

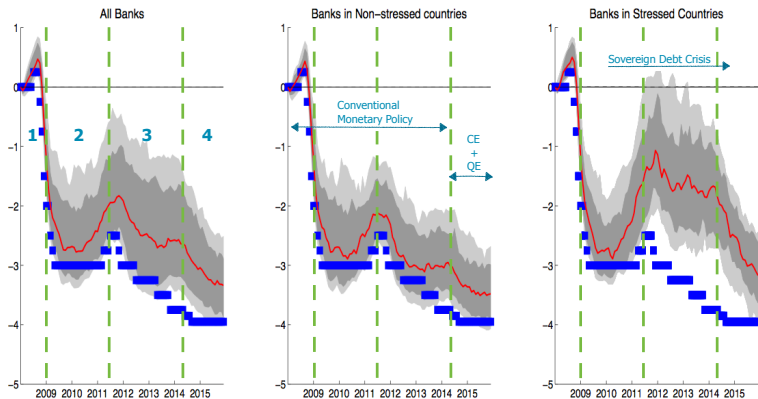
COMMENT: MENDING THE BROKEN LINK:  
HETEROGENEOUS BANK LENDING AND  
MONETARY POLICY PASS-THROUGH

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# PHASES OF LENDING RATES ADJUSTMENT



[Source: Altavilla, Canova, Ciccarelli (2016)]

- ▷ **Conventional Monetary Policy: 2007 - 2014**
  - i. Bank-level VARs → distribution of IRFs of lending rates to a monetary policy shock
  - ii. Distribution of impact and long run pass-through ( $PT_{ij}$ ) for each bank  $i$  in country  $j$
  - iii. Unconditional sorting of  $PT_{ij}$  wrt predetermined ( $t = 2007$ ) bank characteristics
  
- ▷ **Unconventional Monetary Policy: 2014 - 2015**
  - i. Generalized IRFs to CE and QE
  - ii. Event study + narrative approach → UMP-consistent path of EONIA and 10Y Sovereign Bond Yield
  - iii. Bank-level VARs → conditional and unconditional forecasts

- i. Tackles an old question in a new, richer framework
  - ▷ No obvious consensus in the existing literature
  - ▷ Dynamic interaction between policy and lending rates
  - ▷ Comprehensive cross-country evaluation
  - ▷ Relevance of banks characteristics in explaining the cross-sectional heterogeneity of  $PT$
  
- ii. Impressive data work and new datasets (not for general use):
  - ▷ IMIR: individual lending and deposit rates at different maturities and loan sizes
  - ▷ IBSI: individual balance sheet characteristics e.g. capitalization, exposure to sovereign debt, ...
  - ▷ Individual bank-level bonds, regulatory capital ratios, non-performing loans

- i. **Identification #1:** Implicit ECB reaction function in each bank-VAR

what's in the ECB information set?

- ▷ Potentially confounds with systematic reaction of policy to omitted factors affecting both policy and lending rates
- ▷ Competition/market share motives also hidden

- ii. **Identification #2:** Trade-off between delayed market reactions and information in asset prices moves

- iii. Is pass-through enough? Transmission to real economy

## BANK-SPECIFIC VAR<sub>i</sub>

▷ variables:

$$\begin{pmatrix} z_t \\ \hline x_{jt} \\ \hline y_{ijt} \end{pmatrix} \equiv \begin{pmatrix} \text{EONIA}_t \\ \hline \text{gov't bond yield}_{jt} \\ \mathbb{E}[\text{NFC default}]_{jt} \\ \hline \text{unemployment rate}_{jt} \\ \hline \text{lending rate}_{ijt} \\ \text{deposit rate}_{ijt} \\ \text{bank bond yield}_{ijt} \end{pmatrix}$$

