

The Transmission Mechanism of Credit Support Policies in the Euro Area

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Motivation

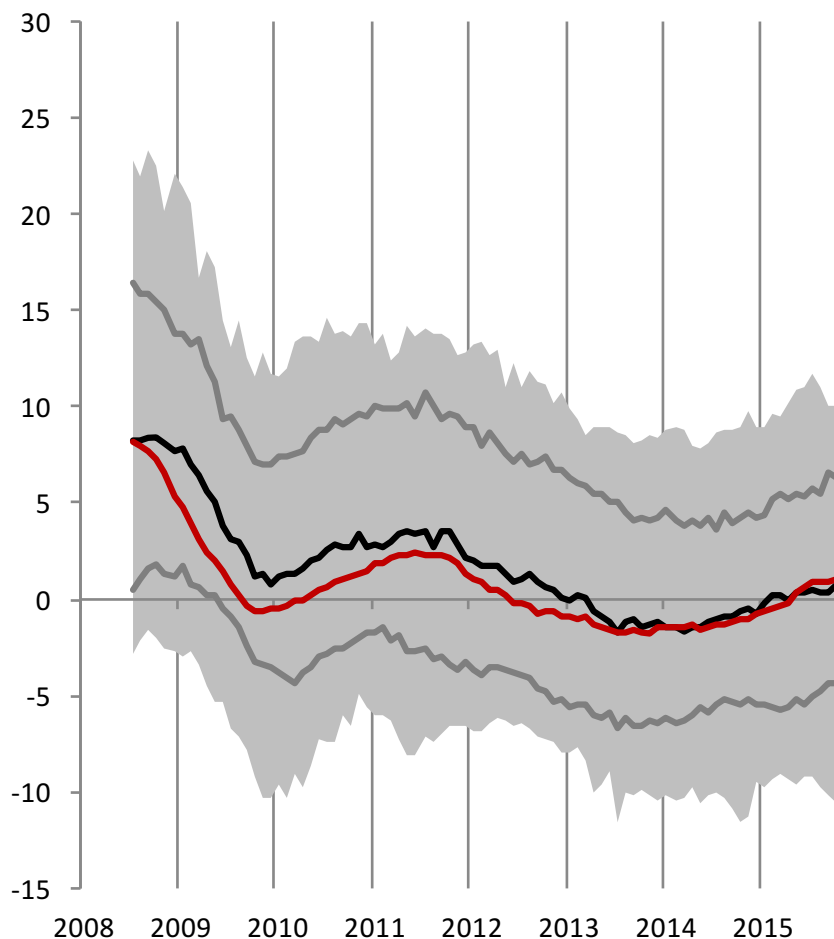
- **European Central Bank has used a wide range of unprecedented **credit support policies** since the start of the crisis to enhance the flow of bank credit to households and firms above and beyond interest rate stimulus**
 - **E.g. fixed interest rate with full allotment, extending maturity of LTRO's, enlarged pool of collateral, purchases of covered bonds and ABS, TLTROs, ...**
- 1. **Have these policies been **effective in stimulating credit flows** to the private sector?**
- 2. **If so, what are the exact **transmission mechanisms** of these policies?**
- **Use monthly dataset of **131 individual euro area banks** by merging different sources of data over sample period **2007M7–2015M10****

Bank lending data

- **Two proprietary monthly databases compiled by the ECB and NCBs**
 - **Individual balance sheet items (e.g. **volume of lending**) of 281 monetary financial institutions: used to construct euro area money and credit aggregates (e.g. M3)**
 - **Individual monetary financial institutions' **interest rates**: compiled from MIR monthly survey for 223 banks**
- **After transformations and cleaning of dataset, 131 banks of 19 euro area countries can be used for the estimations**
 - **Represent 37% of total assets of banking sector and 43% of total lending, while correlation of monthly changes with EA aggregates is 0.73 and 0.88**

