

State-Dependent Bank Betas and the Transmission of Monetary Policy

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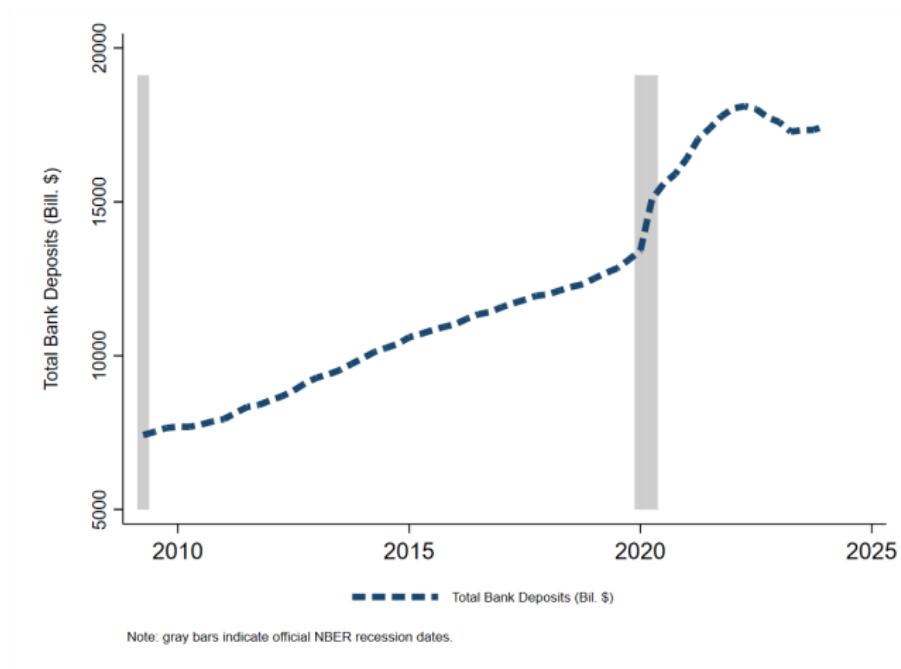
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Financial Group.

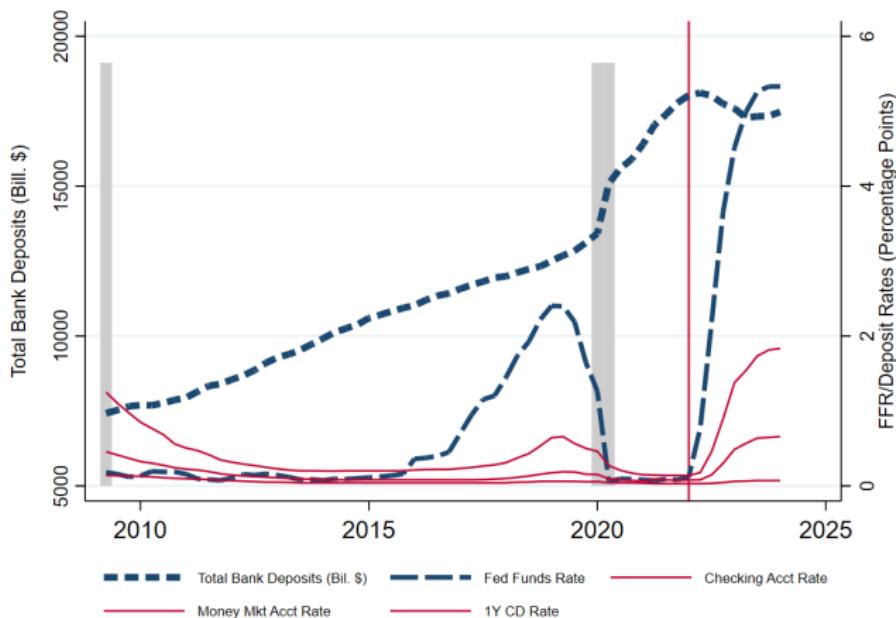
Motivation

Figure: 2009-2024. Total Deposit Volume held at US Commercial Banks



Motivation

Figure: 2009-2024. Total Deposit Volume and Rates vs Fed Funds Rate.

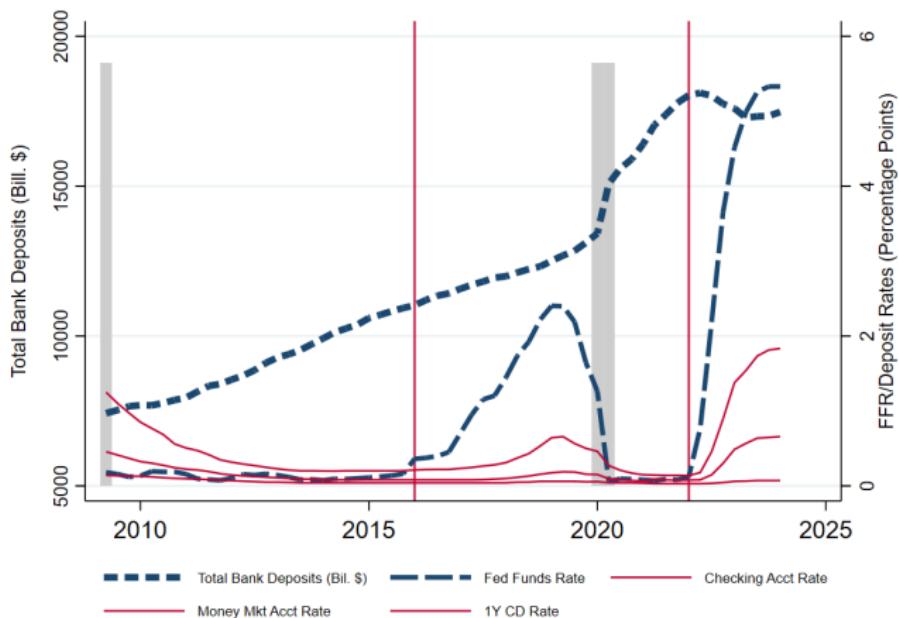


Note: gray bars indicate official NBER recession dates. Red vertical line marks beginning of recent interest rate hike.

- Pass-through to deposit rates is incomplete and starts way into hiking cycle.

Motivation

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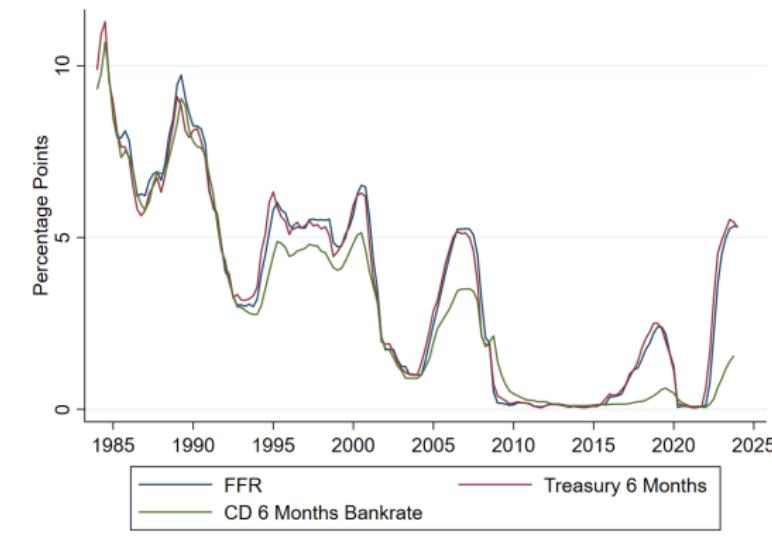
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Figure: 1980-2024. Comparing 6 Month CD, Treasury and Fed Funds Rate.

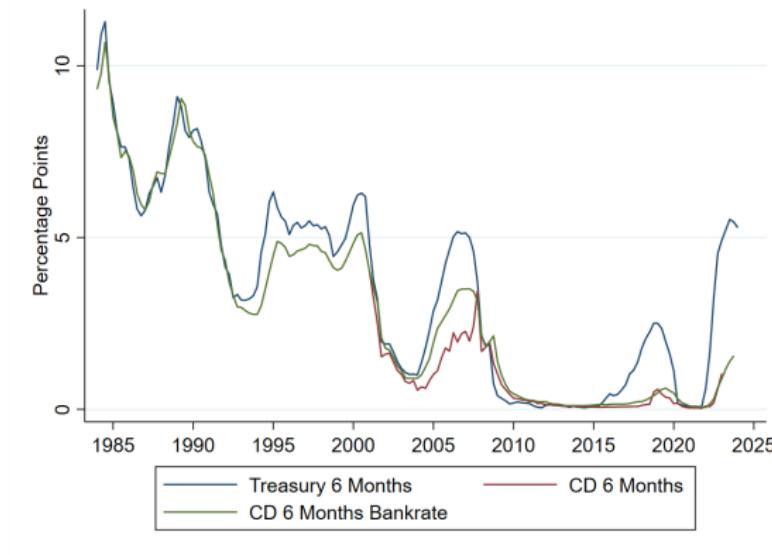


- This is actually similar also for past interest rate hikes starting in 1990.

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Figure: 1980-2024. Comparing 6 Month CD, Treasury and Fed Funds Rate.



- Especially so when focusing on very large banks.

- **Bank Deposit Relevance:**

- Deposits account for roughly **80% of total bank liabilities**.
 - 40% in Saving Deposits, 10% in Checking, 20% in Foreign, and 10% in Time Deposits.
 - Large impact on bank's **cost of funds**, and **Net Interest Margin (NIM)**.
- Banks heavily rely on "**Deposit Franchise**" to fund their long term assets (see Drechsler et al (2021)).
- For 60%+ of US households (below 90K annual income) deposits are 8-18% of total financial assets (SCF 2022).

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- **Monetary Policy (MP) Pass-Through:**

- Deposit in/outflows from/to other cash/other financial assets affects bank credit capacity.
- Monetary Policy (MP) effects on profitability margins and bank capital affect asset side expansions/contractions.

This Paper: Results Preview

- Document **monetary policy (MP) pass-through to average liability-side interest rates** (deposit betas) is **state-dependent**:
 - when **rates are high** the **pass-through to deposits is stronger**.
 - especially so for lower amounts of saving deposits or lower maturities of time deposits.

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 - **Asset-side rates go up by more** when MP rate rises, but **little to negative state dependence**.
- **Net Interest Margin raises** when interest rates rise, **but it goes up by less the higher is the interest rate**.
- **Net Worth goes up for big banks** when rates are low, **much less when rates are high**.

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- **Net Interest Margin raises** when interest rates rise, **but it goes up by less the higher is the interest rate**.
- **Net Worth goes up for big banks** when rates are low, **much less when rates are high**.
- Rationalize in a model of imperfect bank competition and limited attention borrowers (not today).

This Paper: Methodology

- Construct **comprehensive dataset of US Commercial Banks aggregates.**
 - ① Call Reports (Bank Level Balance Sheet and Income Data).
 - ② Ratewatch (Branch/Product Level Data).
 - ③ Focus on the top 50 Banks (80% of Total US Assets).

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- Use **Local Projections**:
 - to estimate **impulse response functions** with respect to **exogenous monetary policy shocks**.
 - allowing for **state-dependence** through interaction terms.

Related Literature and Contribution

- ① **Transmission of monetary policy to and through banks**
 - ① Bank Lending/Capital/Risk Tacking Channel (Bearnanke and Blinder (1988), Kashyap and Stein (2000), Van den Heuvel (2002), Dell'Ariccia and Marquez (2006) ... many)
- ② **Market Power** (Scharfstein and Sunderam (2016), Wang et al (2022))
 - ① Deposit Channel of Monetary Policy (Drechsler et al (2017), Begenau and Stafford (2022))
- ③ **Banks Deposit Franchise and Maturity Transformation** (Drechsler et al. (2021))
- ④ **Deposit Rate Convexity** (Greenwald at al. (2023))
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- **This paper:** Investigate **state-dependent effects** of MP arising in presence of **bank market power**.
 - Focus on the dynamics of bank's core interest margins,
 - breaking down core liabilities and assets causing it,
 - using exogenous variation in monetary policy.

- ① Introduction
- ② Data
- ③ Empirical Methodology
- ④ Responses of average interest rate on bank liabilities, assets.
- ⑤ Responses of net interest margin and net worth.
- ⑥ Deep dive into bank deposits.
- ⑦ Preliminary thoughts on the model and implications for the monetary transmission mechanism.

Data and Constructed Variables

Data

- Bank Call Reports, Quarterly Data from 1985Q1 up to 2023Q2.
- Ratewatch, Monthly Advertised Branch-Level Rates on various Loan and Deposit Products.
- Real GDP, CPI, Excess Bond Premium (EBP), Industrial Production (IP), Federal Funds Rate (FFR).

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Constructed Variables from Call Reports:

- **Interest Expense Rate** = Total Interest Expense on Liabilities / Total Liabilities
- **Interest Income Rate** = Total Interest Income on Assets / Total Assets
- **Net Interest Margin (NIM)** = Interest Income Rate - Interest Expense Rate
- **Deposit Interest Rate** = Total Interest Expense on Total Deposits / Total Deposits
- **Loan Income Rate** = Total Interest Income on Total Loans / Total Loans
- **Similar loan rates:** C&I Loans Rates
- **Similar deposit rates:** Transaction, Saving, Time and Foreign Deposit Rates.
- **Aggregation: CPI-Asset Weighted vs Equally Weighted.**

► More on Aggregation

- **Basic Local Projection:**

- ① $R_{t+h} = c^h \beta_0^h MP_t^{shock} + \beta_1^h MP_t^{shock} \times FFR_{t+h} + A^h(L)_{t=1}^3(R_t, MP_t^{shock}) + B^h(L)_{t=0}^3(GDP_t, CPI_t, IP_t, EBP_t)$
- ② for $h = 1, 2, \dots, 7$.¹

► VAR IRFs

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- Derivation of the MP_t^{shock} :

- ① Recursive Identification: $VAR(3), Y = (GDP_t, CPI_t, IP_t, EBP_t, FFR_t)$
 - ① $MP_t^{shock} = \varepsilon_t^4$

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- Derivation of the state FFR_{t+h} :

- ① Derive IRF of FFR to MP_t^{shock} :
$$FFR_{t+h} = c + \beta_0^h MP_t^{shock} + A(L)_{t=1}^3 FFR_{t-1} + B(L)_{t=0}^3(GDP_t, CPI_t, IP_t, EBP_t) + \varepsilon_t$$
- ② Compute $\hat{FFR}_{t+h} = FFR_{t-1} + \beta_0^h$. (see Jordà et al. (2023)).

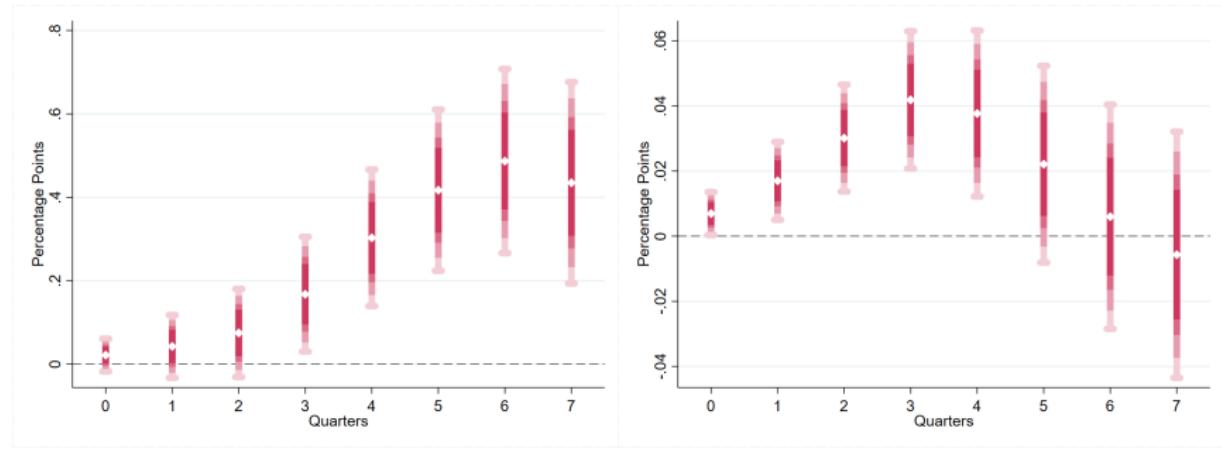
► VAR IRFs

Results from Local Projections.

- Average Rate on Liabilities
- Average Rate on Assets
- Net Interest Margin
- Net Worth
- Deep dive on Deposits
- Deep dive on Loans

Interest Expense Rate. CPI Asset Weighted. Top 50 Banks.

Figure: Interest Expense Rate. CPI Asset Weighted. Top 50 Banks.

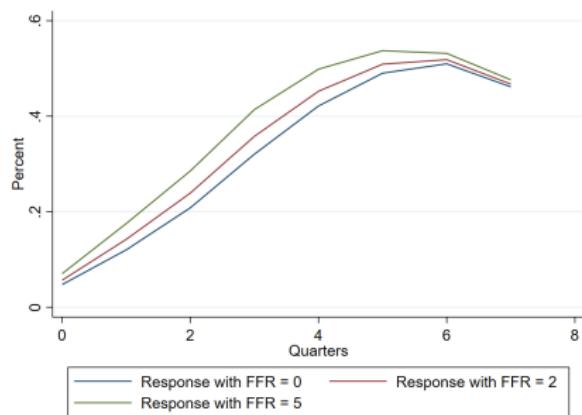


(a) Response to MP_t^{shock}

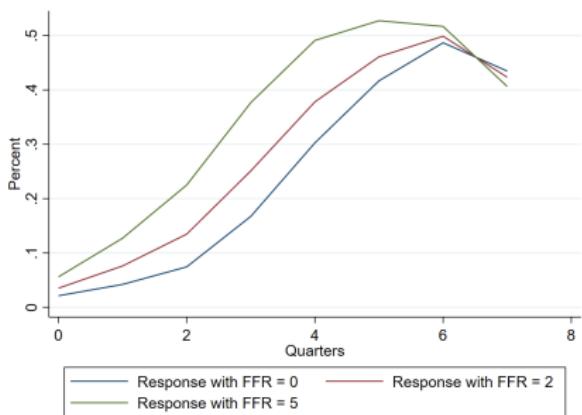
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Interest Expense Rate. Comparison with different initial FFR state.

Figure: Interest Expense Rate. Comparison with different initial FFR state. Top 50 Banks.