▷ identification:

$$\begin{pmatrix} \mathbb{I} & 0 & 0 \\ -C_j & \mathbb{I} & 0 \\ -B_{ij} & -A_{ij} & \mathbb{I} \end{pmatrix} \begin{pmatrix} z_t \\ x_{jt} \\ y_{ijt} \end{pmatrix} = D(L) \begin{pmatrix} z_t \\ x_{jt} \\ y_{ijt} \end{pmatrix} + \begin{pmatrix} v_t \\ e_{jt} \\ u_{ijt} \end{pmatrix}$$

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likely to be masking endogenous reactions of policy to economic conditions *also* resulting in lending/deposit rates changes

## EQUIVALENT (BUT MUCH CRUDER) VAR<sub>j</sub>

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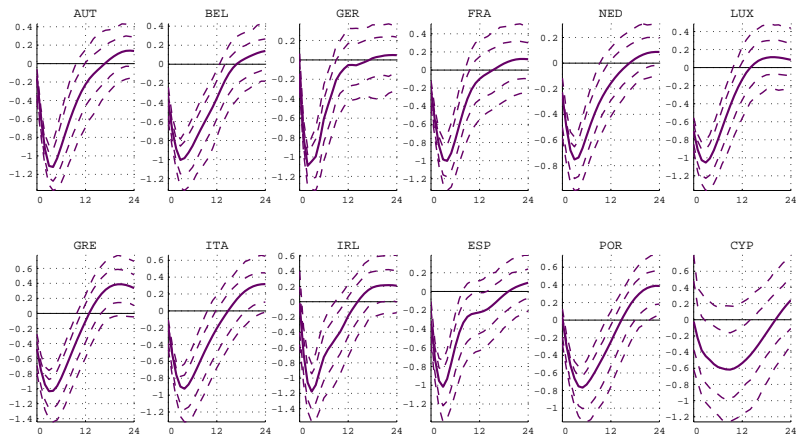
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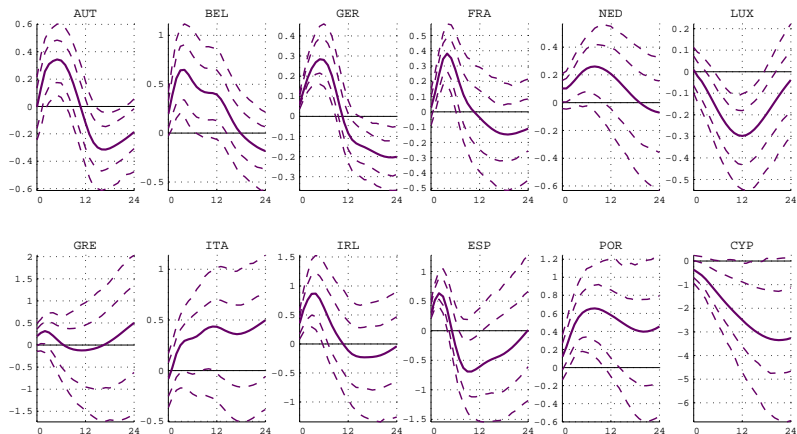
## RESPONSES OF LENDING RATES $\forall j$

▷ 100bp decrease in EONIA rate



## RESPONSES OF UNEMPLOYMENT RATES $\forall j$

▷ 100bp decrease in EONIA rate



## RICH(ER) INFORMATION VAR<sub>j</sub>

▷ variables:

$$\underbrace{\begin{pmatrix} z_t \\ \dots \\ x_{jt} \\ \dots \\ z_t \\ \dots \\ x_{jt} \end{pmatrix}}_{S_t} \equiv \begin{pmatrix} \text{HICP All Items}_t \\ \text{PMI manufacturing}_t \\ \text{consumer confidence}_t \\ \dots \\ \text{unemployment rate}_{jt} \\ \text{loans to NFC}_{jt} \\ \dots \\ \text{EONIA}_t \\ \text{Eurostoxx 50}_t \\ \dots \\ \text{lending rate}_{jt} \\ \text{deposit rate}_{jt} \\ \text{gov't bond yield}_{jt} \end{pmatrix}$$

▷ alternative (one of many):