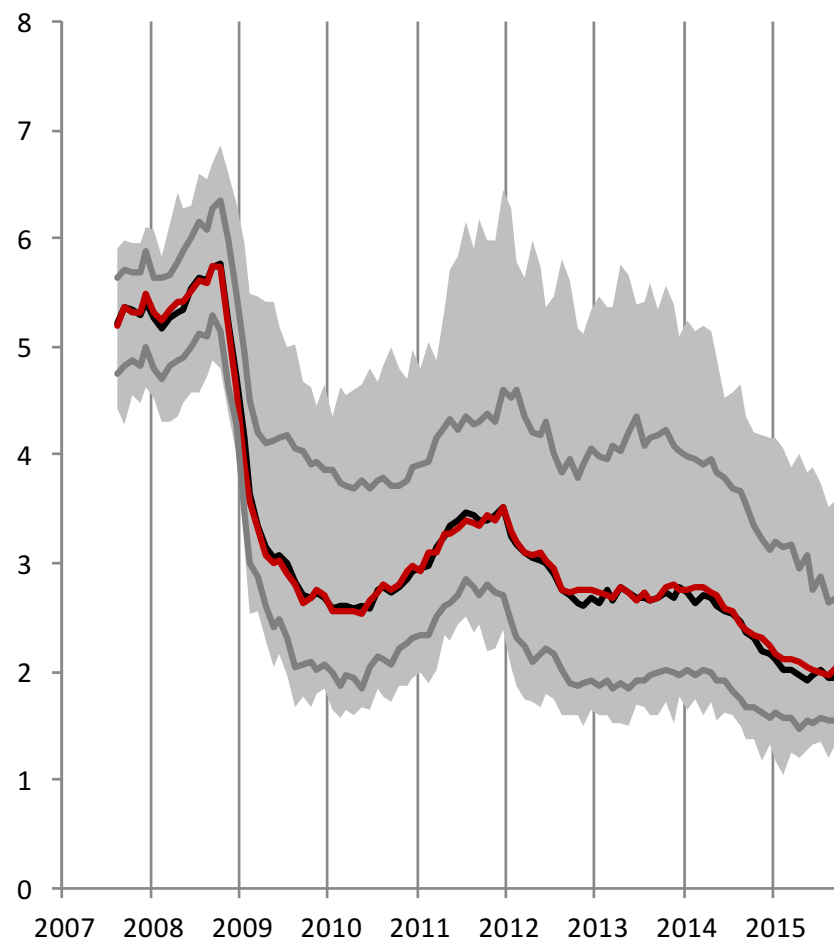
Representativeness of bank level data

Annual growth rate of bank lending



■ 5th and 95th percentiles
■ 16th and 84th percentiles

Bank lending rate



— median of individual banks
— euro area aggregate

Methodology

- Jordà's (2005) local projection method for estimating impulse responses

$$Z_{i,t+h} = \alpha_{i,h} + \delta_{i,h}(L)Z_{i,t-1} + \rho_{i,h}(L)X_{t-1} + \theta_h MPshock_t + \varepsilon_{i,t+h}$$



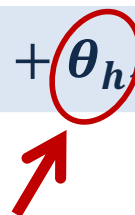
**Impact of shock
at horizon h**

- Z_i : lending rates and volume of lending to firms and households by bank i
- X : set of control variables (macroeconomic, financial and monetary policy variables)
- $MPshock$: **Exogenous ECB balance sheet shocks** of Boeckx, Dossche and Peersman (2016) and **growth rate of ECB balance sheet** (total assets)

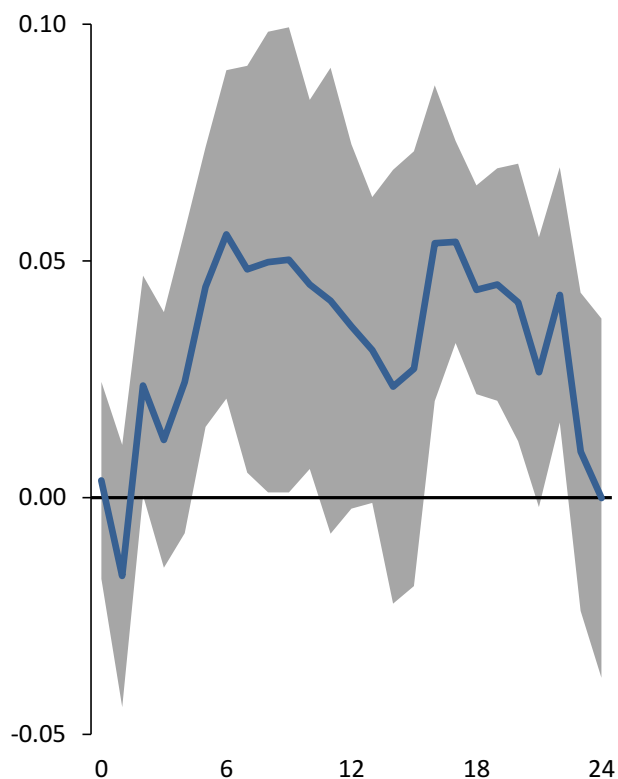
Panel results: impact of a 1.5% balance sheet shock