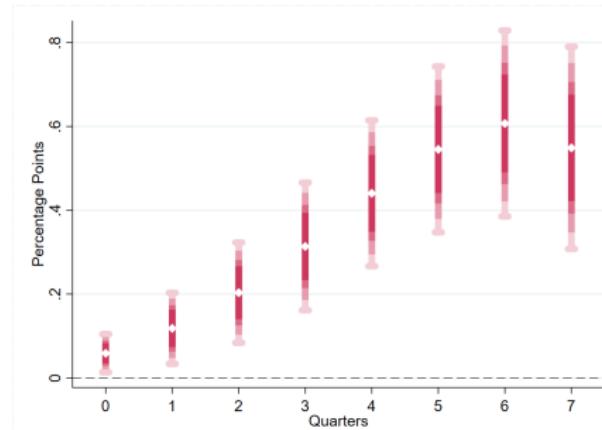
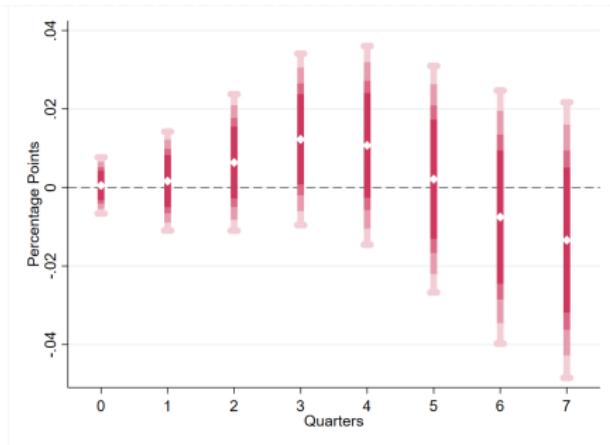


(a) Equally Weighted



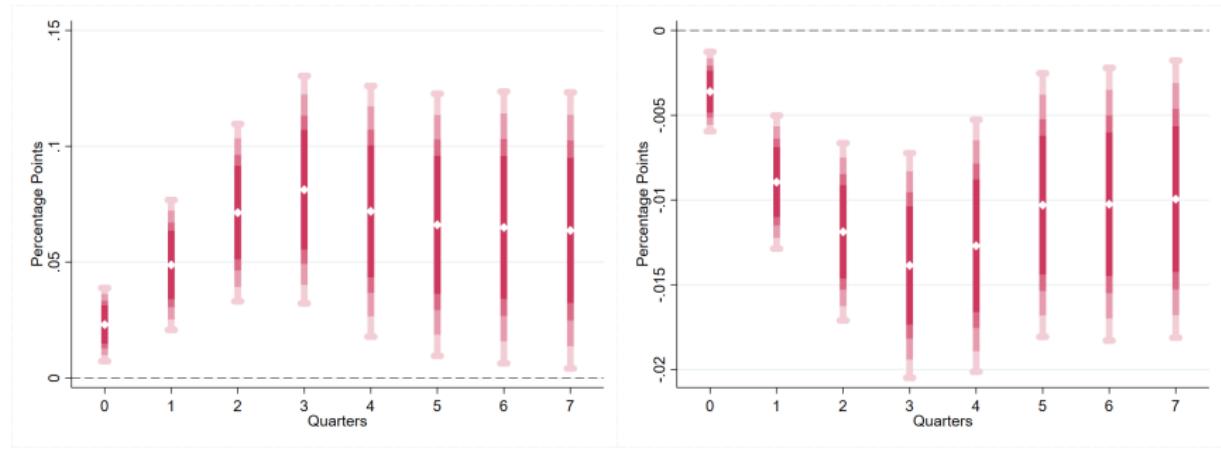
(b) CPI Asset Weighted

Figure: Interest Income Rate. CPI Asset Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Net Interest Margin. CPI Asset Weighted. Top 50 Banks.

Figure: Net Interest Margin. CPI Asset Weighted. Top 50 Banks.

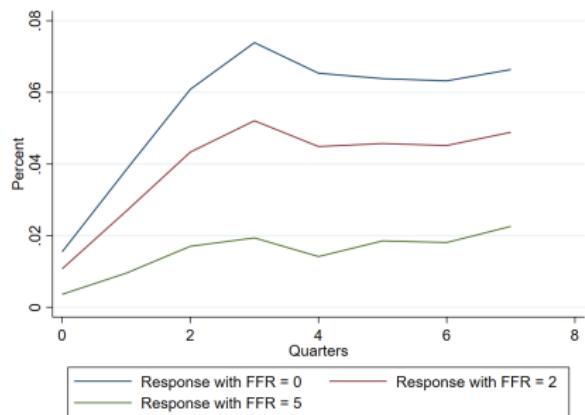


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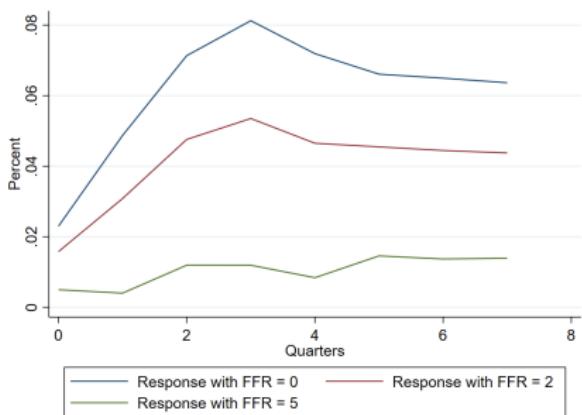
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Net Interest Margin. Comparison with different initial FFR state.

Figure: Net Interest Margin. Comparison with different initial FFR state. Top 50 Banks.



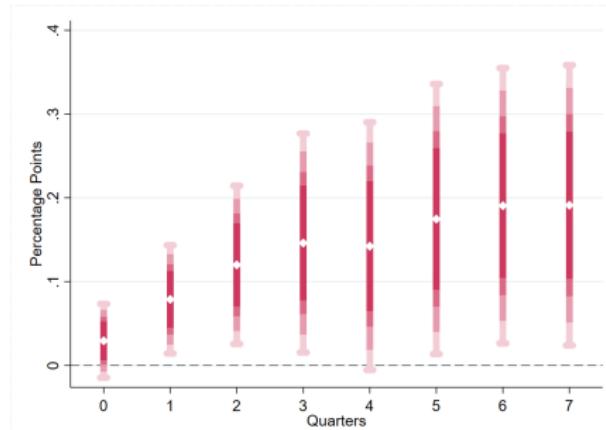
(a) Equally Weighted



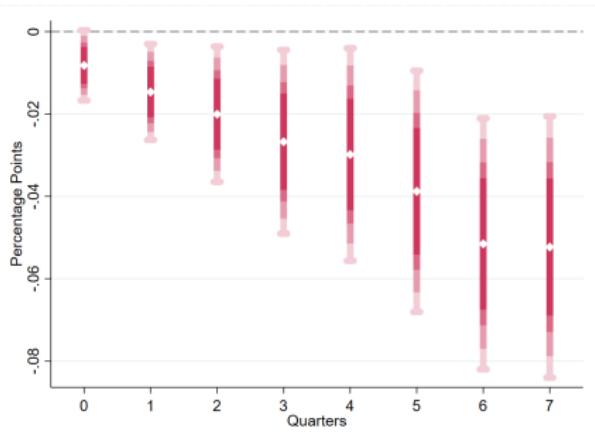
(b) CPI Asset Weighted

Net Worth. CPI Asset Weighted. Top 50 Banks.

Figure: Net Worth (Tier 1 Capital over Total Assets). CPI Asset Weighted. Top 50 Banks.



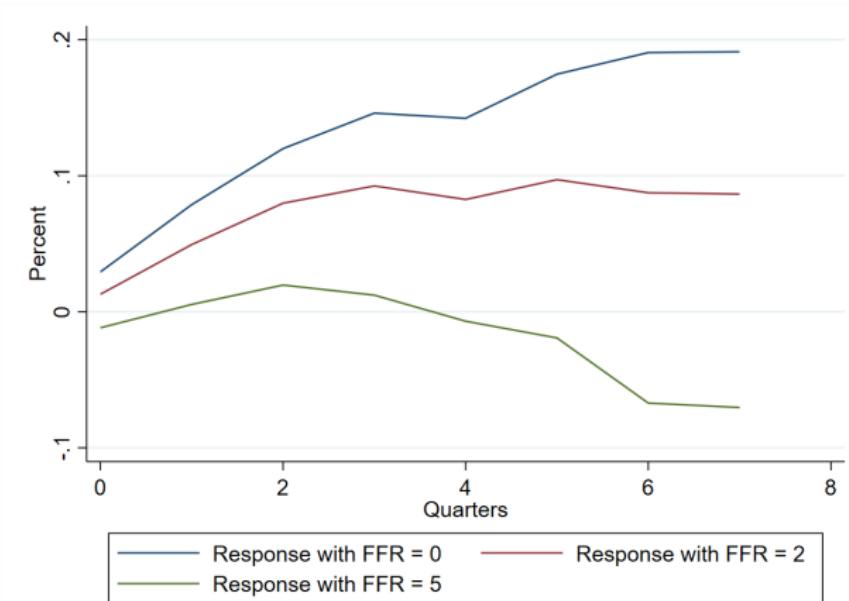
(a) Response to MP_t^{shock}



(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

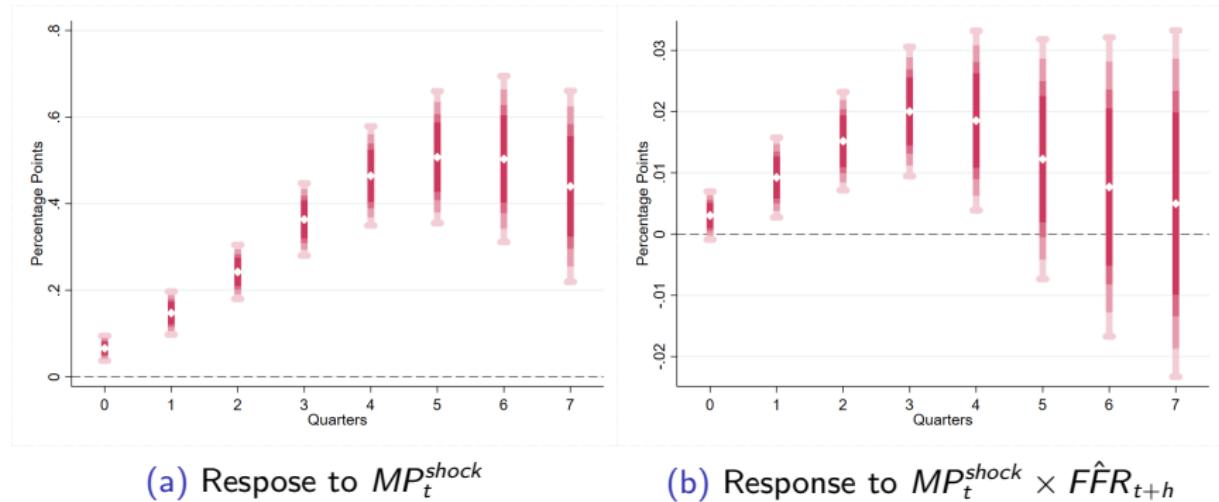
Net Worth. Comparison with different initial FFR state.

Figure: Net Worth (Tier 1 Capital over Total Assets). Comparison with different initial FFR state. Top 50 Banks.



Domestic Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.

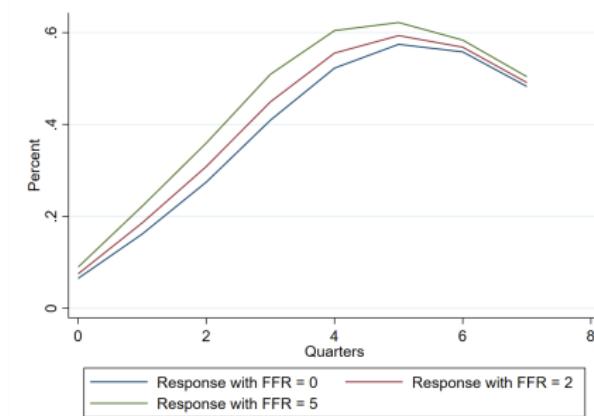
Figure: Domestic Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.



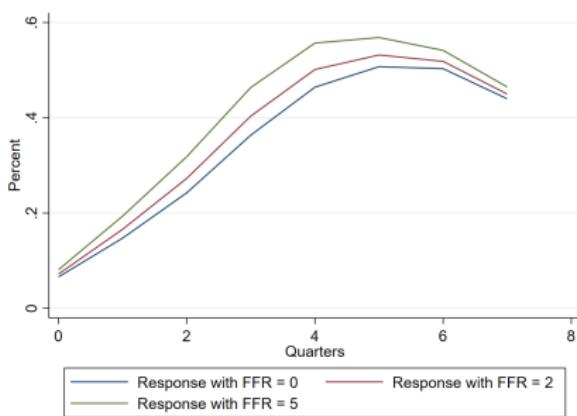
- Domestic Deposits are here the sum of **Transaction** (checking and other), **Saving** (Money Market Deposit Accounts and other) and **Time** (CDs and similar) Deposit Accounts.

Domestic Deposit Expense Rate. Comparison with different initial FFR state.

Figure: Domestic Deposit Expense Rate. Comparison with different initial FFR state. Top 50 Banks.



(a) Equally Weighted



(b) CPI Asset Weighted

Deposit Types Share of Total Liabilities.

Figure: Transaction, Saving, Time and Foreign Deposit share of Total Liabilities

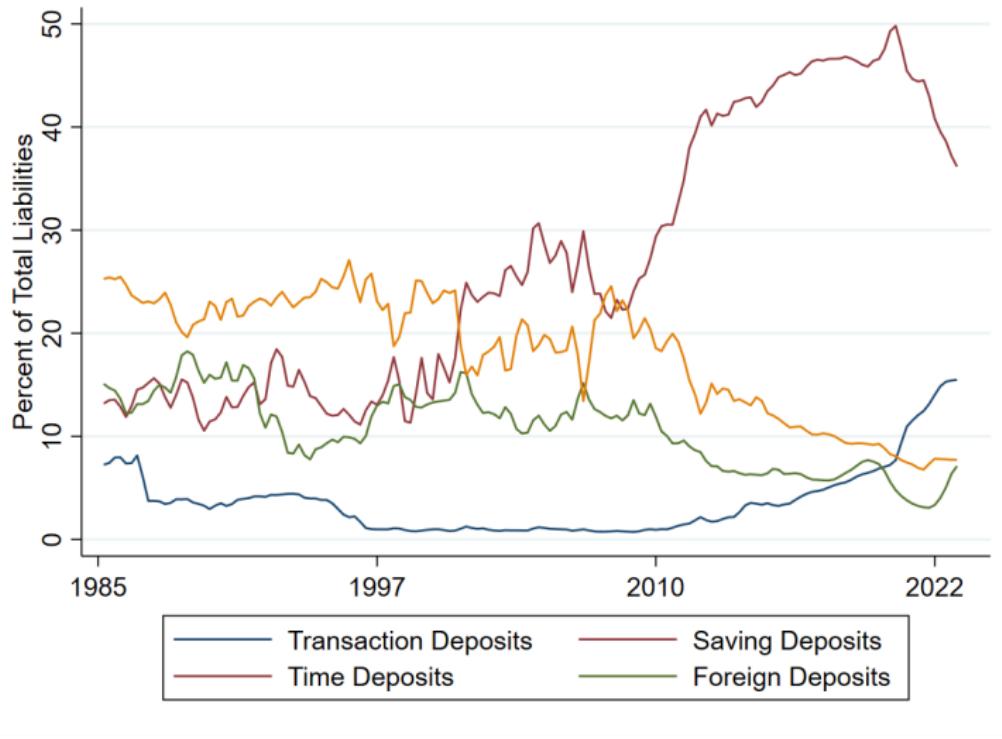
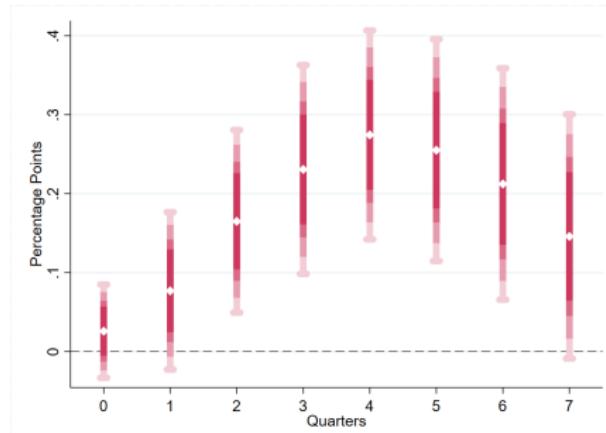
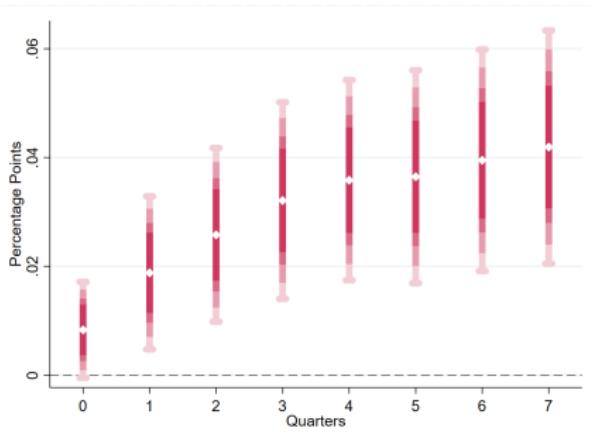
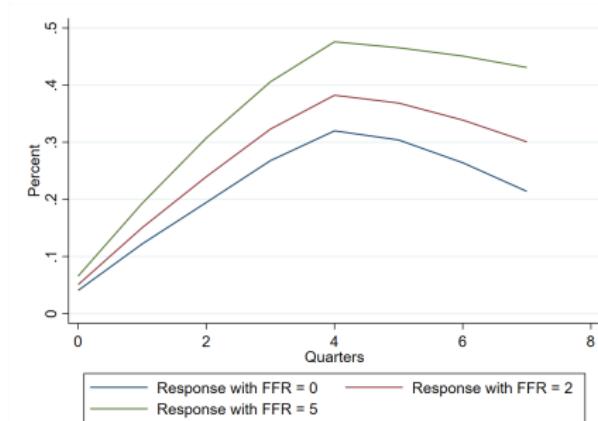


Figure: Saving Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.

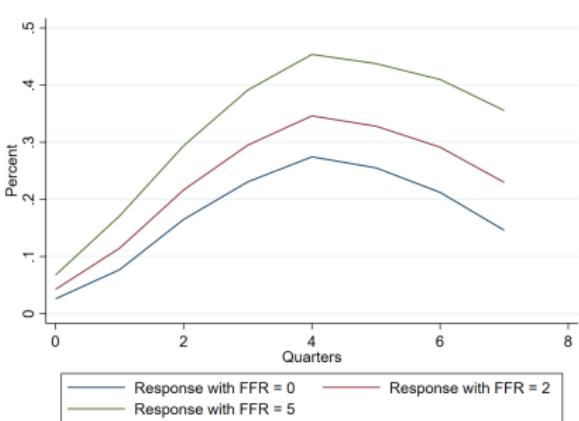
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Saving Deposit Expense Rate. Comparison with different initial FFR state.

Figure: Saving Deposit Expense Rate. Comparison with different initial FFR state. Top 50 Banks.