EA aggregates and country-level variables in deviation

▷ identification:

$$S_t = \phi(L)S_t + \nu_t; \quad \nu_t = \psi_0 \epsilon_t; \quad \psi_0 = \text{chol}(\nu_t \nu_t')$$

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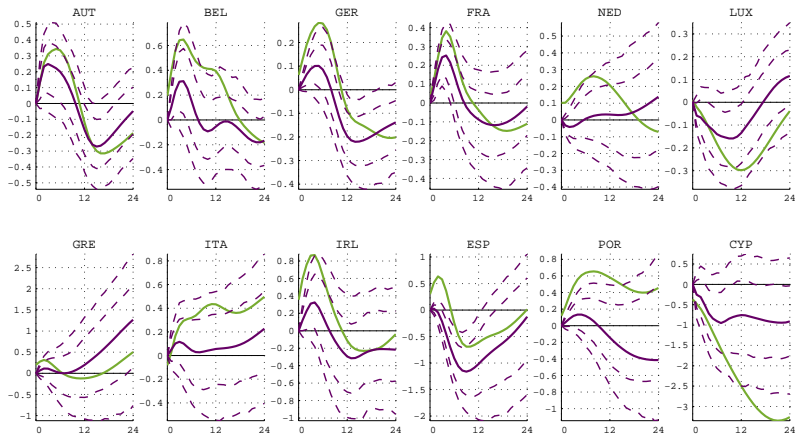
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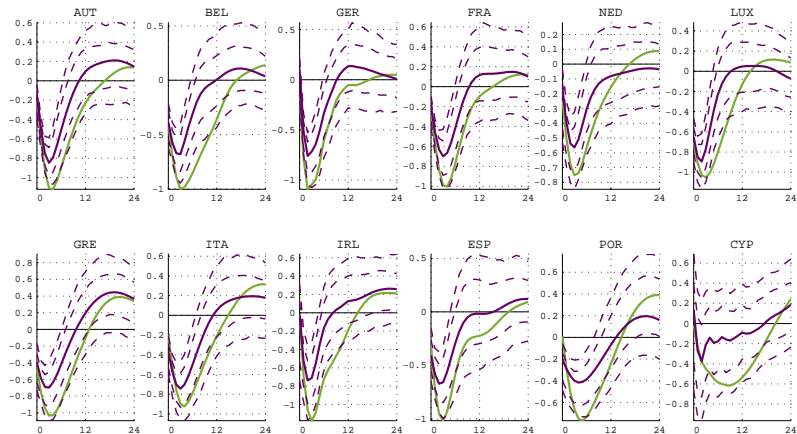
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▷ 100bp decrease in EONIA rate (ACC-like, Rich(er)VAR)



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## ALTERNATIVE IDENTIFICATION

[based on: Miranda-Agrippino (2016), Miranda-Agrippino and Ricco (2016)]

- i. Construct a series of market-based surprises at announcements from high-frequency data
  - ii. Control for central bank's reaction function and other variables of interest which you'd want to have included in the VAR
  - iii. Use orthogonal component as external instrument for the identification
- 
- ▷ Parsimonious way to account for large information
  - ▷ Retains original VAR composition → same ease of comparison across  $i$



- i. CE and QE dates identified using narrative methods
- ii. Implied EONIA (and other asset prices) path:

$$\underbrace{\Delta_2 r_t}_{\text{2-day change}} = \theta_0 + \theta_{pis} PolicyDate_t + \sum_j \theta_j news_j + \varepsilon_t$$



- ▷ Assumes what is not data news is policy surprise (up to resid) → possibly overstating relevance: a lot may be happening in two days
- ▷ More conservative measurement window e.g. 1-day or (better) intra-day may be lower bound but likely to be more accurate

- ▷ Back to the aggregate:
  - i. Useful to give a sense of the quantitative implications
  - ii. What's the market share of the most responsive banks?
  - iii. How much do they contribute to overall lending?
  - iv. If pass-through is necessary condition for transmission, is it also sufficient? Type of lending and uses of cheap funding seem to suggest otherwise [Acharya, Eisert, Eufinger and Hirsch (2016)]