- Fixed effects, heterogeneous slopes X-variables, 90% confidence bands

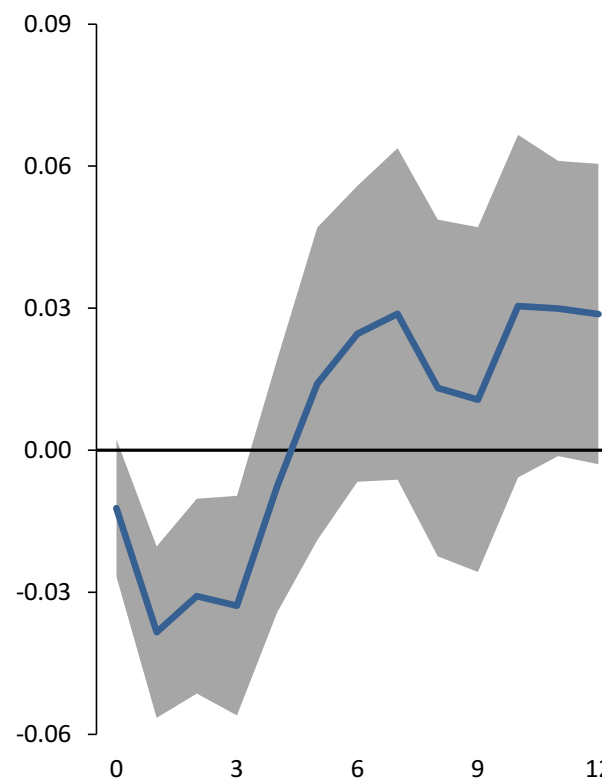
$$Z_{i,t+h} = \alpha_{i,h} + \delta_{i,h}(L)Z_{i,t-1} + \rho_{i,h}(L)X_{t-1} + \theta_h MPshock_t + \varepsilon_{i,t+h}$$



Volume of lending



Lending rates



Transmission mechanisms of credit easing policies

- **Baseline local projections allowing for interaction effects**

$$Z_{i,t+h} = \alpha_{i,h} + \delta_{i,h}(L)Z_{i,t-1} + \rho_{i,h}(L)X_{t-1} + \theta_{i,h}MPshock_t + \varepsilon_{i,t+h}$$

$$\theta_{i,h} = \gamma_{0,h} + \sum_j \gamma_{j,h} DUMC_j + \sum_k \gamma_{k,h} (characteristic(k)_{i,t-1})$$

- **Are there important differences in the way banks with varying characteristics respond to credit easing policies?**
 - **Characteristic(k) captures a specific channel**

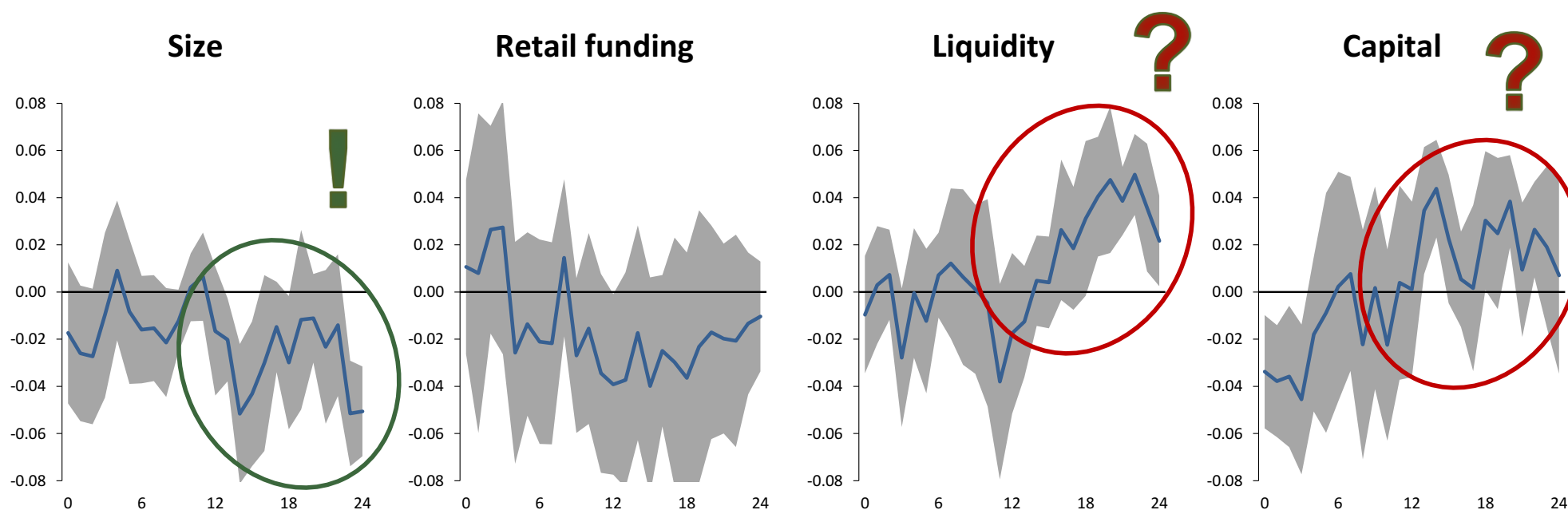
Bank lending view of monetary transmission

- **When financial markets are impaired and banks have difficulties to raise unsecured external funds for their lending activities, the supply of bank loans will be more constrained for:**
 1. **Banks that have greater asymmetric information problems, i.e. **smaller** banks**
 2. **Banks more dependent on (unsecured) **market funding** for lending activities**
 3. **Banks with **less liquid** balance sheets**
 4. **Banks with weaker balance sheets, i.e. **low-capitalized** banks**
- **Policies that enhance access to central bank liquidity and relax conditions to acquire liquidity, should also primarily shift loan supply of these banks**
 - **If so, existence of channel confirmed by the data**