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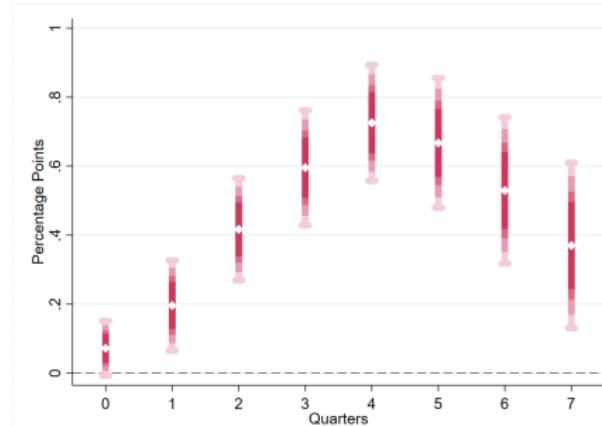


(b) CPI Asset Weighted

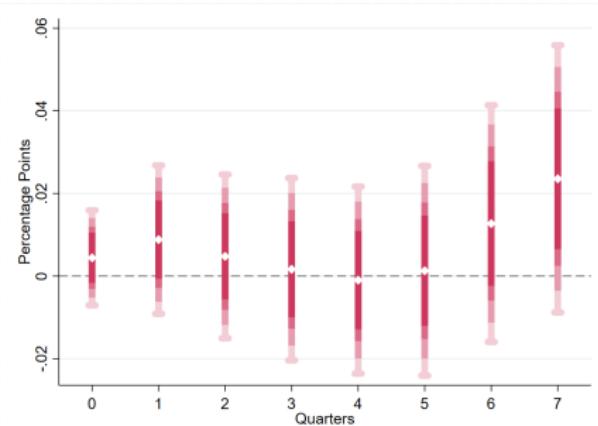
► Dig deeper on Saving Deposits

Time Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.

Figure: Time Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}



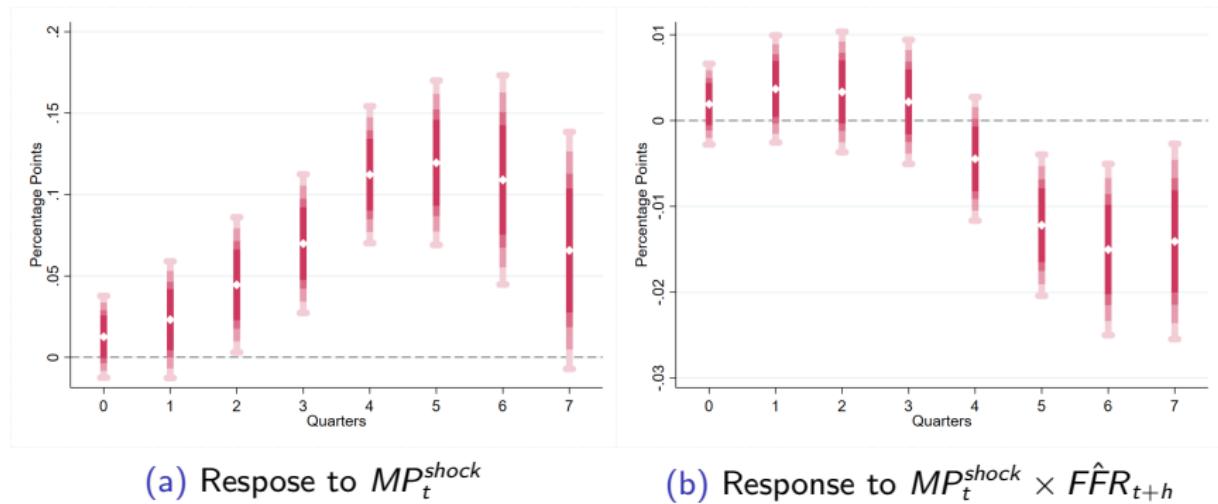
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

More:

- Transaction Deposit response **positive** and **state-dependent** [▶ Go](#)
- Foreign Deposit response **very positive** and **state-dependent** [▶ Go](#)

Deep Dive: Spread 12M CD 100K - 10K.

Figure: Spread 12M CD 100K - 10K. CPI Asset Weighted. Top 50 Banks.

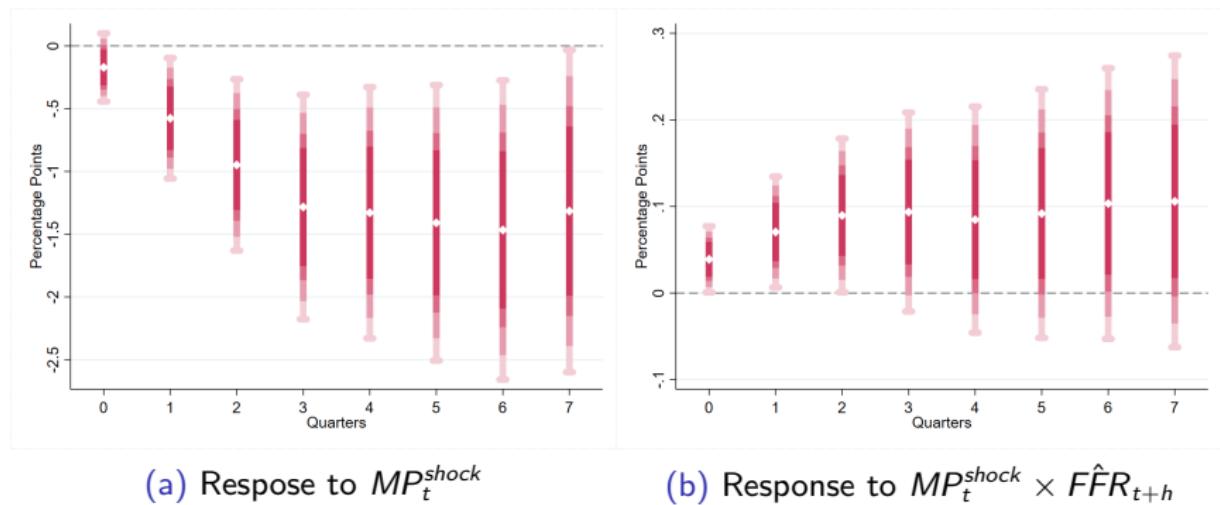


Similar Result for large vs small saving accounts.



Saving Deposit Share of Liabilities. CPI Asset Weighted. Top 50 Banks.

Figure: Saving Deposit share of liabilities. CPI Asset Weighted. Top 50 Banks.

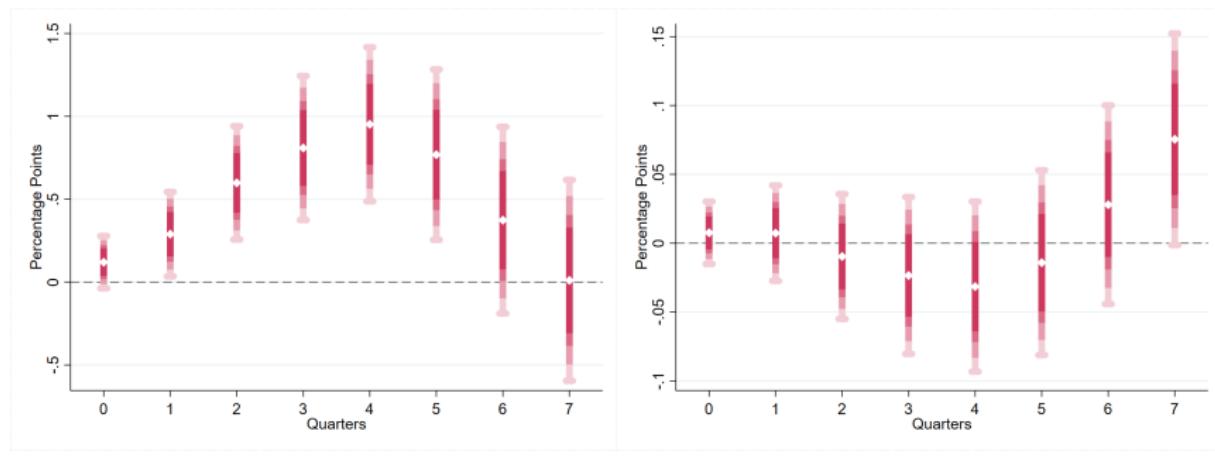


(a) Response to MP_t^{shock}

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Time Deposit Share of Liabilities. CPI Asset Weighted. Top 50 Banks.

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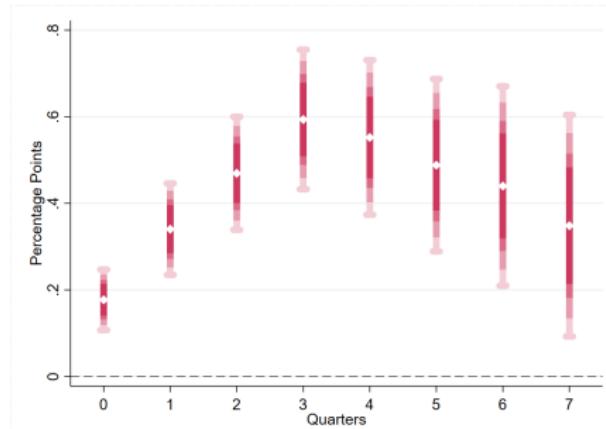
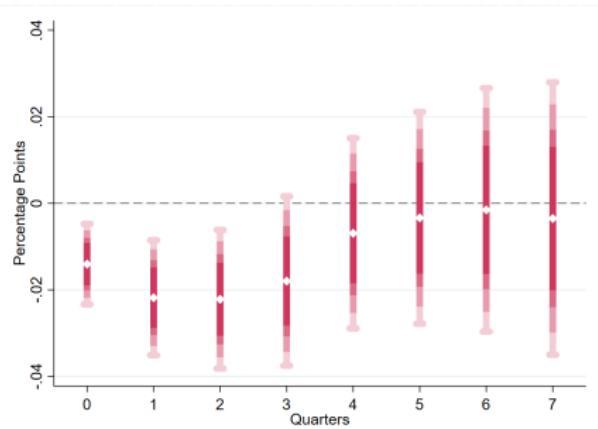


(a) Response to MP_t^{shock}

(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

- Mainly due to share of 3M-1Y increasing in the MP rate. ▶ Go
- Not much happening in Transaction and Foreign Deposits. ▶ Go

Figure: Loan Interest Rate. CPI Asset Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

More:

▶ Loan Decomposition, Rates and Shares

Conclusion: Summary of Findings

- **Pass-through to bank rates** is initially **low** and **rises** in an **hump-shaped** pattern. But it is **never complete** (less on liability side).

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- **Liability/Deposit rates:** positive passthrough and state-dependent (raising in level of rates).
 - **Saving Deposits:** **weaker** passthrough and **stronger state-dependence** (raising in level of rates).
 - **Time Deposits:** **stronger** passthrough and **no state-dependence** (raising in level of rates).
 - Large vs Small Deposits: small deposits exhibit higher state dependence.
- **Shares:** time deposit share increases as the FFR **goes up**, the share of **Saving Deposits** decreases.

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 - Large vs Small Deposits: small deposits exhibit higher state dependence.
- **Shares:** time deposit share increases as the FFR **goes up**, the share of **Saving Deposits** decreases.
- On net, when the FFR rises the interest rate on liabilities goes up through a **mix of shift in:**
 - **intensive margin** (interest paid on a given liability).
 - **extensive margin** (shifts in the share of liabilities between different kinds of deposit products).

Conclusion: Summary of Findings Cont'd

- ① **Average asset-side rate:** **positive** pass-through (**stronger** than liabilities), **no state-dependence**.
 - ① **Average loan rates:** **positive** pass-through, **negative** state dependence.

Conclusion: Summary of Findings Cont'd

- ① **Average asset-side rate:** **positive** pass-through (**stronger** than liabilities), **no state-dependence**.
 - ① **Average loan rates:** **positive** pass-through, **negative** state dependence.
- ② **NIM goes up when the FFR goes up**, but there is **strong negative state-dependence**.
- ③ **NIM goes up more for large banks** but the **state-dependence is also stronger** for big banks than for smaller banks.
 - ① These reflect the **differential response of the interest rates paid on liabilities by big banks** with respect than small banks.
- ④ **Net Worth goes up for large banks** when rates are low, **much less when rates are high**.

Conclusion: Preliminary thoughts on the model and implications

Main Ingredients and Implications.

- Banks Deposit State-Dependence: "**sticky**" deposits of "**sleepy**" depositors.

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 - Banks competition over deposits increases at high rates.
 - Pass-Through to deposit rates increases.
- As **rates become high** MP has **decreasing positive** effects on:
 - bank's profitability and capital accumulation.
 - state-dependence in bank lending/capital/risk-taking channel of monetary policy.

Conclusion: Preliminary thoughts on the model and implications

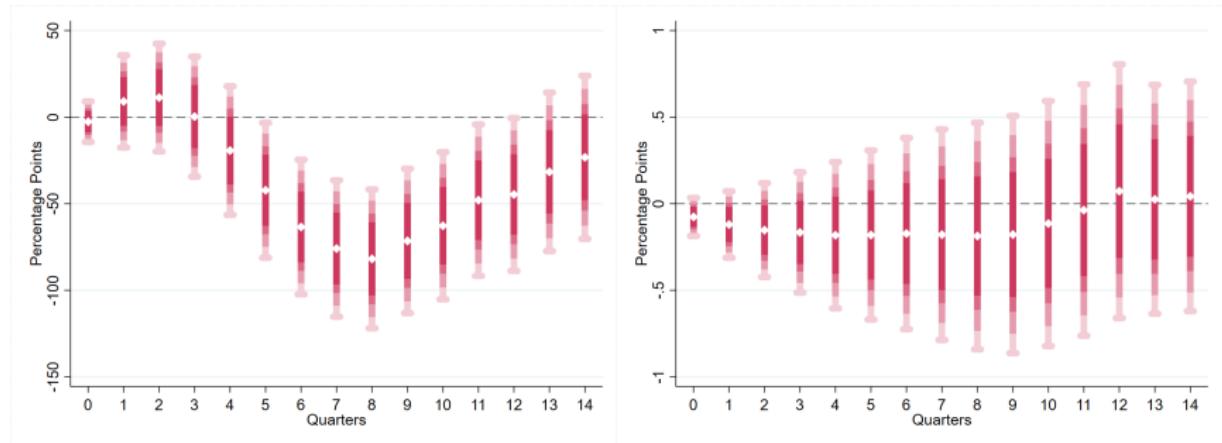
Main Ingredients and Implications.

- Banks Deposit State-Dependence: "**sticky**" deposits of "**sleepy**" depositors.
 - Depositors pay increasingly more attention to their deposits as rates go up.
 - Banks competition over deposits increases at high rates.
 - Pass-Through to deposit rates increases.
- As **rates become high** MP has **decreasing positive** effects on:
 - bank's profitability and capital accumulation.
 - state-dependence in bank lending/capital/risk-taking channel of monetary policy.
 - hiking MP rates when rates are already high is more contractionary than with low rates.

Appendix

Macro IRFs to Fed Funds Shock

Figure: Macro IRFs to FED Funds Shock.



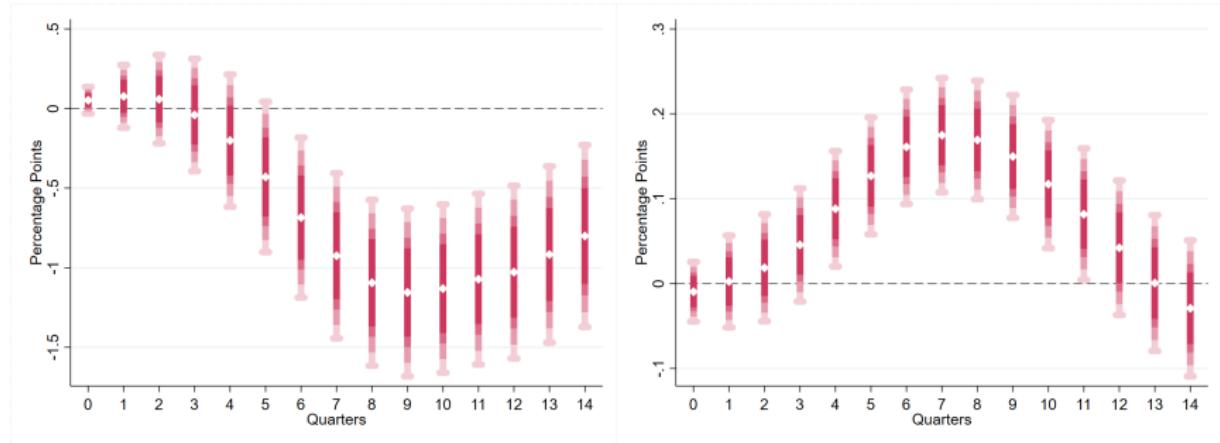
(a) GDP response to MP_t^{shock}

(b) CPI response to MP_t^{shock}

▶ back

Macro IRFs to Fed Funds Shock.

Figure: Macro IRFs to FED Funds Shock.

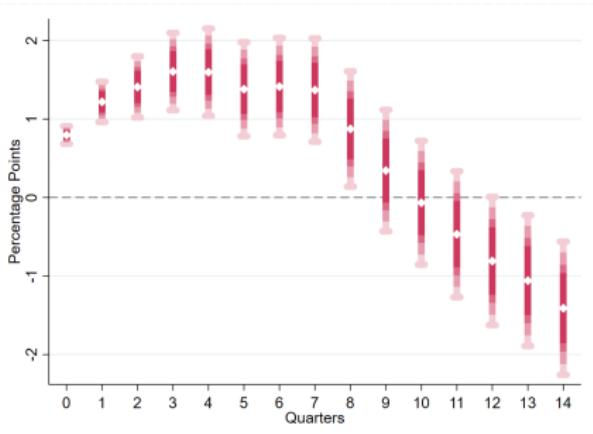
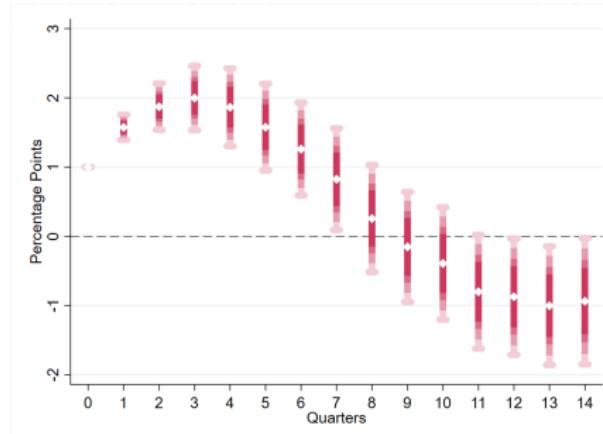


(a) Industrial Production Response to
 MP_t^{shock}

(b) Excess Bond Premium Response to
 MP_t^{shock}

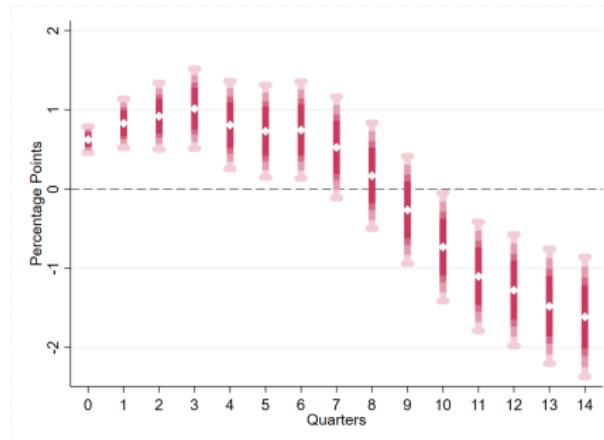
Macro IRFs to Fed Funds Shock.

Figure: Macro IRFs to FED Funds Shock.

