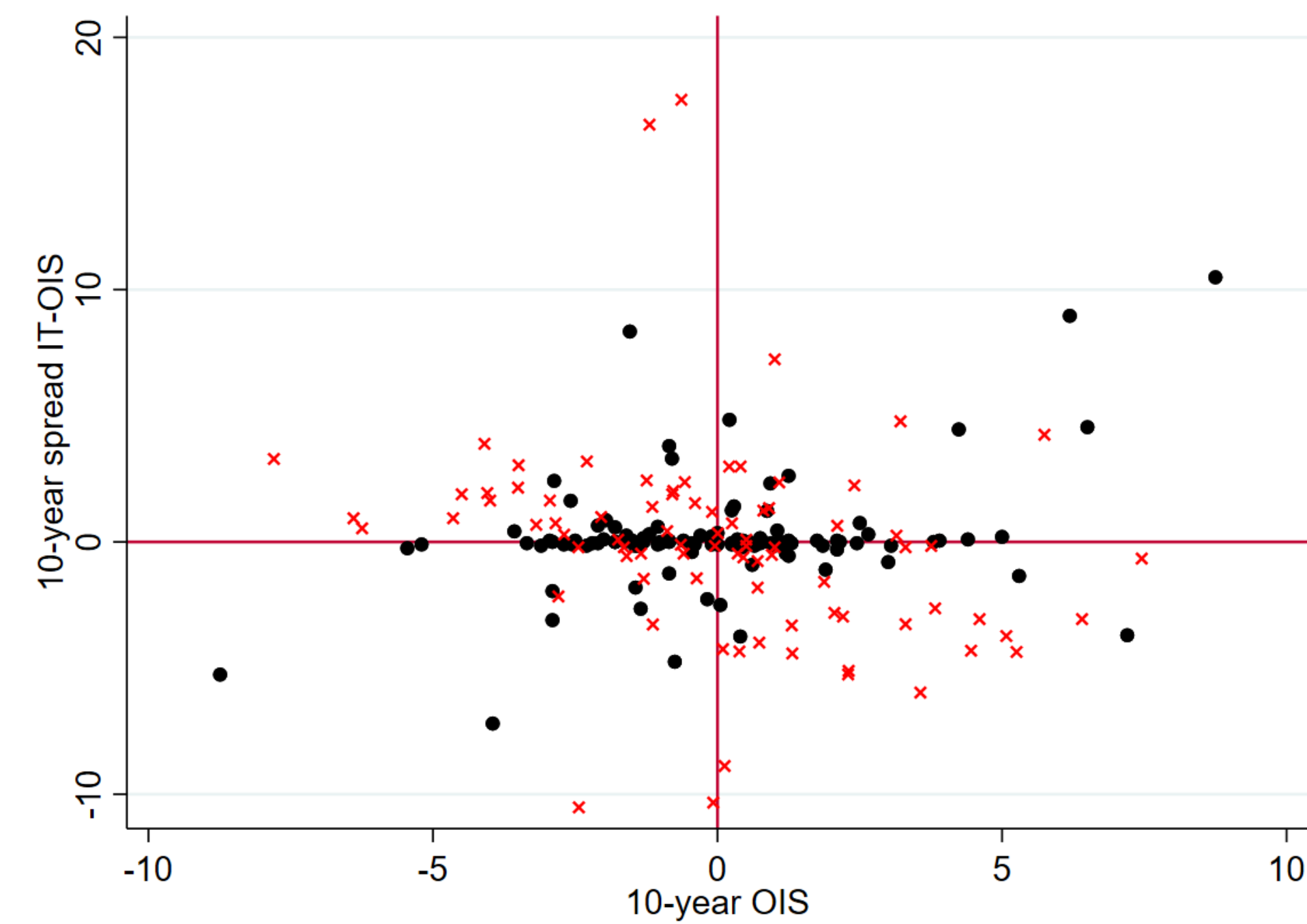


Fig. 1: variations (in bp) of 10y OIS rate and IT risk premium around ECB press conferences. (Source: Altavilla et al. (2019))

- Negative correlation during the crisis
- Positive correlation during QE period

Issue for identification of monetary shocks from OIS variations.

This paper: 3-shocks description of HF (high-frequency) movements.

Novel shock: ECB communication and announcements affect markets' expectations of credit/redemption risk of peripheral countries.