Bank characteristics used in estimations

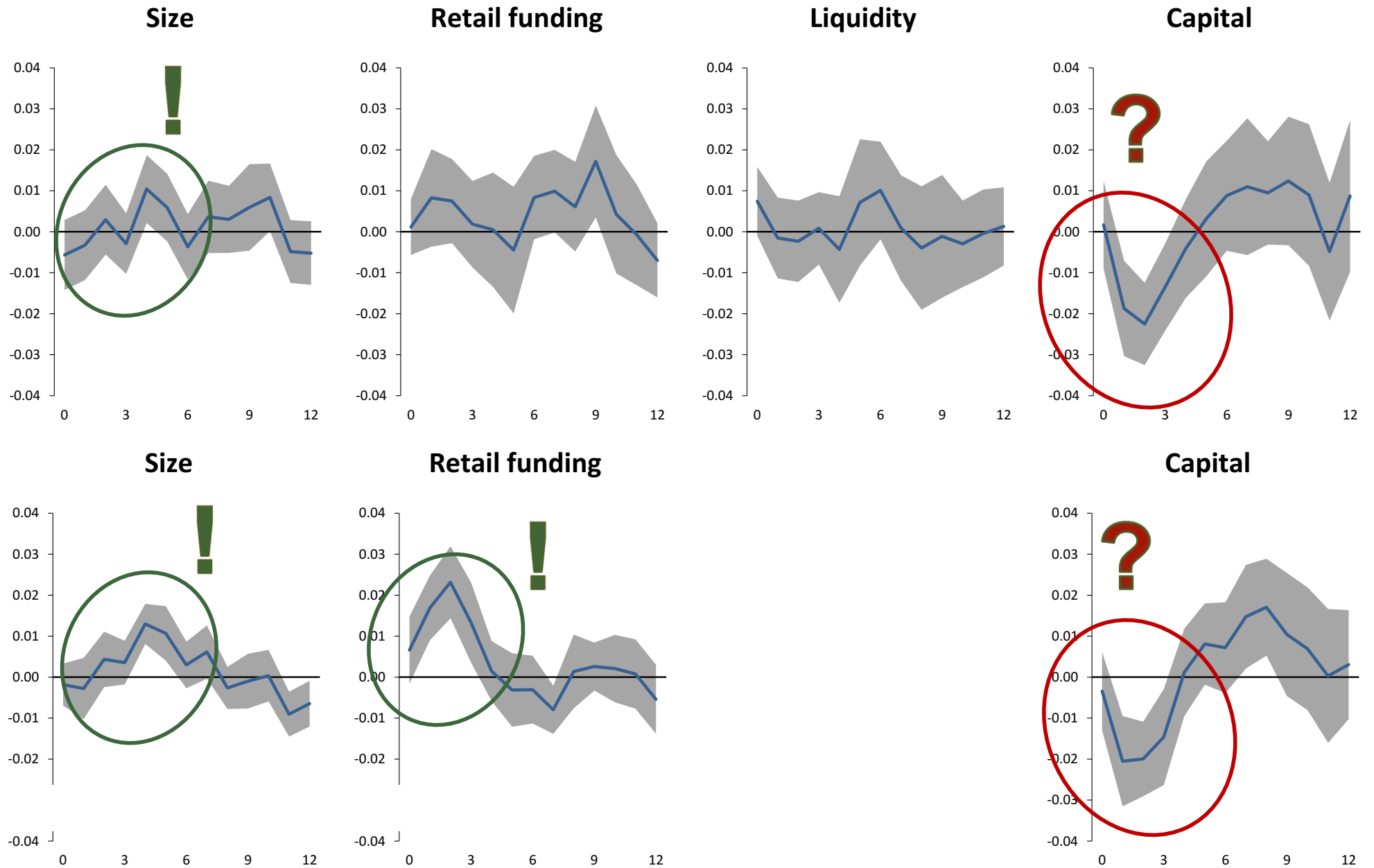
- **Size channel: $100 * \log(\text{total assets})$**
- **Liquidity channel: liquid assets/total assets**
- **Retail funding channel: retail deposits/retail lending**
- **Capital channel: equity/total assets**

Results for volume of lending



- **Note: figures show extra effects if bank characteristic deviates 1 standard deviation from sample mean: magnitudes are economically meaningful!**
- **Results qualitatively similar for growth rate ECB balance sheet as monetary policy indicator**