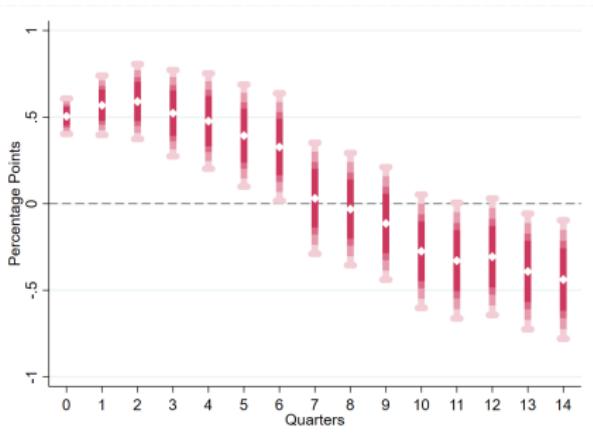


Macro IRFs to Fed Funds Shock.

Figure: Macro IRFs to FED Funds Shock.



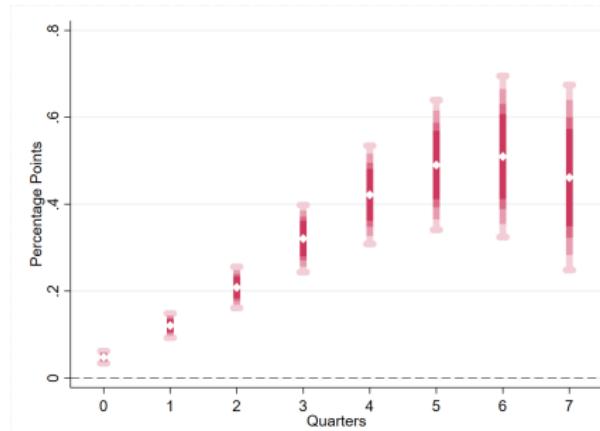
(a) Treasury 1Y Response to MP_t^{shock}



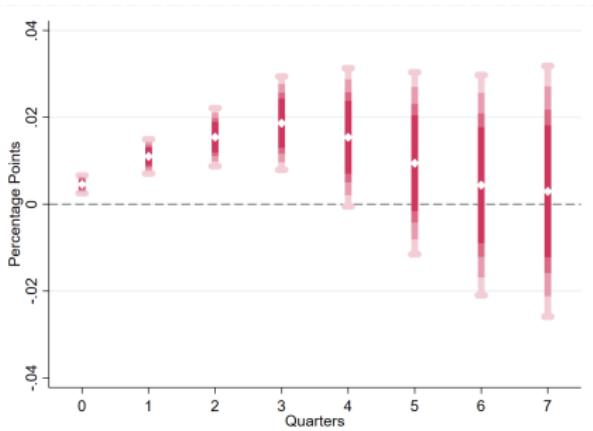
(b) Treasury 2Y Response to MP_t^{shock}

Interest Expense Rate. Equally Weighted. Top 50 Banks.

Figure: Interest Expense Rate. Equally Weighted. Top 50 Banks.



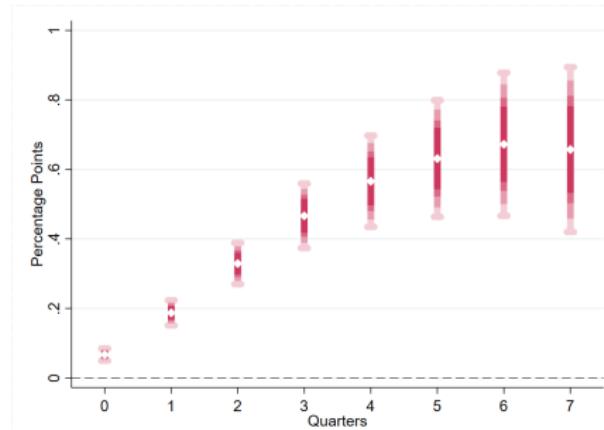
(a) Response to MP_t^{shock}



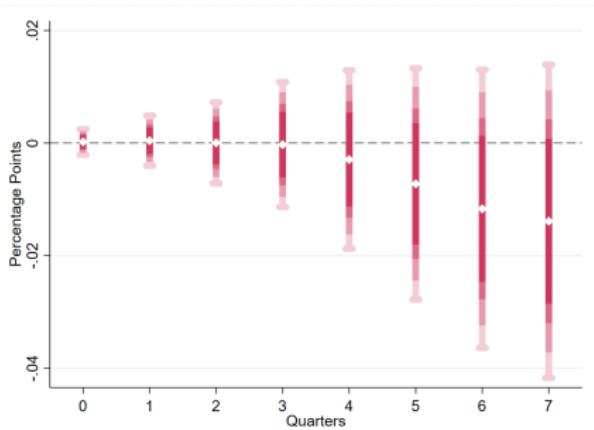
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Interest Income Rate. Equally Weighted. Top 50 Banks.

Figure: Interest Income Rate. Equally Weighted. Top 50 Banks.



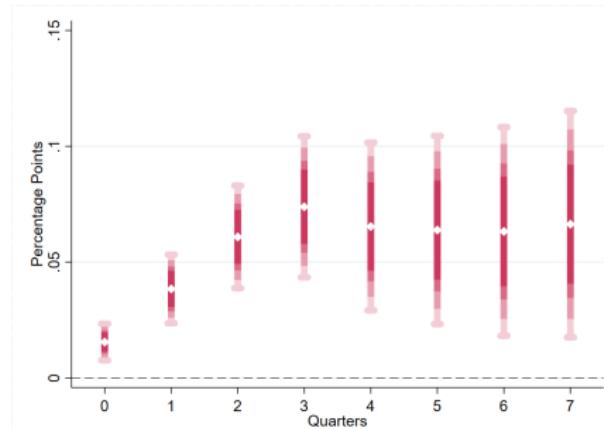
(a) Response to MP_t^{shock}



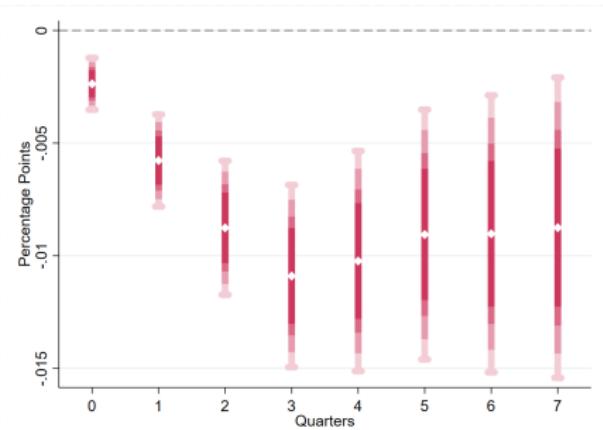
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Net Interest Income Rate. Equally Weighted. Top 50 Banks.

Figure: Net Interest Income Rate. Equally Weighted. Top 50 Banks.



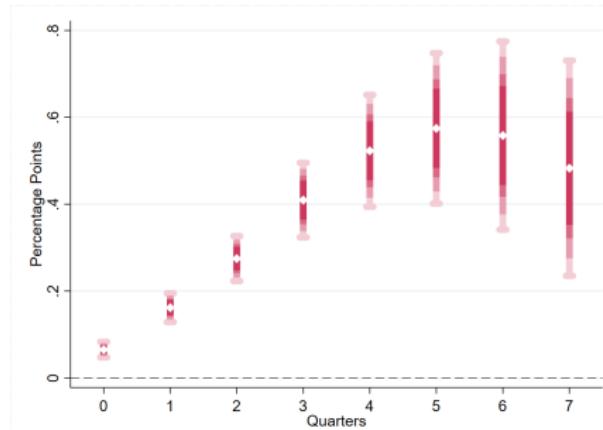
(a) Response to MP_t^{shock}



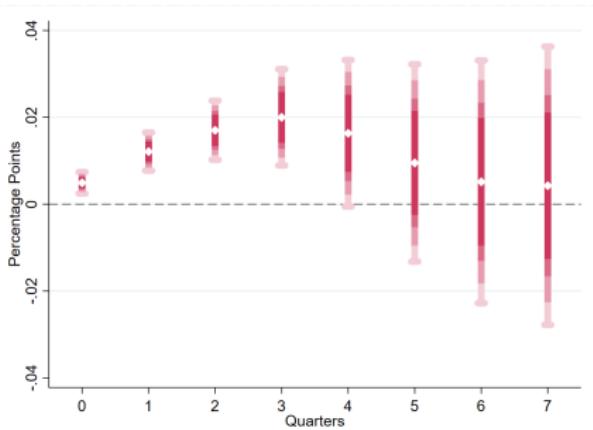
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Deposit Expense Rate. Equally Weighted. Top 50 Banks.

Figure: Deposit Expense Rate. Equally Weighted. Top 50 Banks.

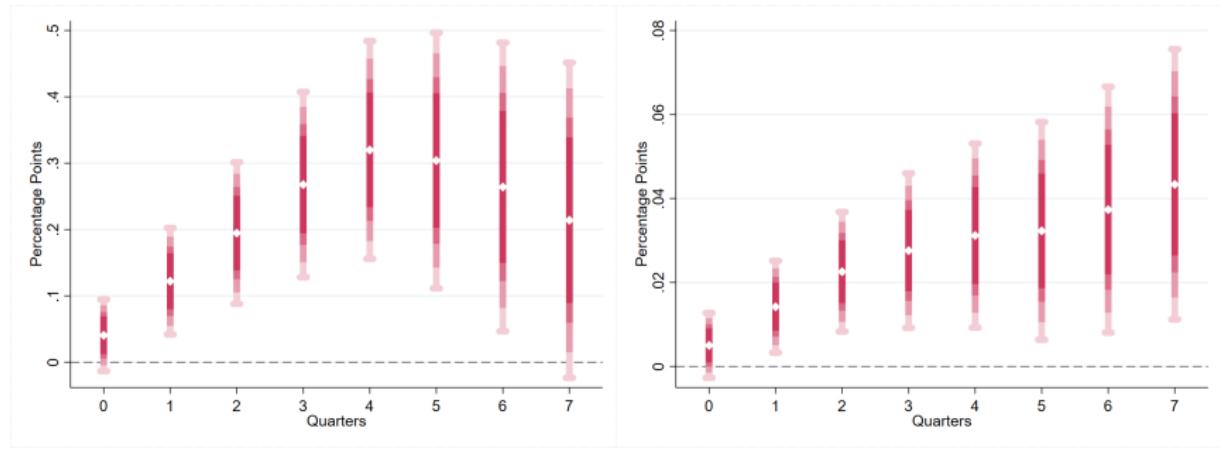


(a) Response to MP_t^{shock}



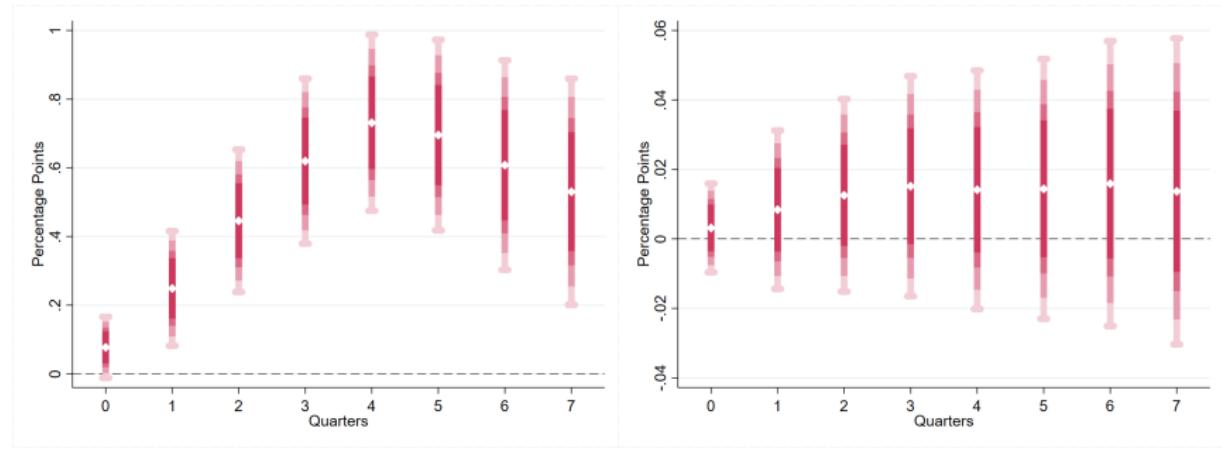
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: Saving Deposit Expense Rate. Equally Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Time Deposit Expense Rate. Equally Weighted. Top 50 Banks.

Figure: Time Deposit Expense Rate. Equally Weighted. Top 50 Banks.

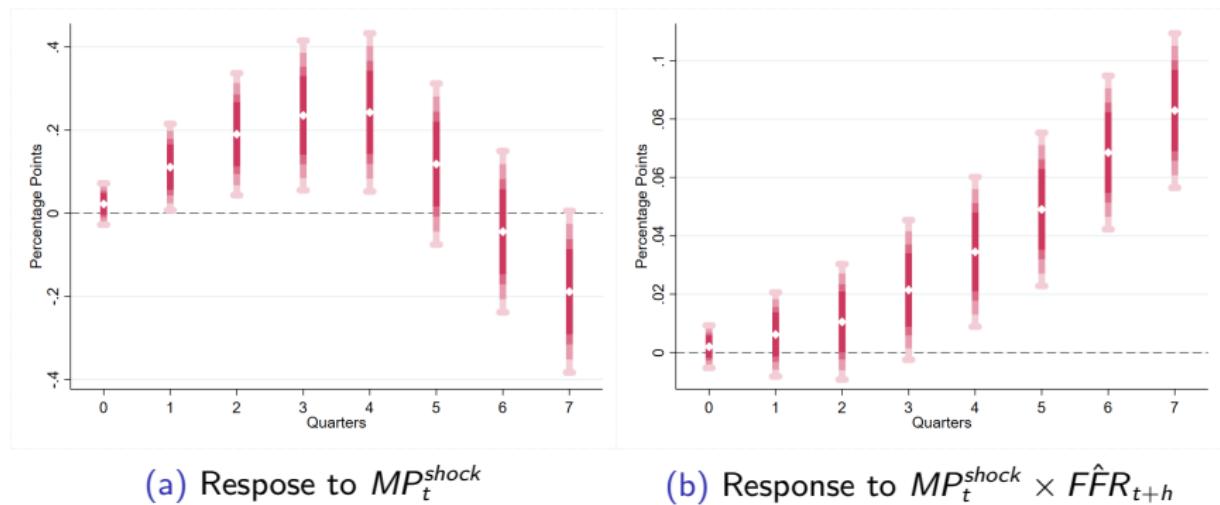


(a) Response to MP_t^{shock}

(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

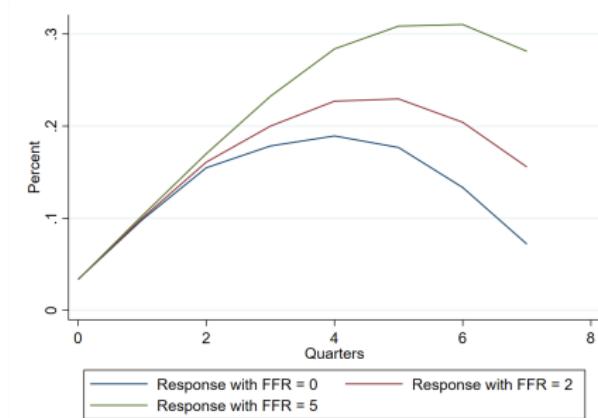
Transaction Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.

Figure: Transaction Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.

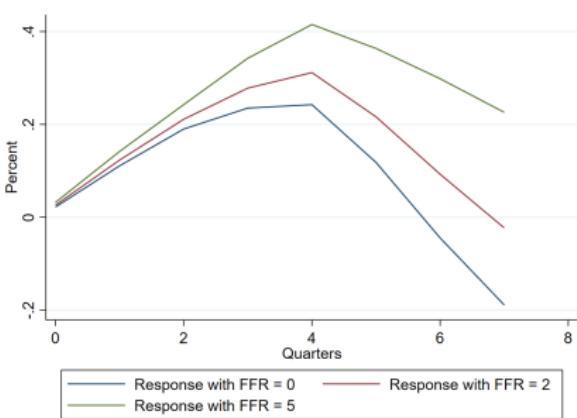


Transaction Deposit Expense Rate. Comparison with different initial FFR state.

Figure: Transaction Deposit Expense Rate. Comparison with different initial FFR state. Top 50 Banks.



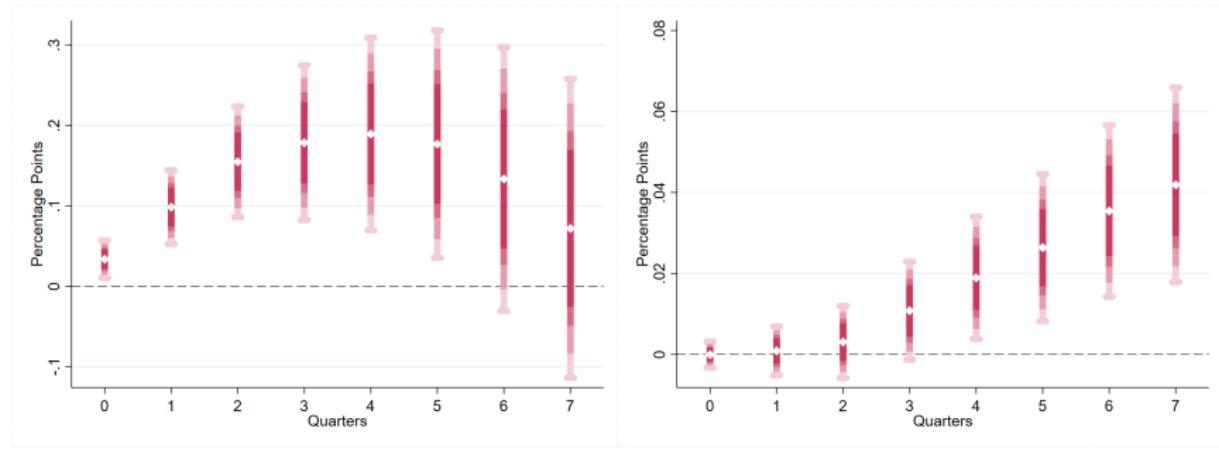
(a) Equally Weighted



(b) CPI Asset Weighted

Transaction Deposit Expense Rate. Equally Weighted. Top 50 Banks.

Figure: Transaction Deposit Expense Rate. Equally Weighted. Top 50 Banks.