Empirical strategy

2-steps identification:

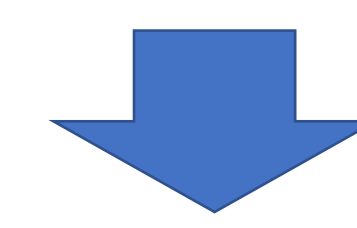
1. Set identification of factors from HF data, using sign + other restrictions, model selection through Median Target method
2. Estimated factors used as external instruments in daily proxy-SVAR and monthly LP-IV

References for the poster: Altavilla, C., Brugnolini, L., Gürakaynak, R.S., Motto, R., and Ragusa, G., (2019). Measuring Euro Area Monetary Policy. *Journal of Monetary Economics* 108 (2019): 162-179.
 Angelini, G., and Fanelli, L., (2019). Exogenous uncertainty and the identification of Structural Vector Autoregressions with External Instruments. *Journal of Applied Econometrics*.

3-shocks description

- **Monetary shock:** ECB targets the long term OIS rate, affecting also peripheral risk premium.
 \uparrow OIS \uparrow IT-OIS \downarrow STOCK
- **Spread shock:** ECB directly influences peripheral risk premium, affecting overall Eurozone economy.
 \downarrow OIS \uparrow IT-OIS \downarrow STOCK
- **Information shock:** ECB releases information about future state of the economy.
 \downarrow OIS \uparrow IT-OIS \downarrow STOCK

SIGN RESTRICTIONS for 3-factors identification



- **HF DATA:** variations around press conferences (Altavilla et al., 2019) of OIS rates (3 months, 1,2,5,10 years), spread IT-OIS (2,5,10 years), STOXX50

Can we solve the issue accounting for the information shock?

- 2-factor analysis using only OIS and STOXX50 variations shows the negative correlation between OIS and IT-OIS variations is not explained