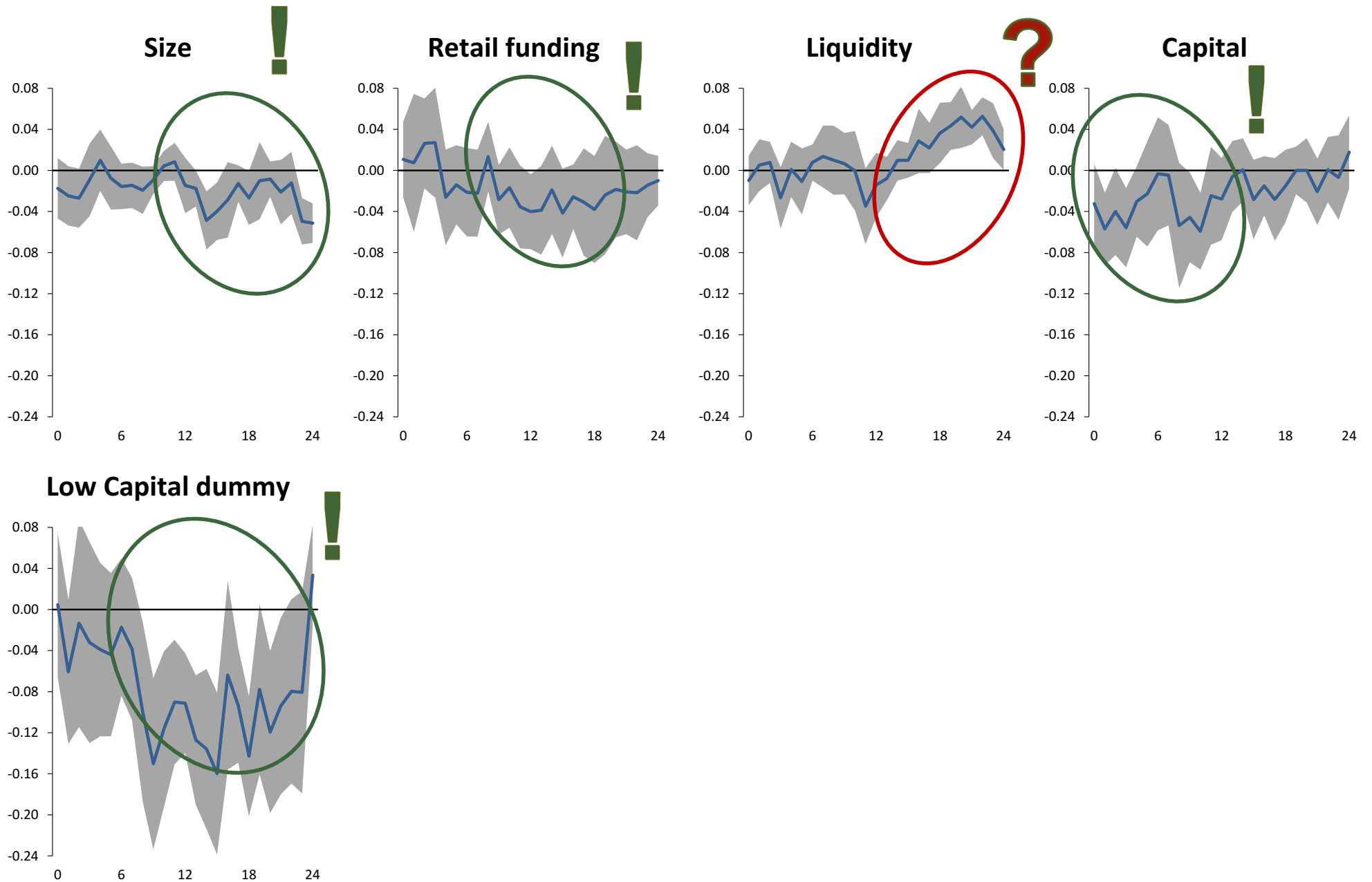
Results for lending rates



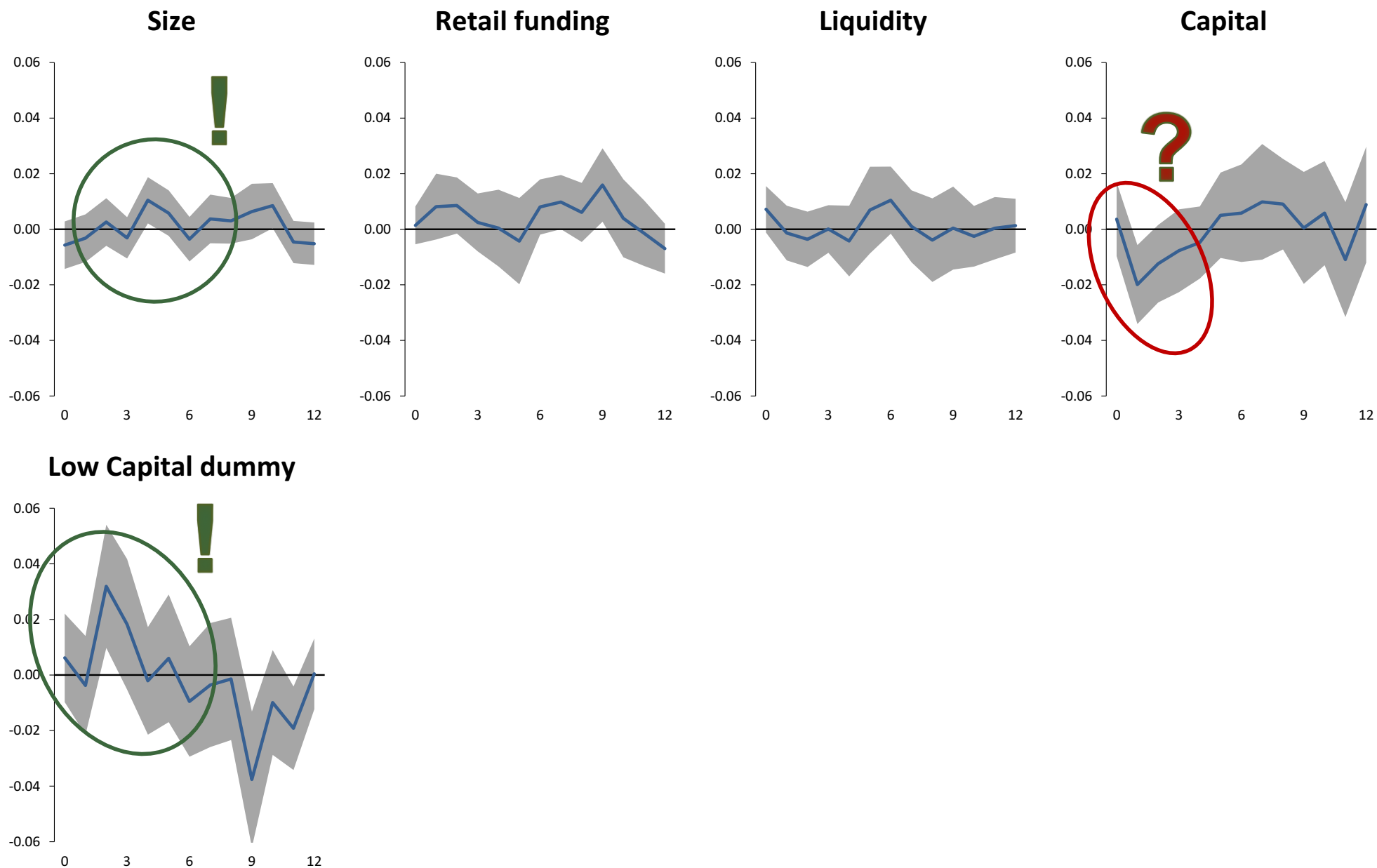
The role of (low) capital

- **Low-capitalized banks are expected to benefit more of credit support policies because they have difficulties to raise unsecured external funds...**
- **... but low levels of capital could also encompass a drag on the ability to increase loan supply**
 - **Banks could extend loans up to a certain multiple of their capital, which is determined by regulatory capital requirements or by market discipline**
- **Analyze the role of capital using two methods:**
 - **Include dummy variable for banks with capital ratio in the lowest quartile of the sample: does closeness to regulatory threshold limits ability to increase lending?**
 - **Include (size*capital), (liquidity*capital) and (retail*capital) as explanatory variables: is there a drag of bank capital on the other channels?**