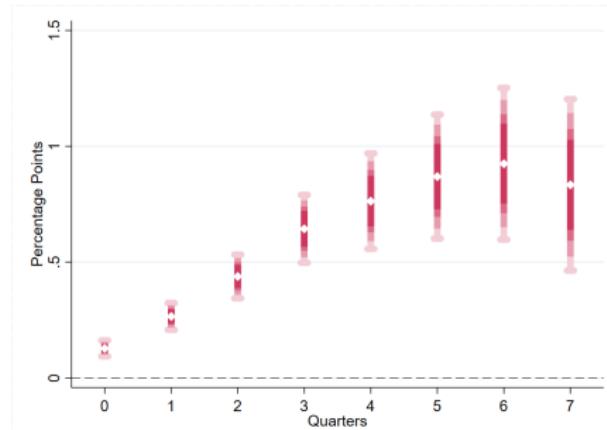


(a) Response to MP_t^{shock}

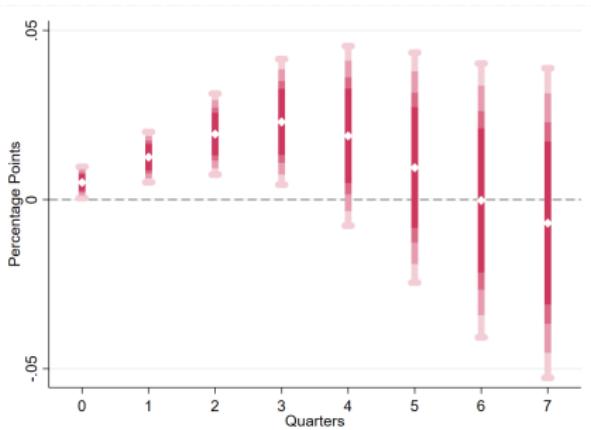
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Foreign Deposit Expense Rate. Equally Weighted. Top 50 Banks.

Figure: Foreign Deposit Expense Rate. Equally Weighted. Top 50 Banks.



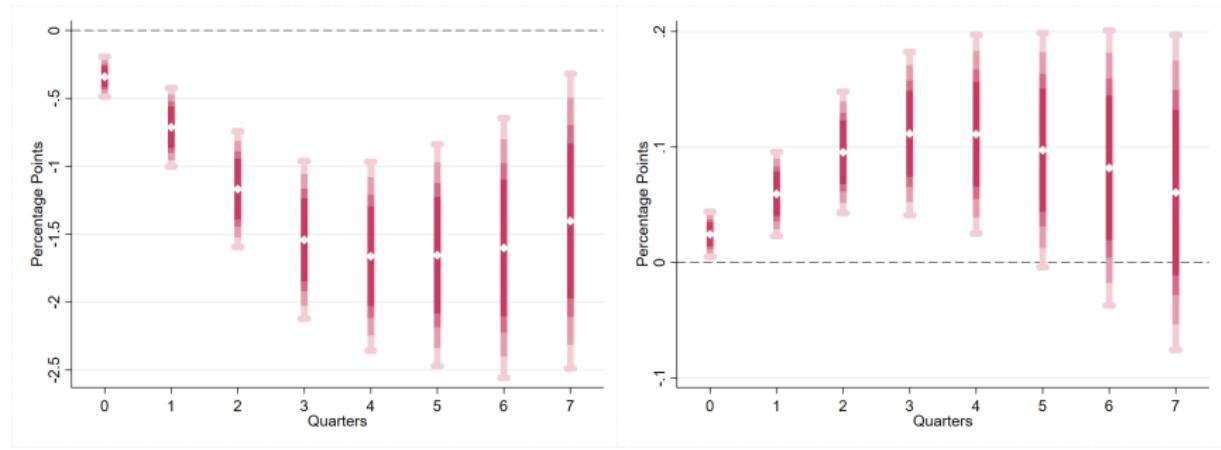
(a) Response to MP_t^{shock}



(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Saving Deposit Share of Liabilities. Equally Weighted. Top 50 Banks.

Figure: Saving Deposit share of liabilities. Equally Weighted. Top 50 Banks.

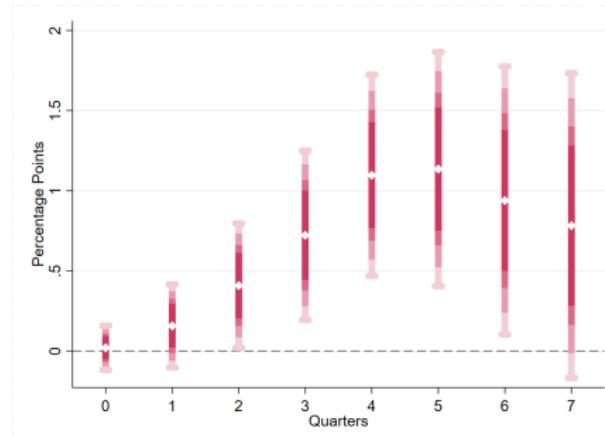


(a) Response to MP_t^{shock}

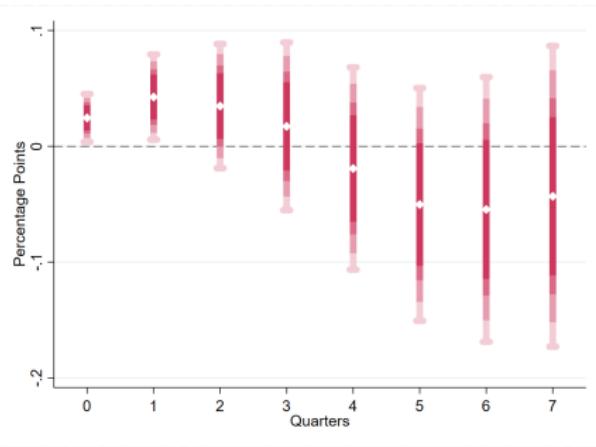
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Time Deposit Share of Liabilities. Equally Weighted. Top 50 Banks.

Figure: Time Deposit share of liabilities. Equally Weighted. Top 50 Banks.



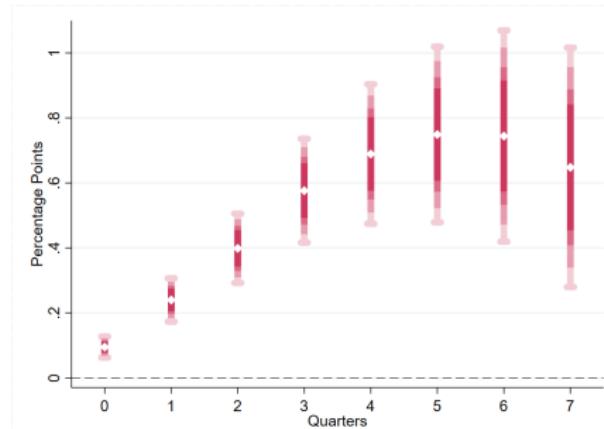
(a) Response to MP_t^{shock}



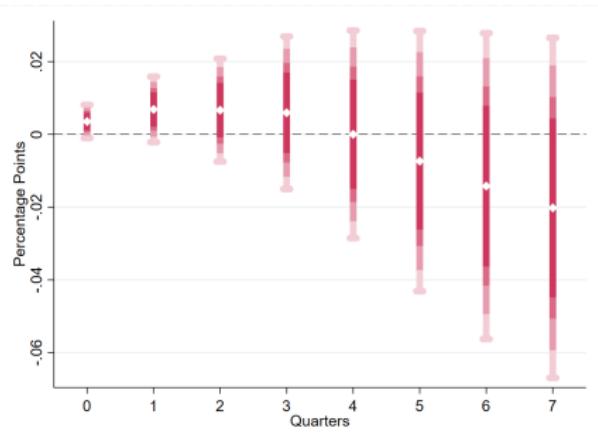
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

C&I Loan Income Rate. Equally Weighted. Top 50 Banks.

Figure: C&I Loan Income Rate. Equally Weighted. Top 50 Banks.



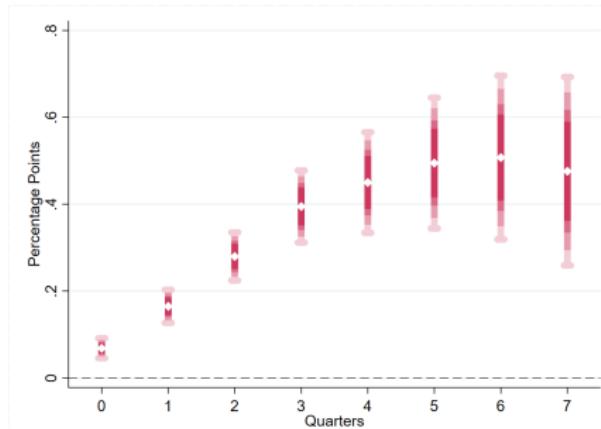
(a) Response to MP_t^{shock}



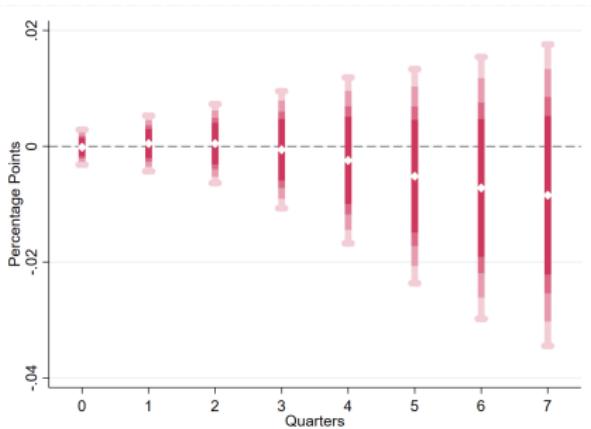
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Real Estate Loan Income Rate. Equally Weighted. Top 50 Banks.

Figure: Real Estate Loan Income Rate. Equally Weighted. Top 50 Banks.



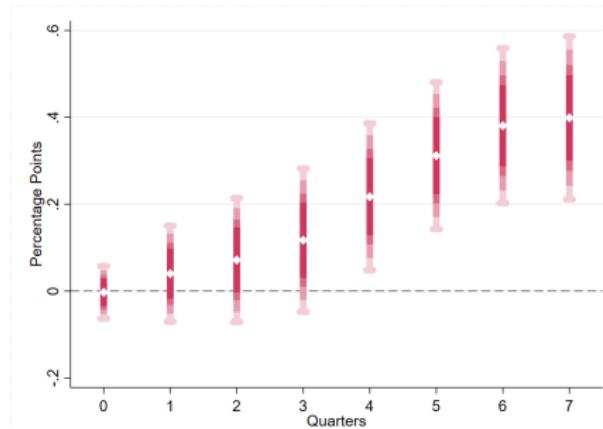
(a) Response to MP_t^{shock}



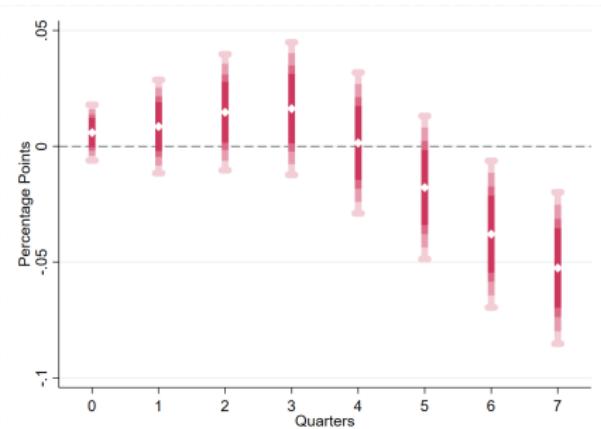
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Share of 3M to 1Y Loans. Equally Weighted. Top 50 Banks.

Figure: Share of 3M to 1Y Loans. Equally Weighted. Top 50 Banks.



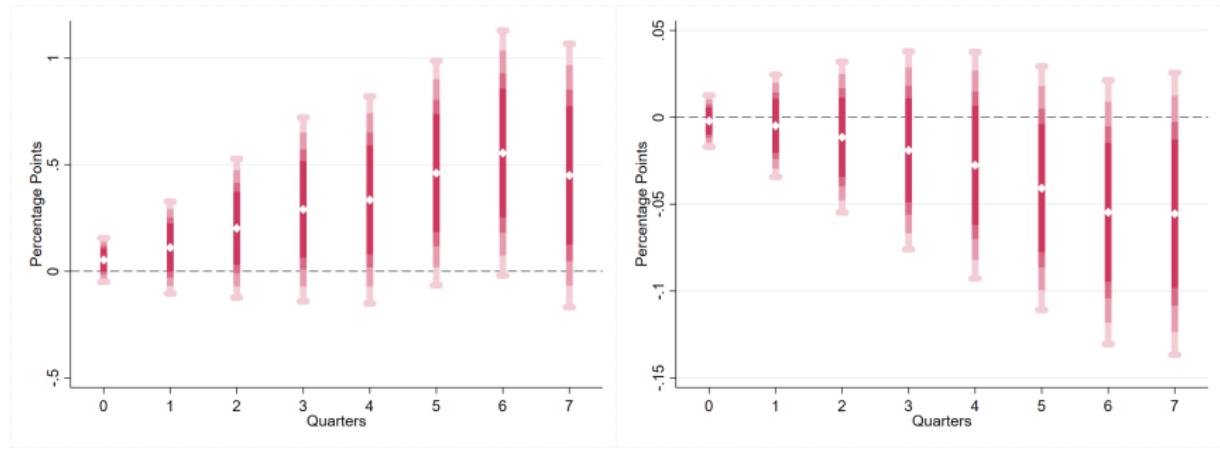
(a) Response to MP_t^{shock}



(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Share of 3M to 1Y Loans. CPI Asset Weighted. Top 50 Banks.

Figure: Share of 3M to 1Y Loans. CPI Asset Weighted. Top 50 Banks.

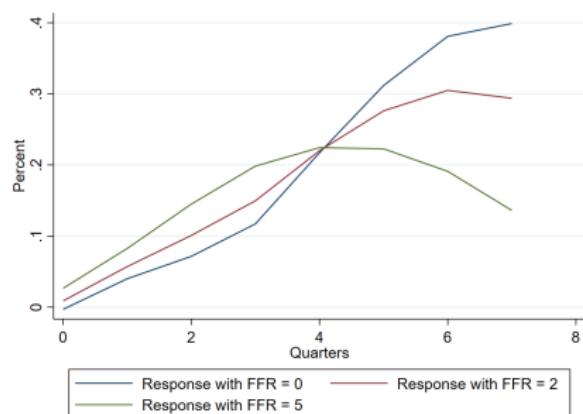


(a) Response to MP_t^{shock}

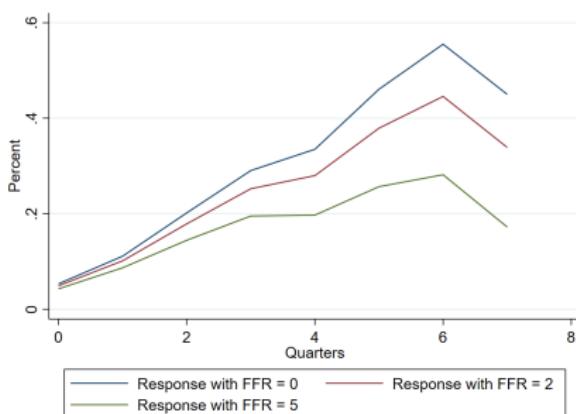
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Share of 3M to 1Y Loans. Comparison with different initial FFR state.

Figure: Share of 3M to 1Y Loans. Comparison with different initial FFR state. Top 50 Banks.



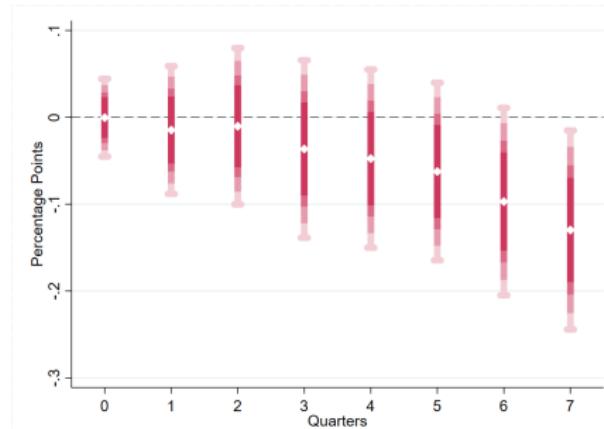
(a) Equally Weighted



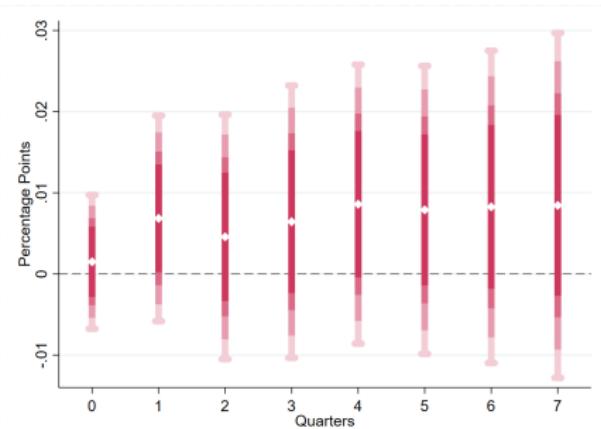
(b) CPI Asset Weighted

Share of over 15Y Loans. Equally Weighted. Top 50 Banks.

Figure: Share of over 15Y Loans. Equally Weighted. Top 50 Banks.

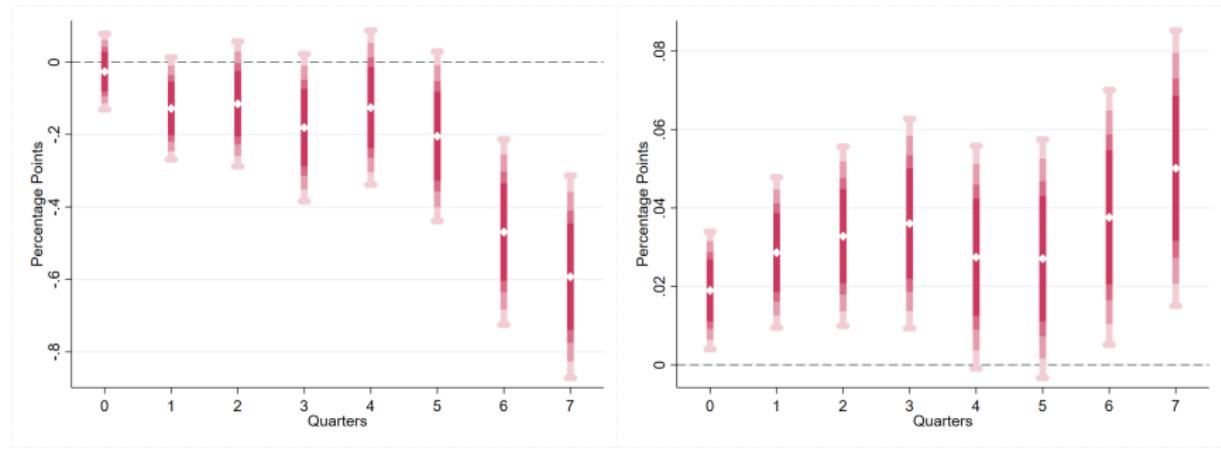


(a) Response to MP_t^{shock}



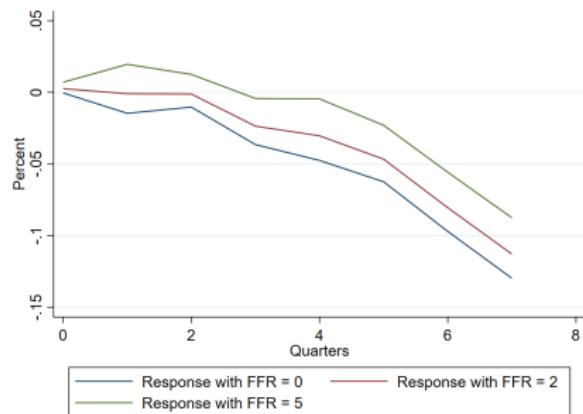
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: Share of over 15Y Loans. CPI Asset Weighted. Top 50 Banks.