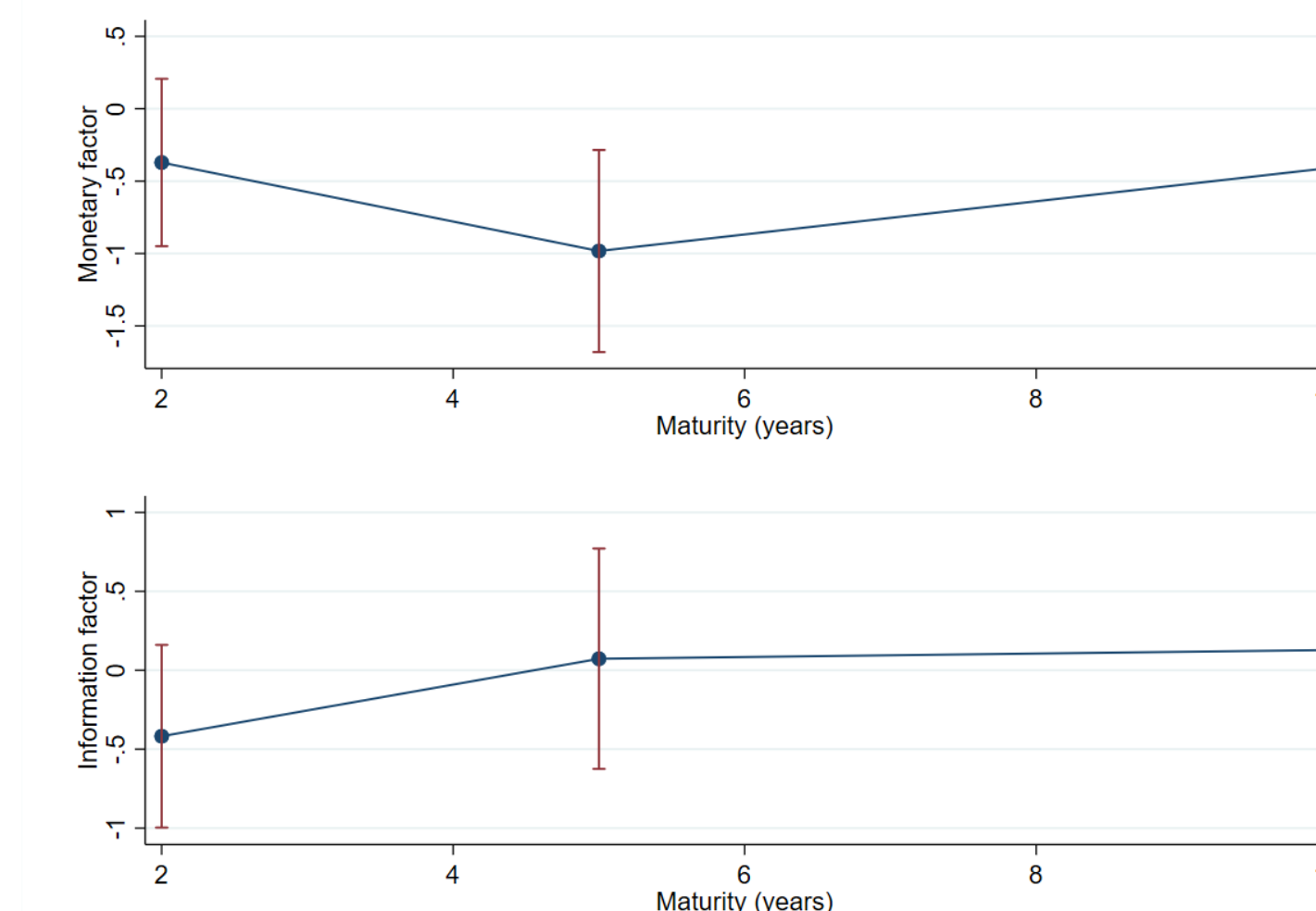


Fig. 2: loadings of 2-factors on IT-OIS

Spread vs info shocks: similar mechanics but very different meaning in terms of policies! To disentangle them in the 3-factors analysis:

- "Narrative variance restriction" $\sigma_{F_{spread,10-14}}^2 \gg \sigma_{F_{spread,no\ crisis}}^2$
- Magnitude of responses restriction $\frac{d IT-OIS}{d F_{spread}} > \frac{d IT-OIS}{d F_{info}}$

Results, factor decomposition

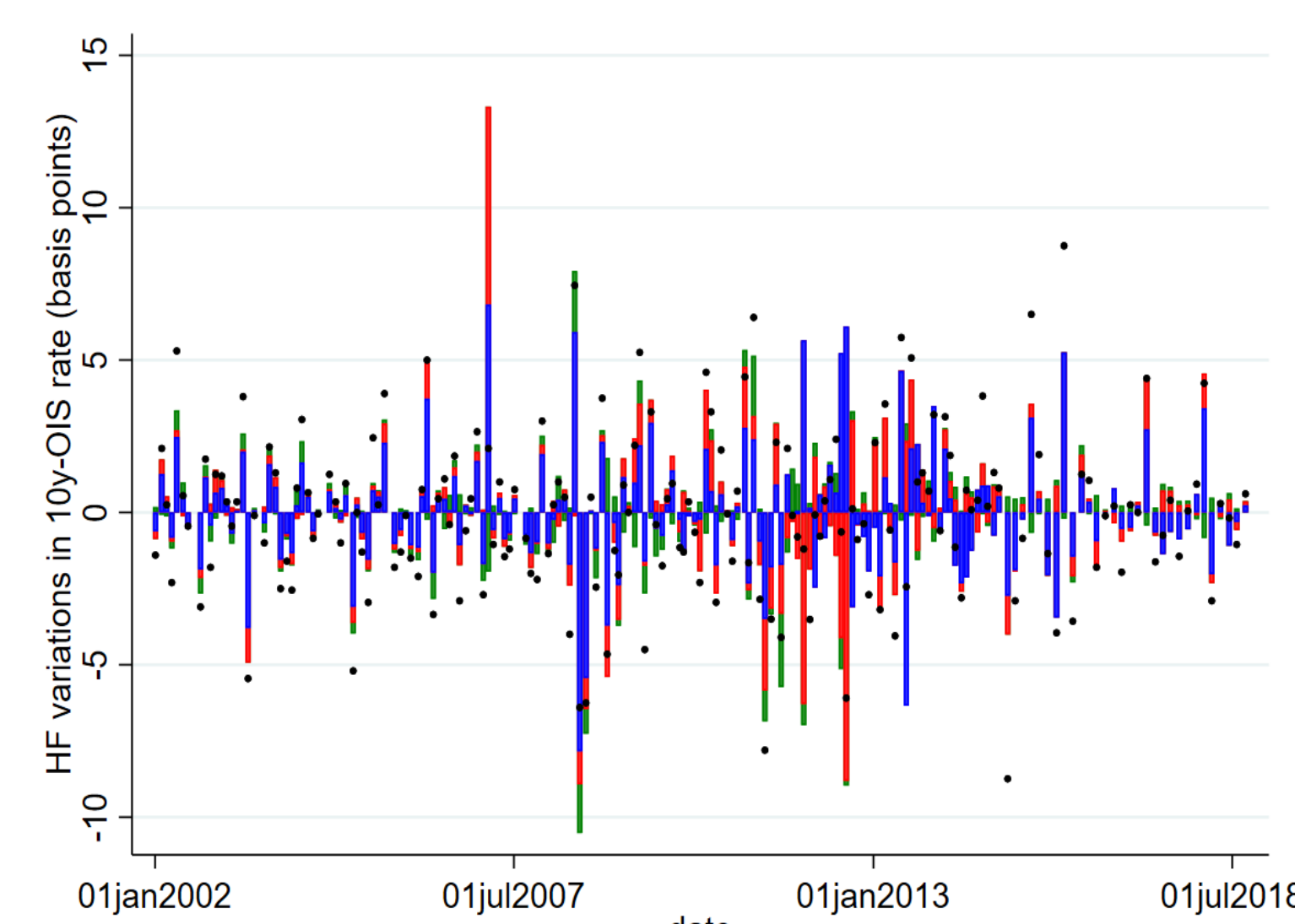


Fig. 3: 3-factors decomposition of HF variations in 10y OIS rate.