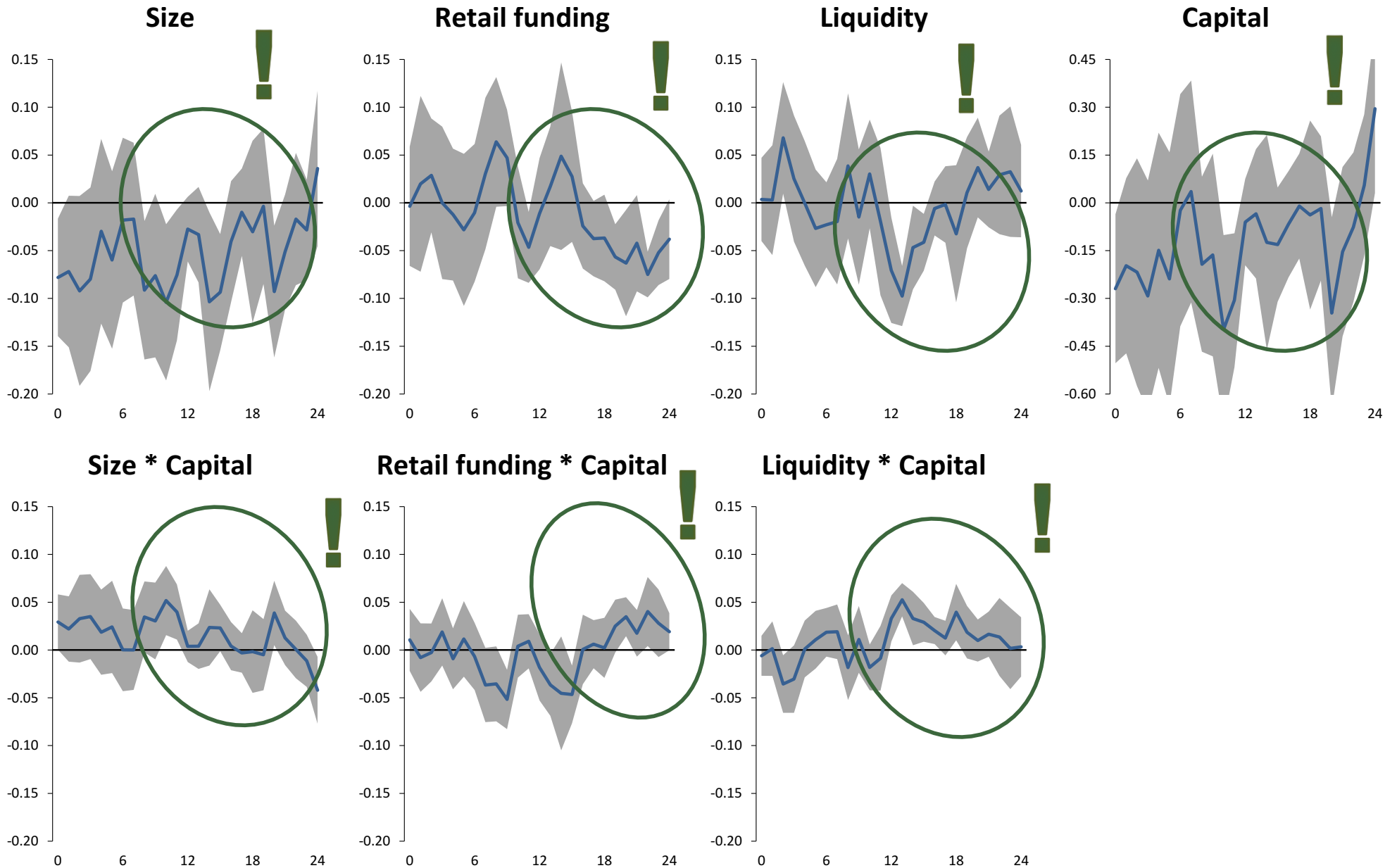
Results for volume of lending and low capital dummy