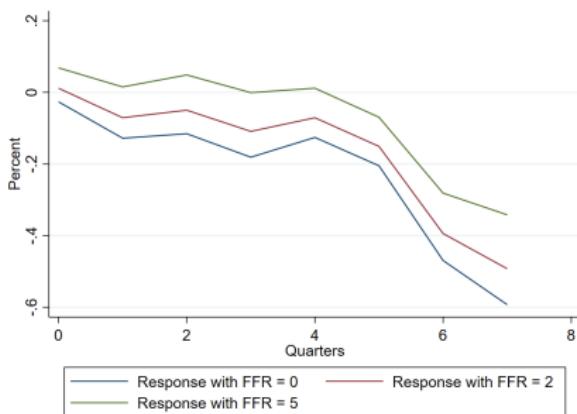
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Share of over 15Y Loans. Comparison with different initial FFR state.

Figure: Share of over 15Y Loans. Comparison with different initial FFR state. Top 50 Banks.

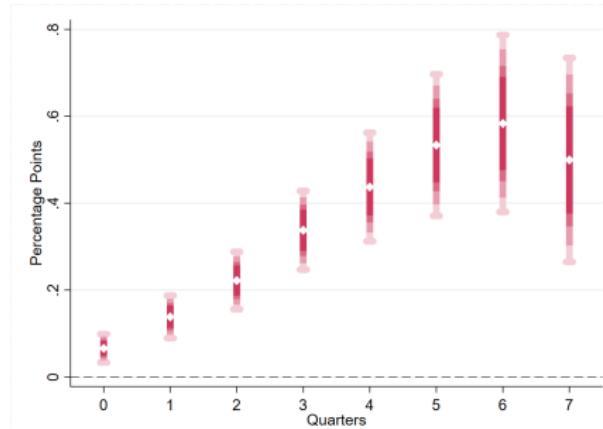


(a) Equally Weighted

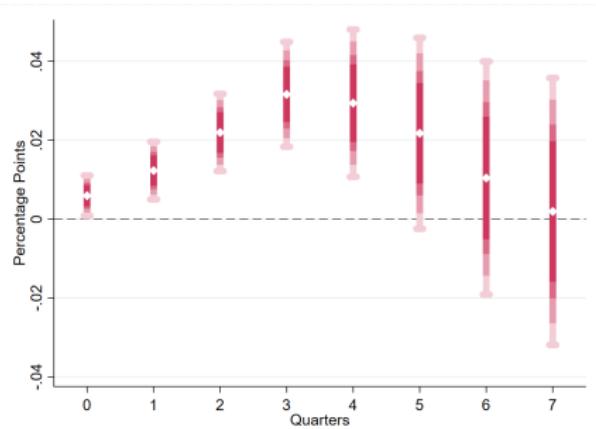


(b) CPI Asset Weighted

Figure: Interest Expense Rate. CPI Asset Weighted. Medium Banks.



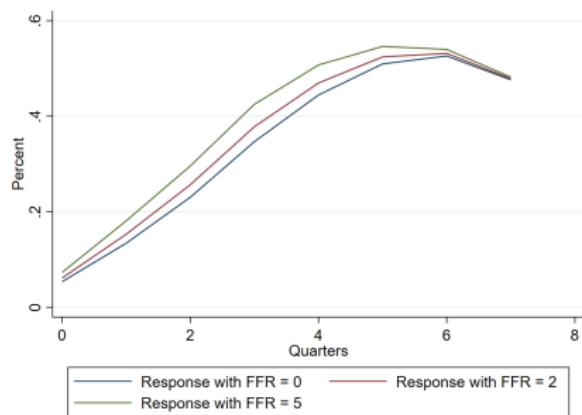
(a) Response to MP_t^{shock}



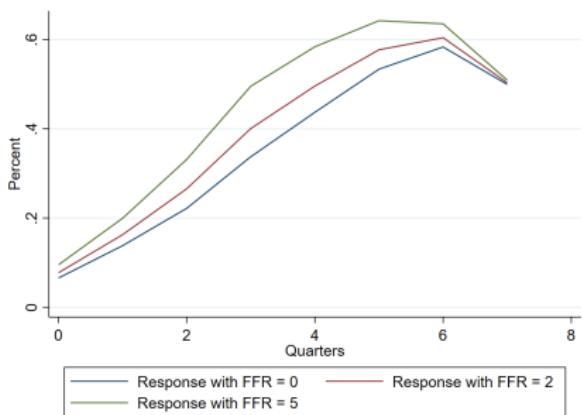
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Interest Expense Rate. Comparison with different initial FFR state.

Figure: Interest Expense Rate. Comparison with different initial FFR state.
Medium Banks.

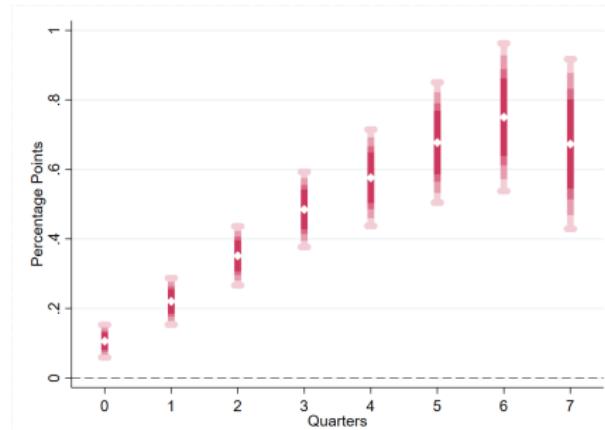


(a) Equally Weighted

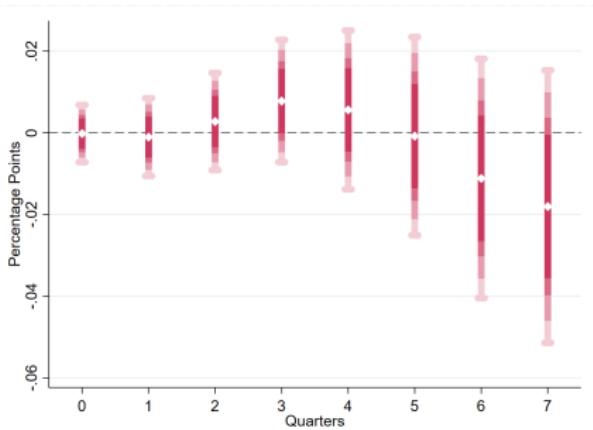


(b) CPI Asset Weighted

Figure: Interest Income Rate. CPI Asset Weighted. Medium Banks.



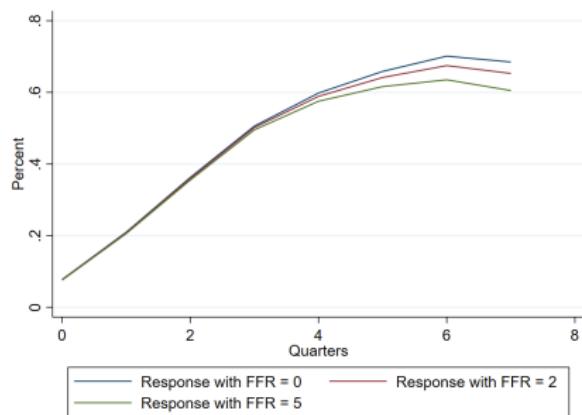
(a) Response to MP_t^{shock}



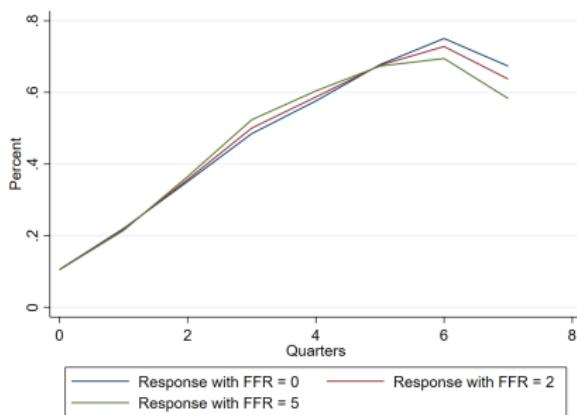
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Interest Income Rate. Comparison with different initial FFR state.

Figure: Interest Income Rate. Comparison with different initial FFR state. Medium Banks.

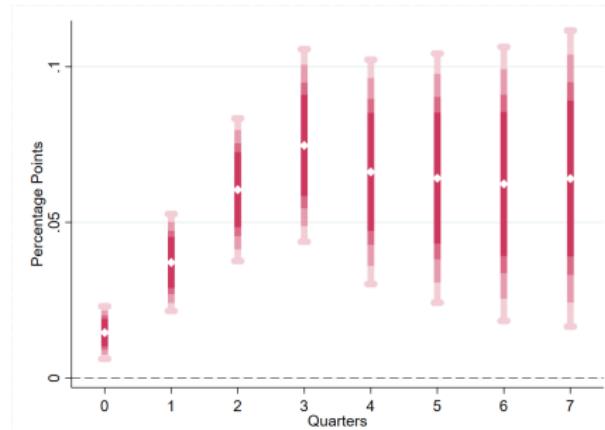
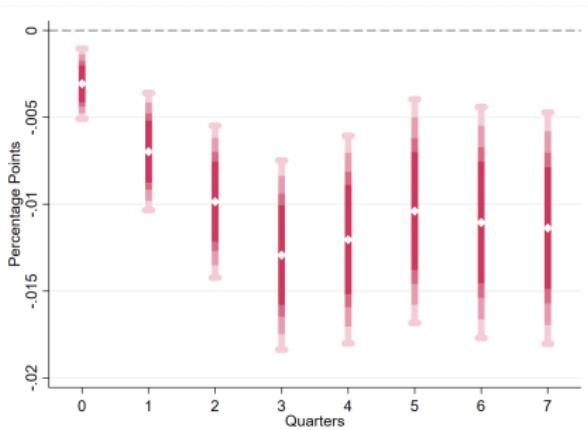


(a) Equally Weighted



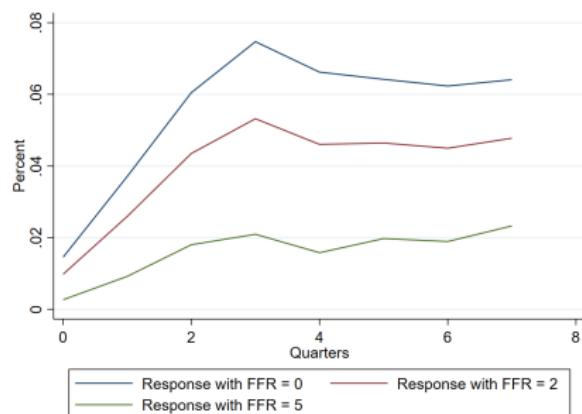
(b) CPI Asset Weighted

Figure: Net Interest Income Rate. CPI Asset Weighted. Medium Banks.

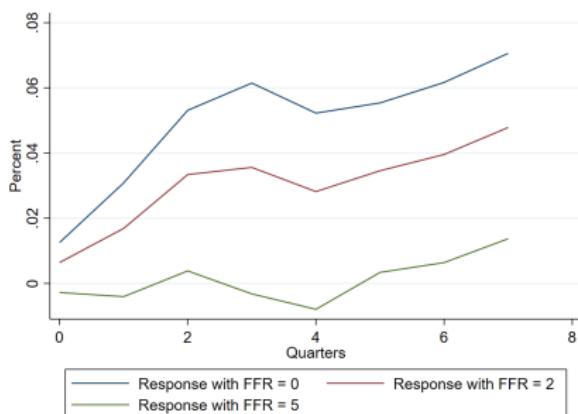
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Net Interest Income Rate. Comparison with different initial FFR state.

Figure: Net Interest Income Rate. Comparison with different initial FFR state.
Medium Banks.

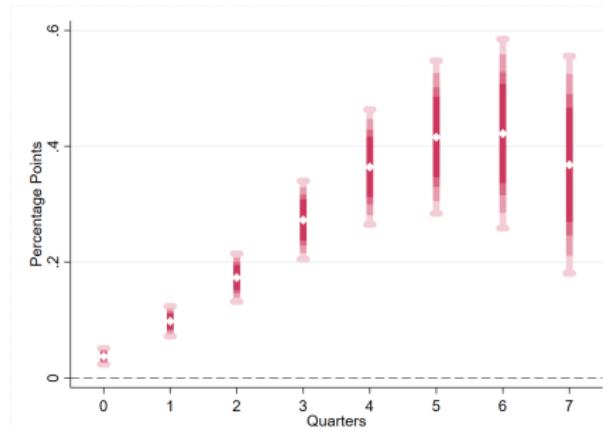
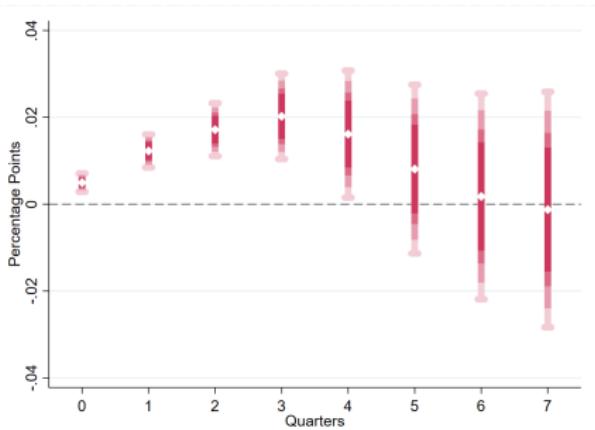


(a) Equally Weighted



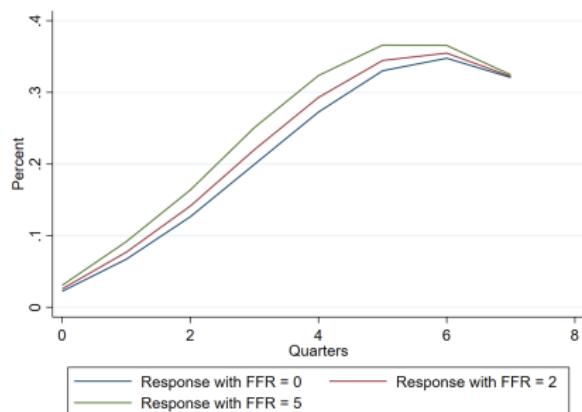
(b) CPI Asset Weighted

Figure: Interest Expense Rate. CPI Asset Weighted. Small Banks.

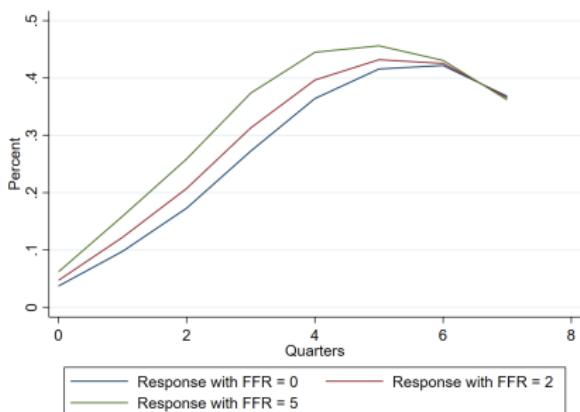
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Interest Expense Rate. Comparison with different initial FFR state.

Figure: Interest Expense Rate. Comparison with different initial FFR state. Small Banks.

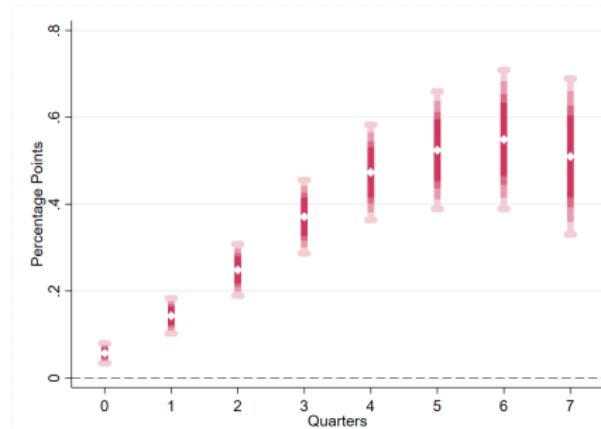
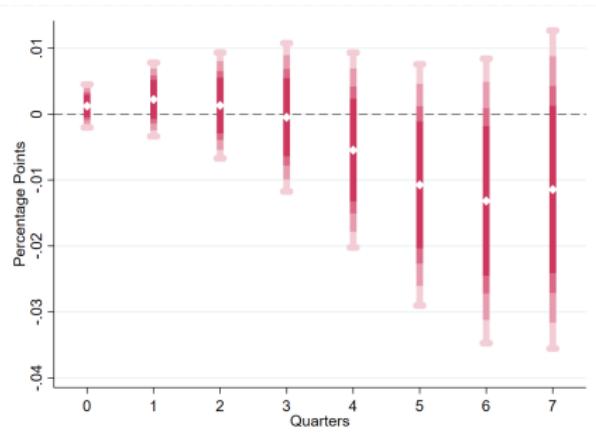


(a) Equally Weighted



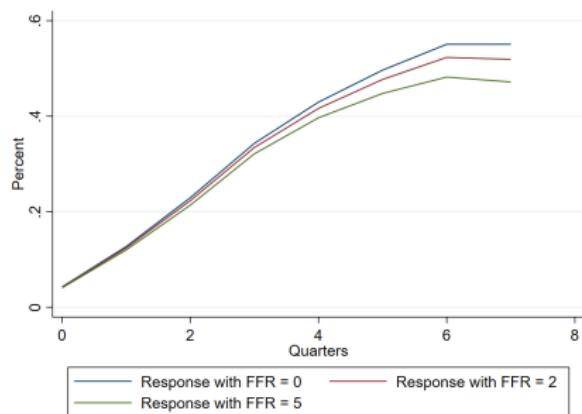
(b) CPI Asset Weighted

Figure: Interest Income Rate. CPI Asset Weighted. Small Banks.

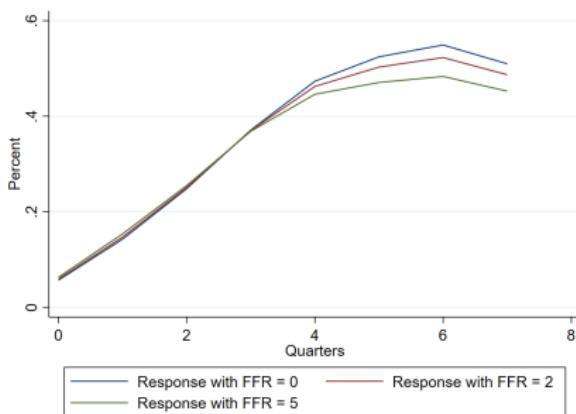
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Interest Income Rate. Comparison with different initial FFR state.

Figure: Interest Income Rate. Comparison with different initial FFR state. Small Banks.