- **Monetary factor:** 67.9%
- **Spread factor:** 27.4%
- **Info factor:** 4.7%
- **Total R²:** 78%

Results, daily proxy-SVAR

- Simultaneous identification of the 3 shocks using the AC-SVAR method (Angelini and Fanelli, 2019)
- Endogenous variables: 5y AAA rate, 10y IT-OIS, STOXX50, 2y ILS rate, EUR-USD exchange rate

$$\Pi(L) \begin{bmatrix} r_t \\ x_t \\ f_t \end{bmatrix} = \mu + \begin{bmatrix} c_{rr} & c_{rx} & 0 \\ c_{xr} & c_{xx} & 0 \\ \phi & \mathbf{0} & \sigma_\omega \end{bmatrix} \begin{bmatrix} \epsilon_{r,t} \\ \epsilon_{x,t} \\ \omega_t \end{bmatrix}$$

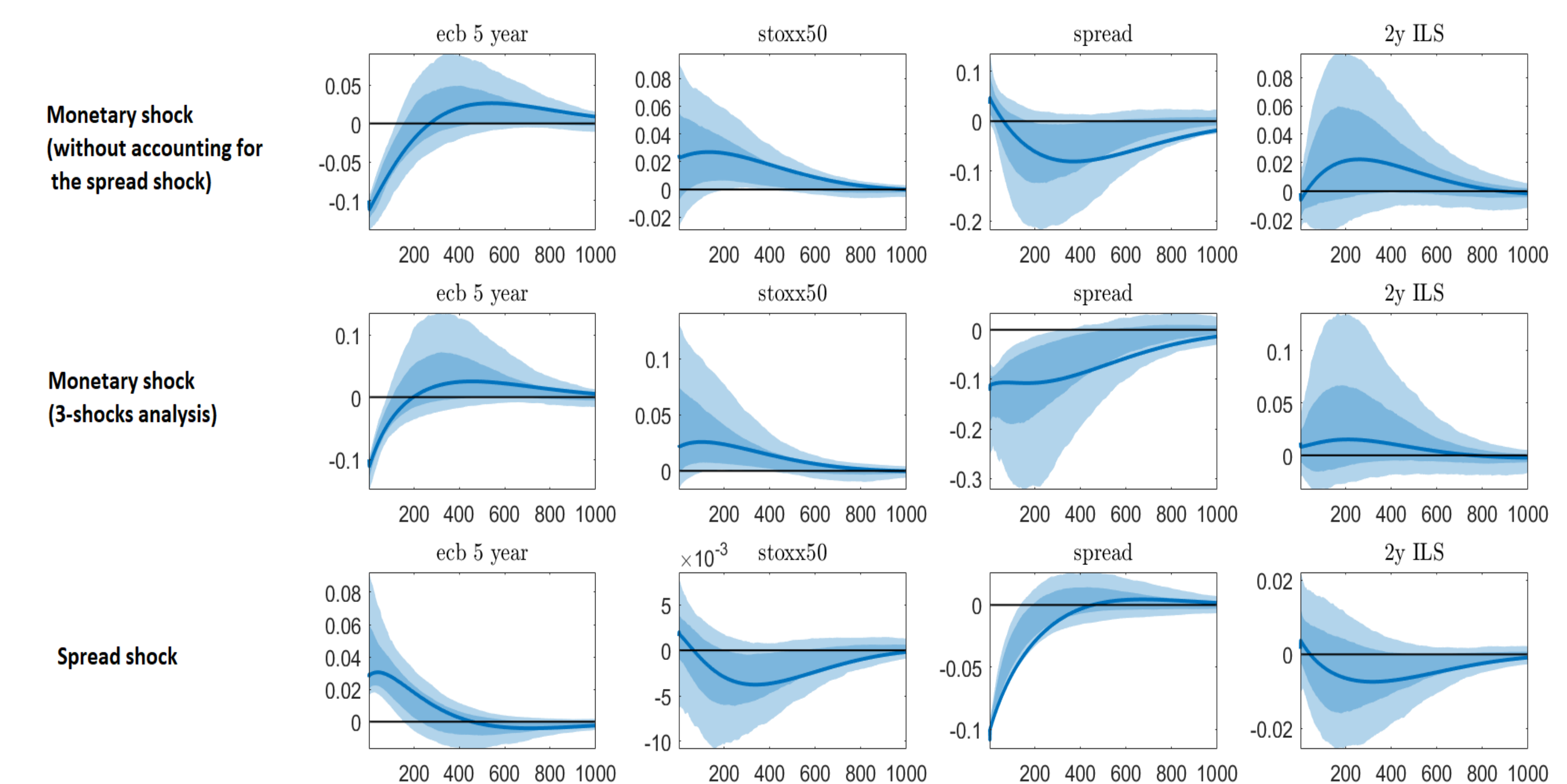


Fig. 4: impulse response functions from daily proxy-SVAR

- The information shock instead has no significant effect!

Results, monthly LP-IV

- To avoid issues from aggregation of daily series to monthly frequency, we run LP-IV on monthly data (one shock-one instrument at a time)

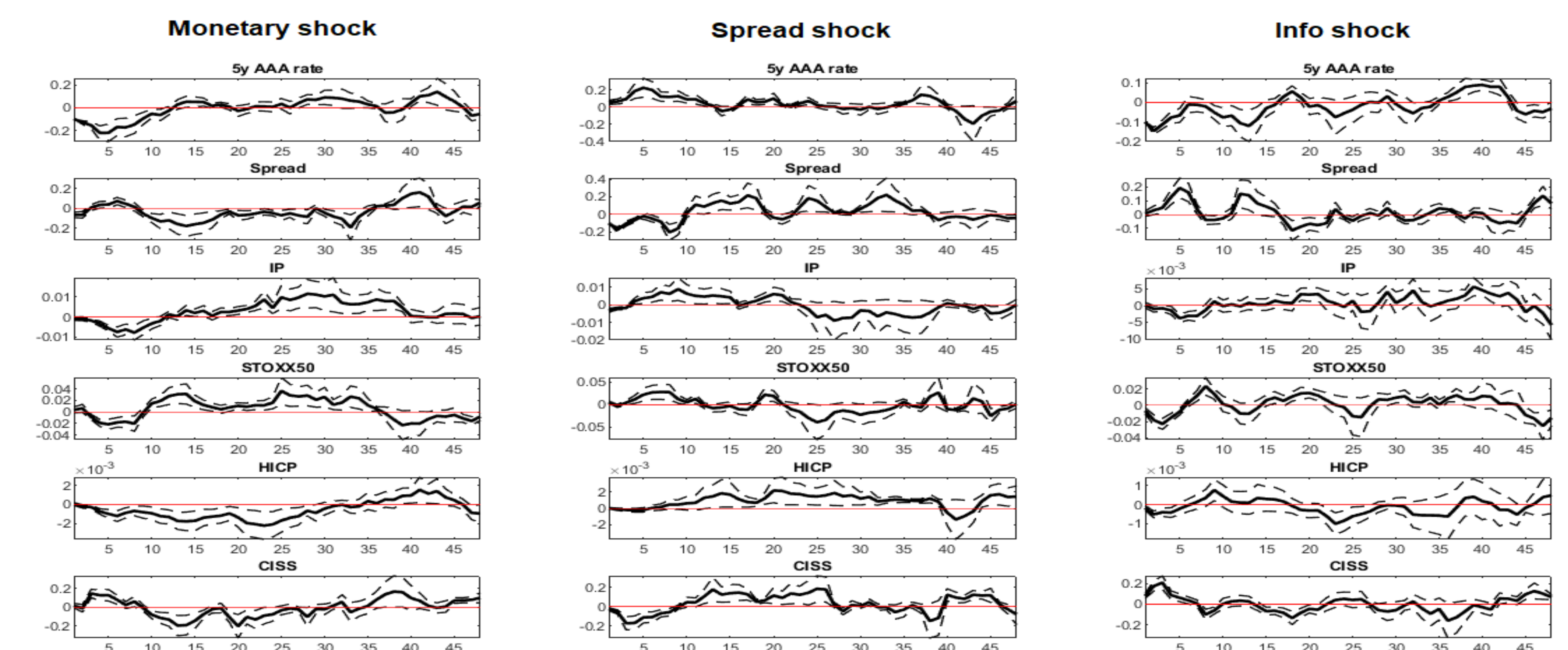


Fig. 5: impulse response functions from monthly LP-IV

- The identified spread shock is particularly inflationary!