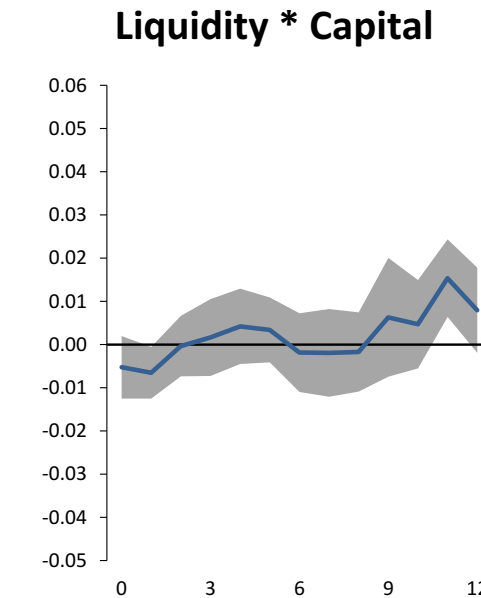
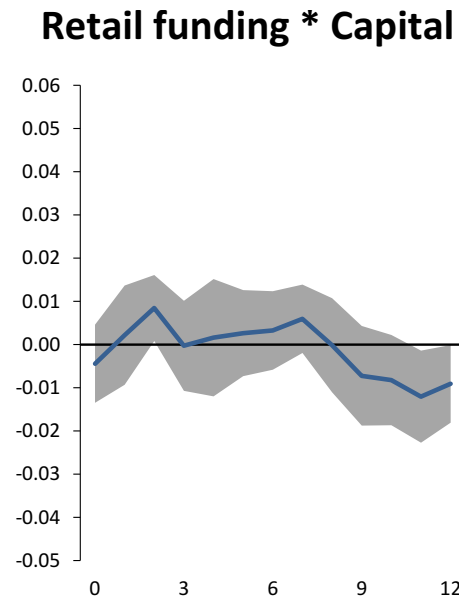
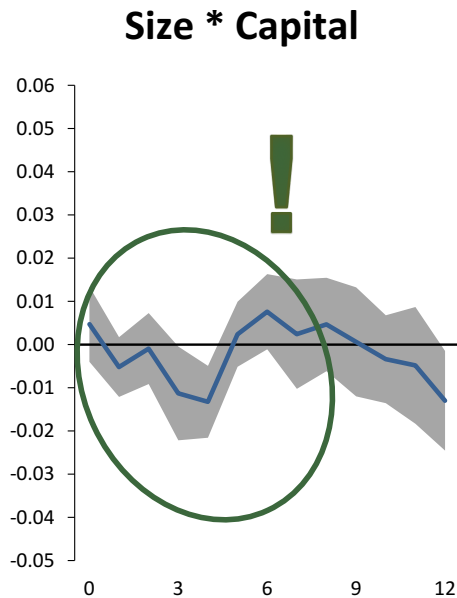
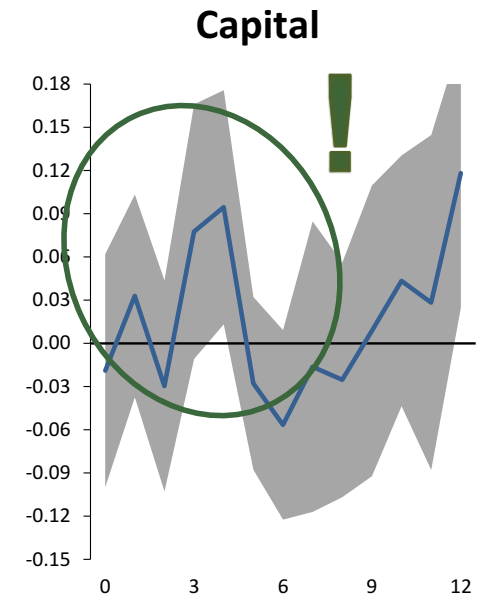
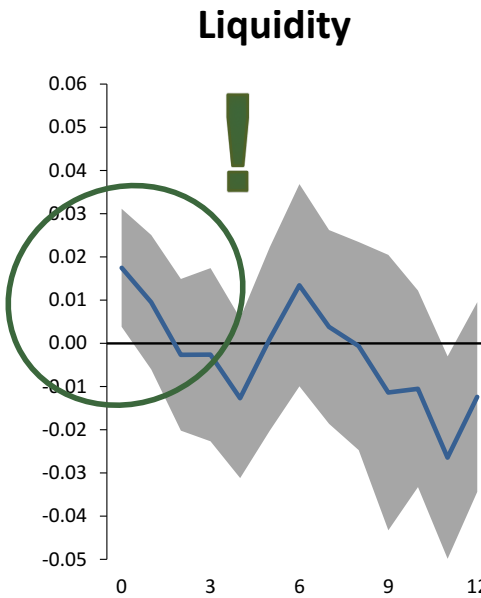
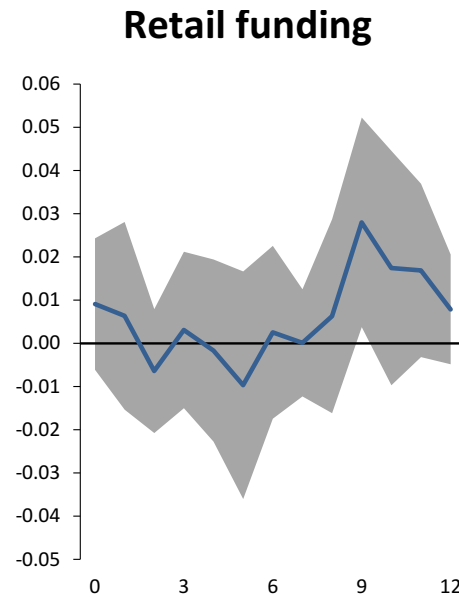
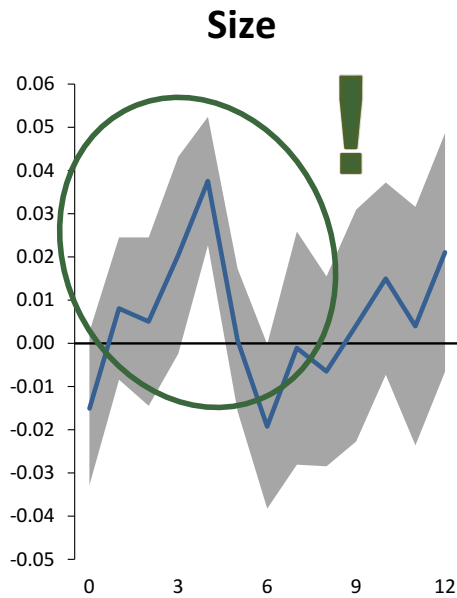
Results for lending rates and low capital dummy



Results for volume of lending and interaction of capital



Results for lending rates and interaction of capital



Conclusions

- **Credit support policies of ECB have been effective to stimulate bank lending to the private sector in the aftermath of the financial crisis**
- **Policies transmitted via size, liquidity, retail funding and capital channel: in line with the “bank lending view” of monetary transmission**
- **Role of capital is ambiguous and nonlinear: lower capital implies a stronger capital channel, but mitigates size, retail and liquidity channel considerably**
 - **On average, drag effect of capital even dominated during the sample period, in particular for banks with low capital ratios**
 - **Increasing bank capitalization should enhance the effectiveness of credit support policies**