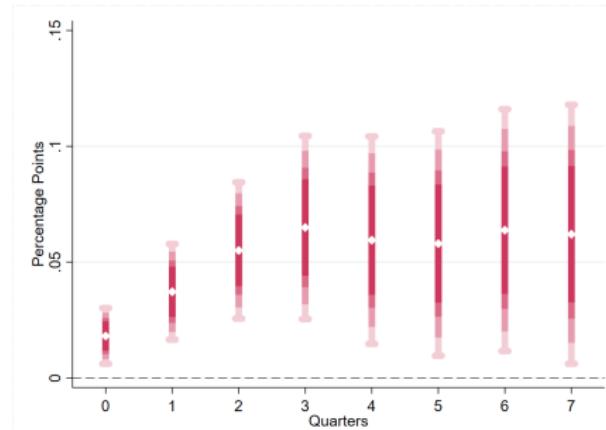
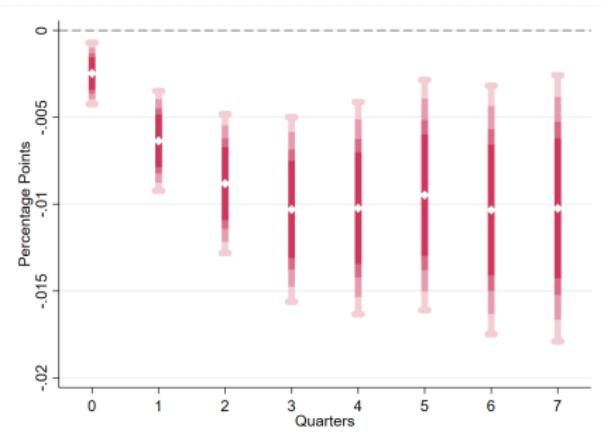


(a) Equally Weighted



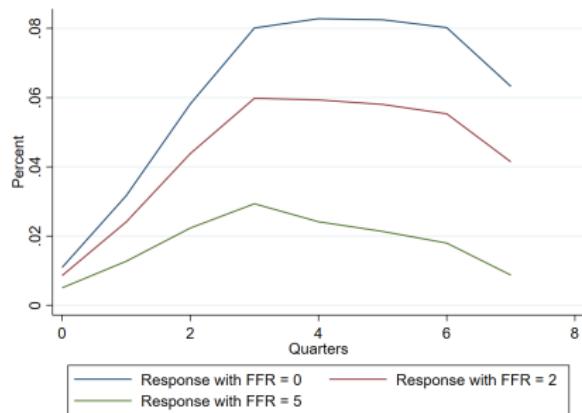
(b) CPI Asset Weighted

Figure: Net Interest Income Rate. CPI Asset Weighted. Small Banks.

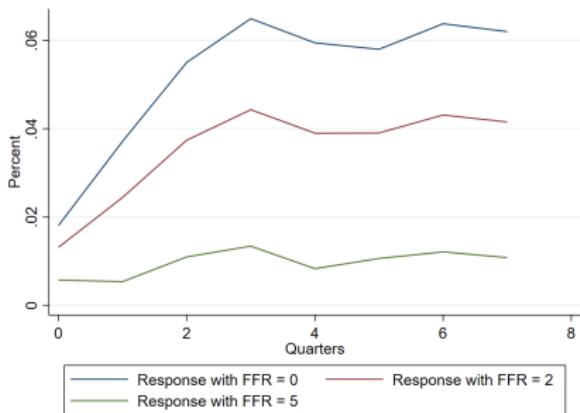
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Net Interest Income Rate. Comparison with different initial FFR state.

Figure: Net Interest Income Rate. Comparison with different initial FFR state.
Small Banks.

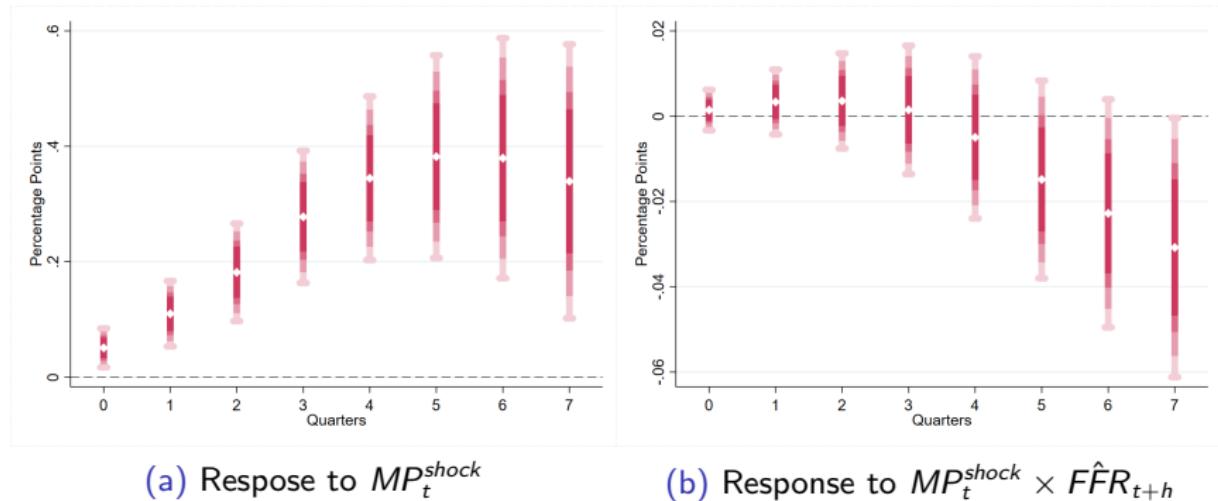


(a) Equally Weighted



(b) CPI Asset Weighted

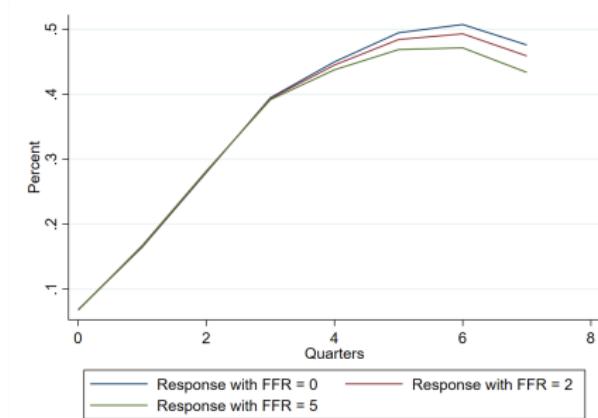
Figure: Real Estate Loan Income Rate. CPI Asset Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

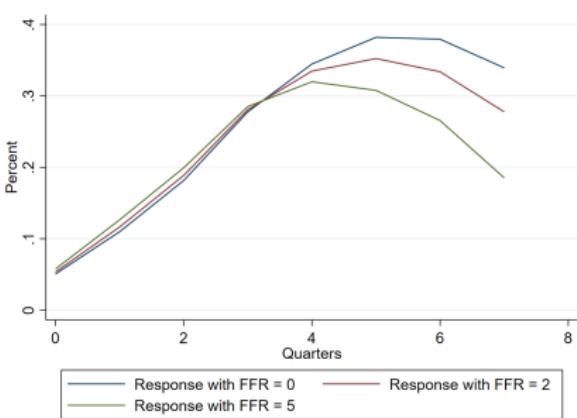
- Because the duration of these loans is quite long the stock-flow problem is particularly problematic here (if we had new loans only the rate respond more)

Real Estate Loan Income Rate. Comparison with different initial FFR state.

Figure: Real Estate Loan Income Rate. Comparison with different initial FFR state. Top 50 Banks.



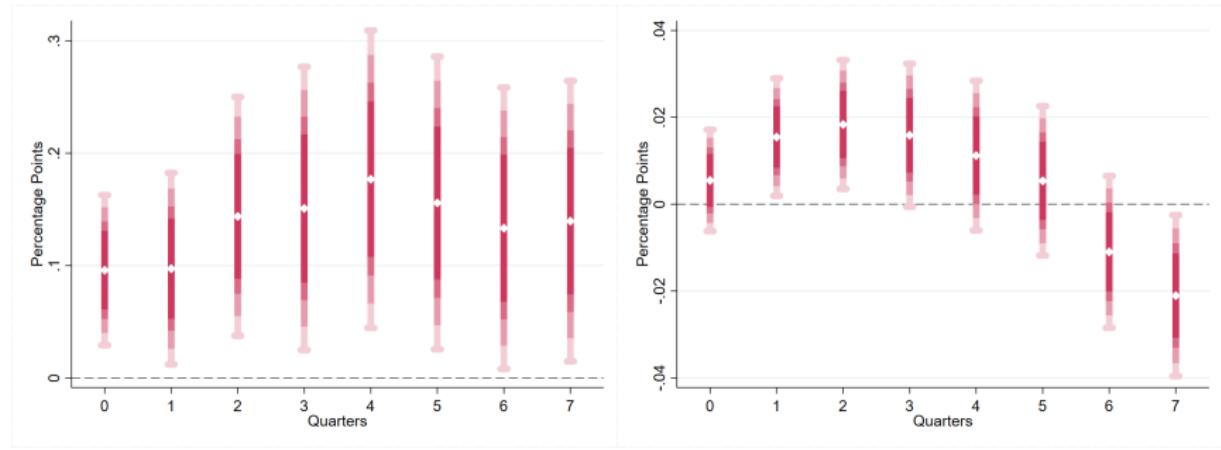
(a) Equally Weighted



(b) CPI Asset Weighted

MMDA 50K. CPI Asset Weighted. Top 50 Banks.

Figure: MMDA 50K. CPI Asset Weighted. Top 50 Banks.

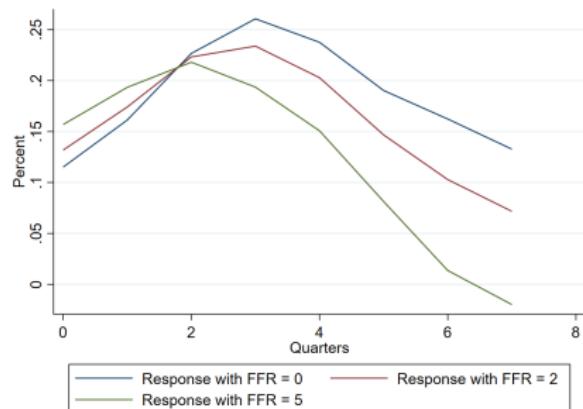


(a) Response to MP_t^{shock}

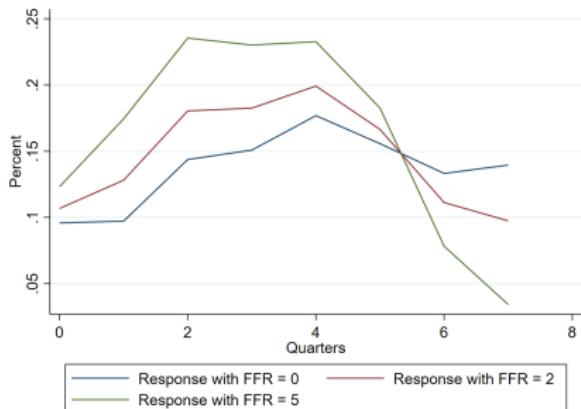
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

MMDA 50K. Comparison with different initial FFR state.

Figure: MMDA 50K. Comparison with different initial FFR state. Top 50 Banks.



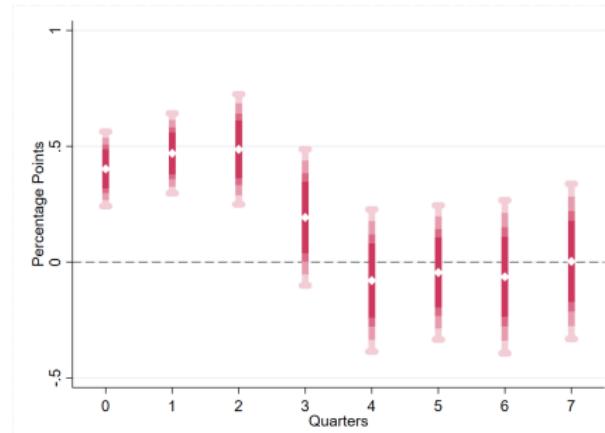
(a) Equally Weighted



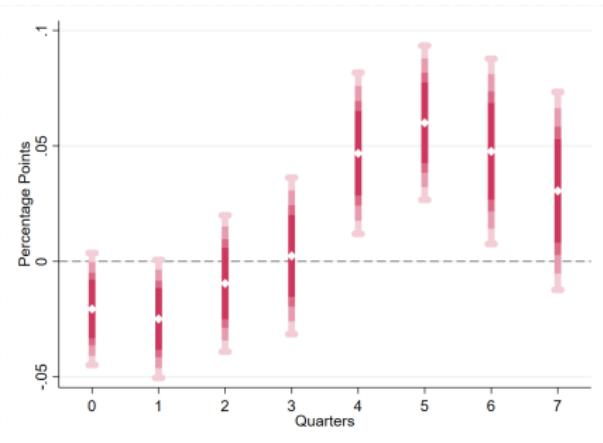
(b) CPI Asset Weighted

12 Month CD 10K. CPI Asset Weighted. Top 50 Banks.

Figure: 12 Month CD 10K. CPI Asset Weighted. Top 50 Banks.



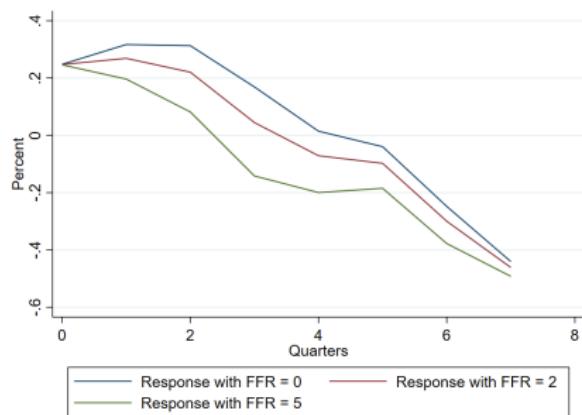
(a) Response to MP_t^{shock}



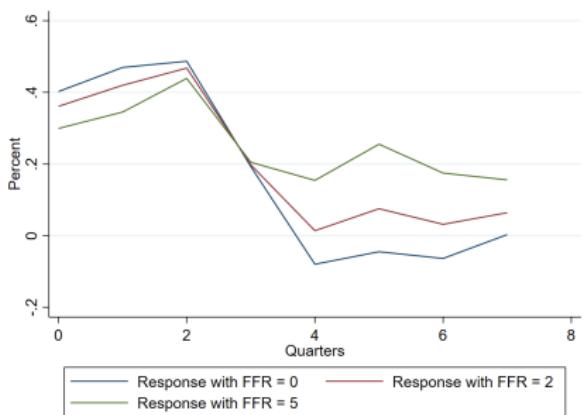
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

12 Month CD 10K. Comparison with different initial FFR state.

Figure: 12 Month CD 10K. Comparison with different initial FFR state. Top 50 Banks.



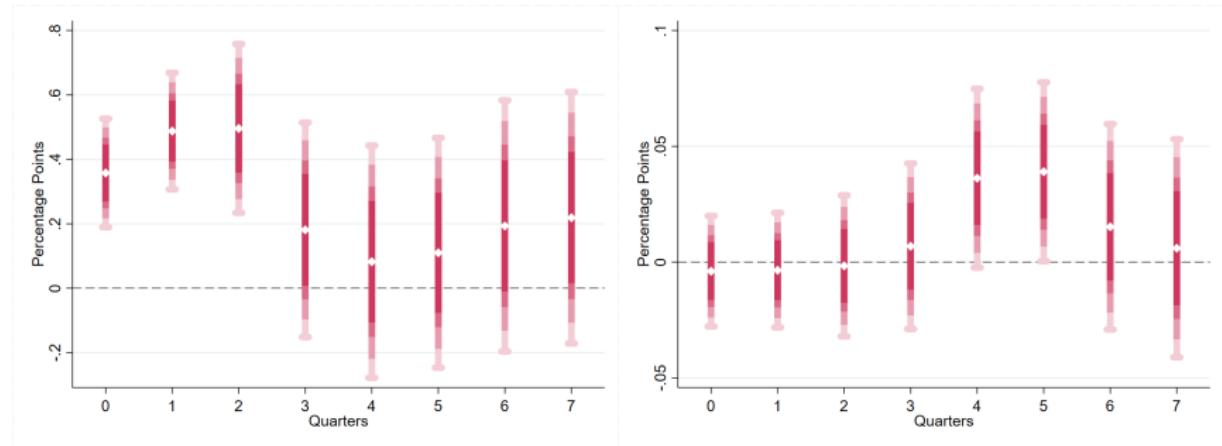
(a) Equally Weighted



(b) CPI Asset Weighted

12 Month CD 100K. CPI Asset Weighted. Top 50 Banks.

Figure: 12 Month CD 100K. CPI Asset Weighted. Top 50 Banks.

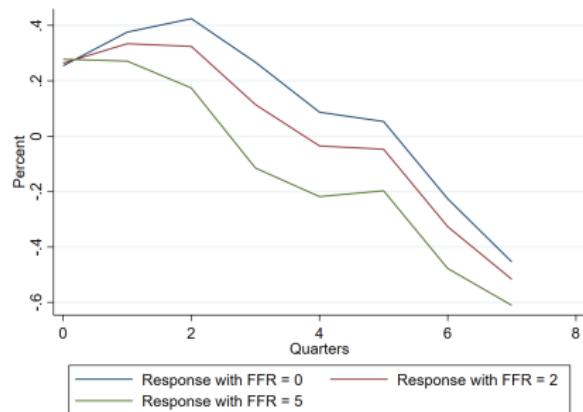


(a) Response to MP_t^{shock}

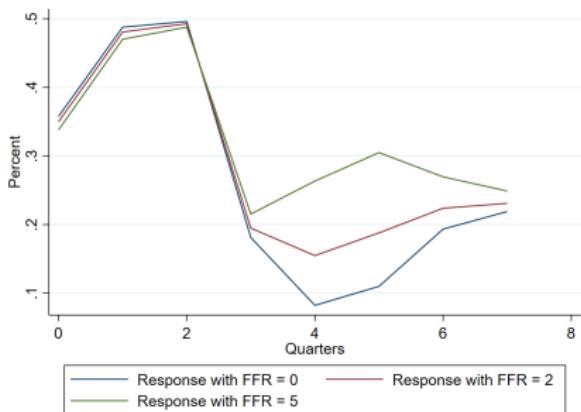
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

12 Month CD 100K. Comparison with different initial FFR state.

Figure: 12 Month CD 100K. Comparison with different initial FFR state. Top 50 Banks.

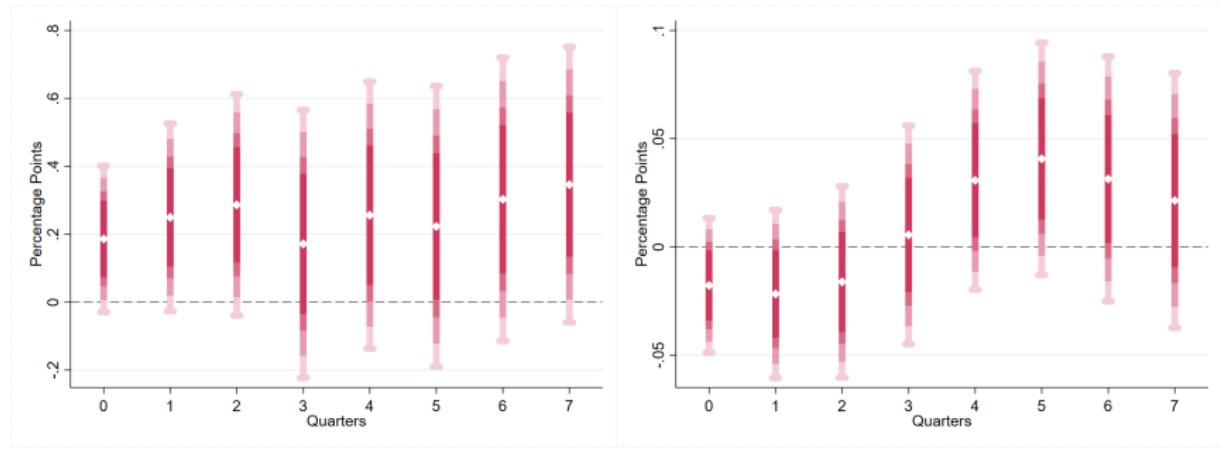


(a) Equally Weighted



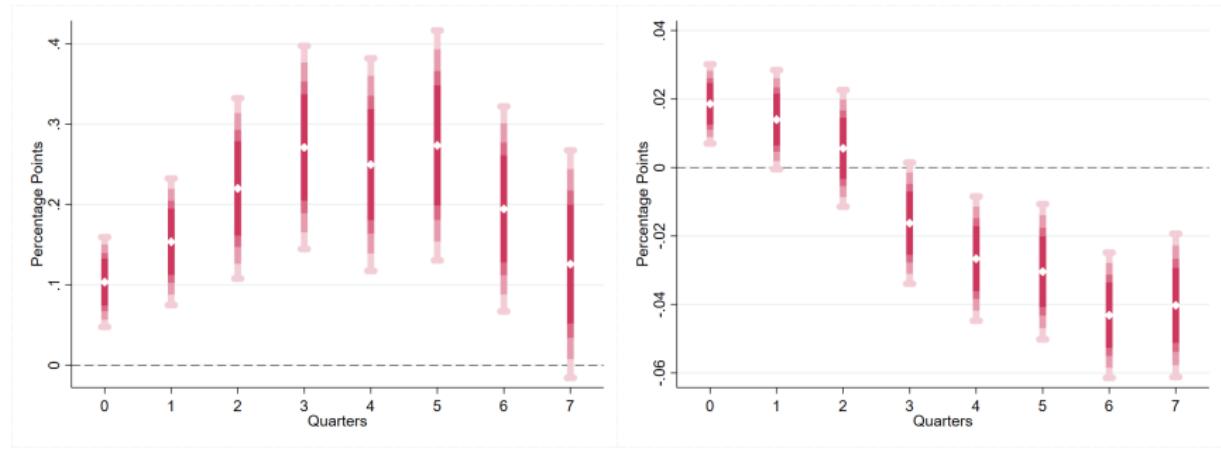
(b) CPI Asset Weighted

Figure: 175 15 Years Home Mortgage. Equally Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

MMDA 25K. Equally Weighted. Top 50 Banks.

Figure: MMDA 25K. Equally Weighted. Top 50 Banks.

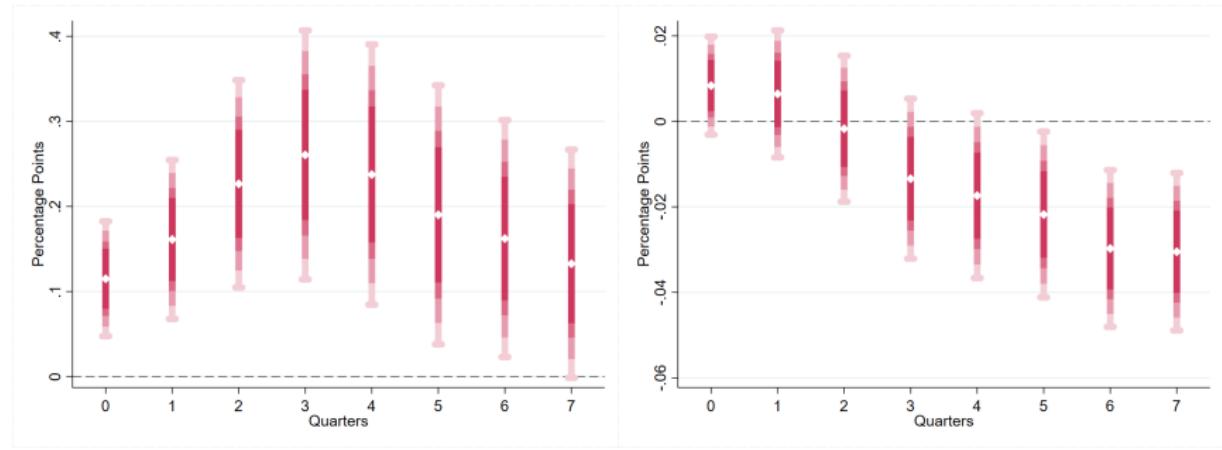


(a) Response to MP_t^{shock}

(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

MMDA 50K. Equally Weighted. Top 50 Banks.

Figure: MMDA 50K. Equally Weighted. Top 50 Banks.

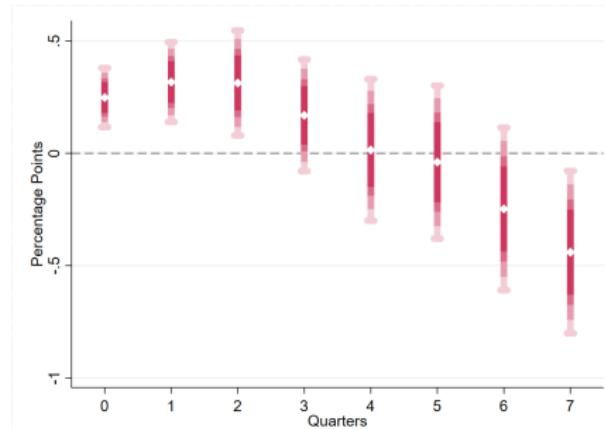


(a) Response to MP_t^{shock}

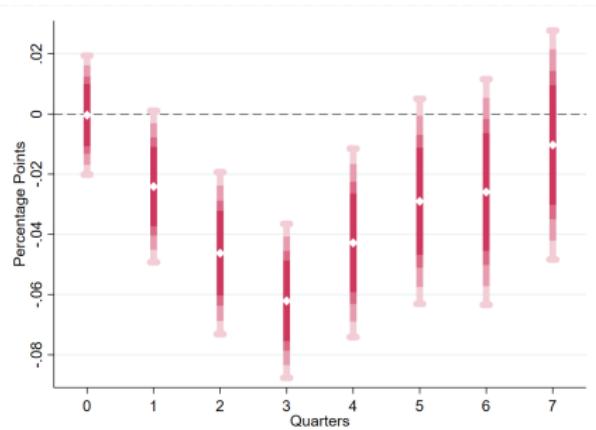
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

12M CD 10K. Equally Weighted. Top 50 Banks.

Figure: 12 Month CD 10K. Equally Weighted. Top 50 Banks.

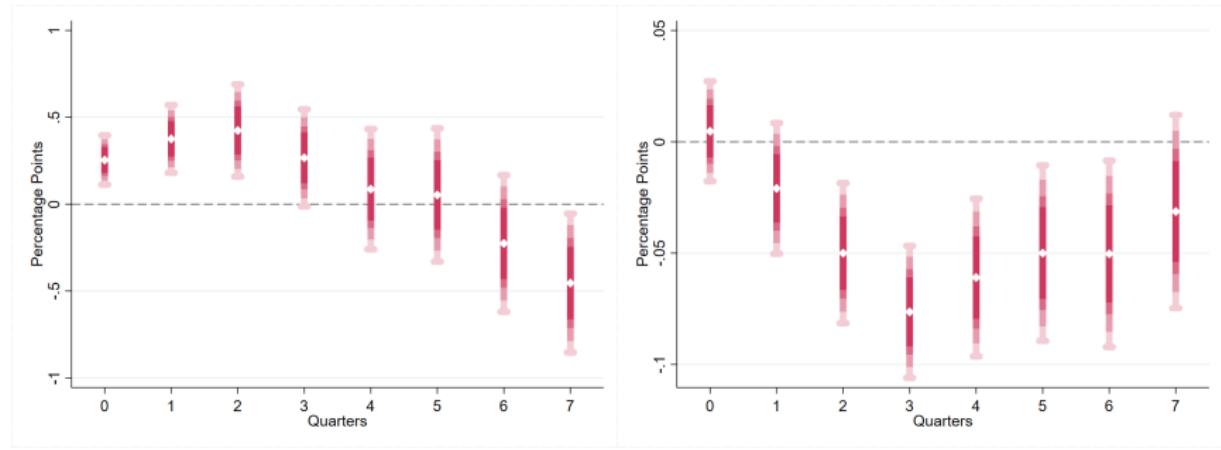


(a) Response to MP_t^{shock}



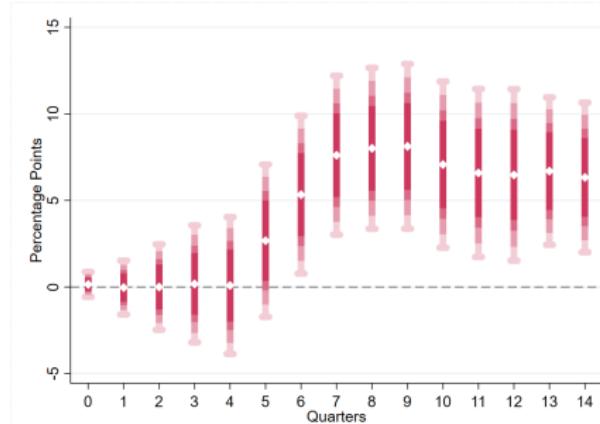
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: 12 Month CD 100K. Equally Weighted. Top 50 Banks.

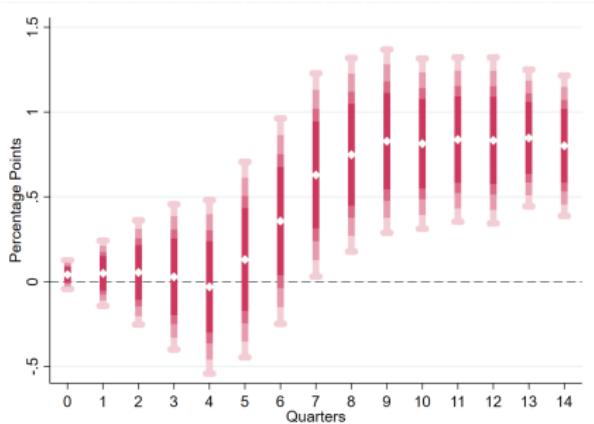
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Macro IRFs to Fed Funds Shock.

Figure: Macro IRFs to FED Funds Shock.



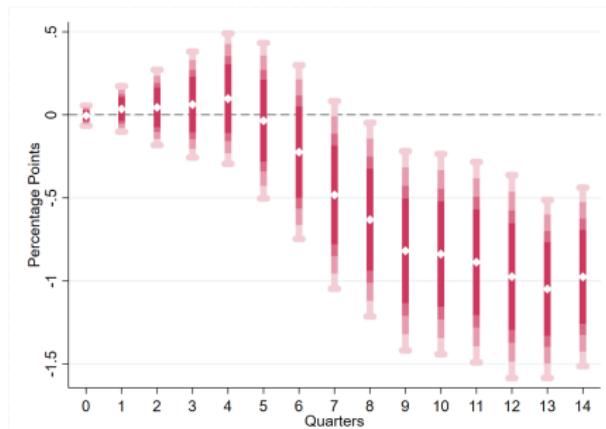
(a) Ratio Bank Short Term to Long Term
Loans Response to MP_t^{shock}



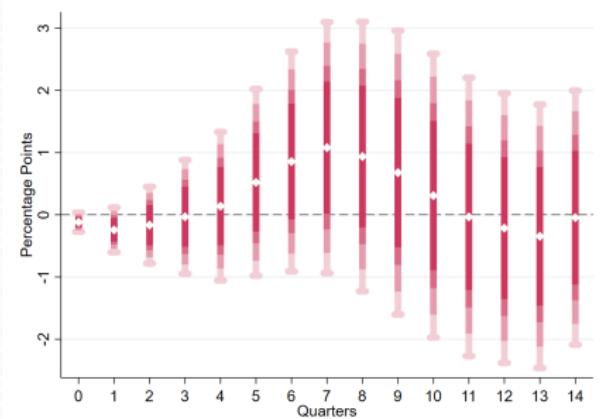
(b) Short Term Bank Loans Response to
 MP_t^{shock}

Macro IRFs to Fed Funds Shock.

Figure: Macro IRFs to FED Funds Shock.



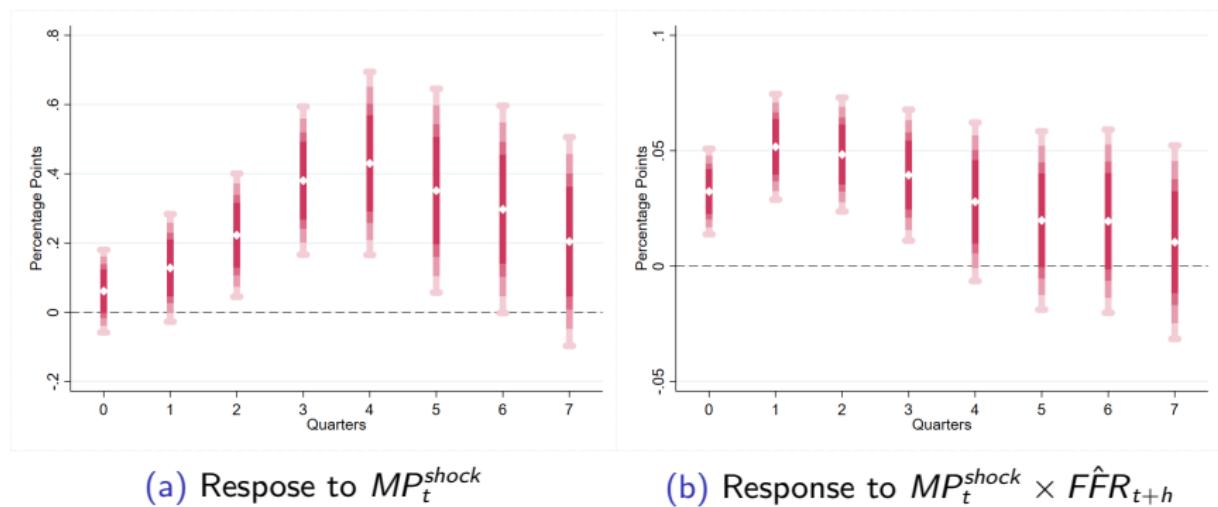
(a) Loan Term Loans Response to MP_t^{shock}



(b) Trade Credit Response to MP_t^{shock}

Interest Expense Rate. CPI Asset Weighted. Top 50 Banks. Non Smoothed.

Figure: Interest Expense Rate. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}

(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Asymmetric Pass-Through: Deposit Rates rise like feathers and fall like rockets.

Figure: 3 Months Money Market Deposit Account

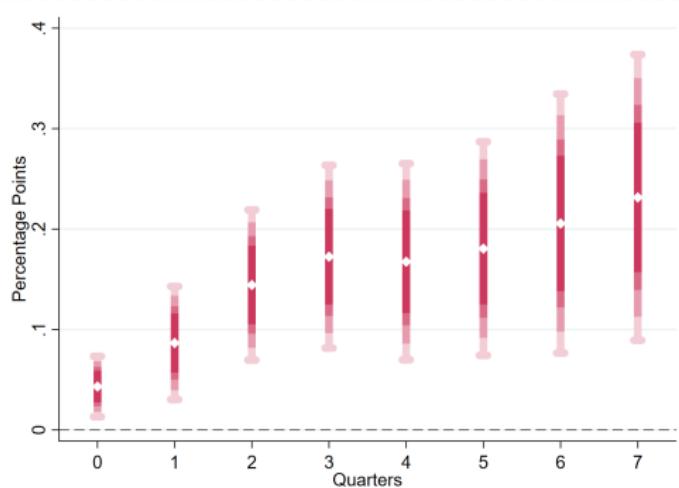
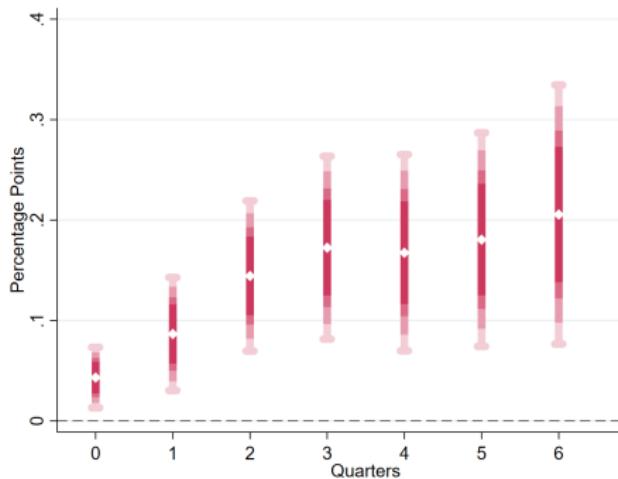
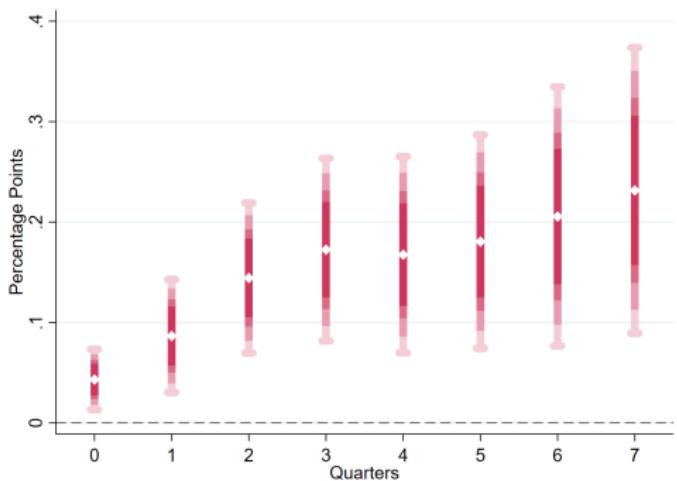
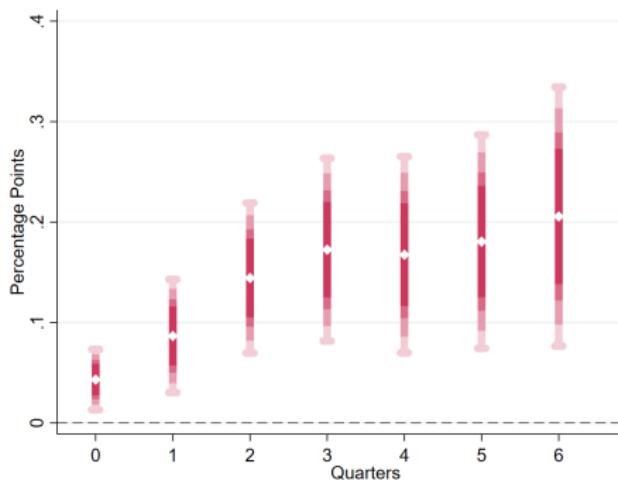
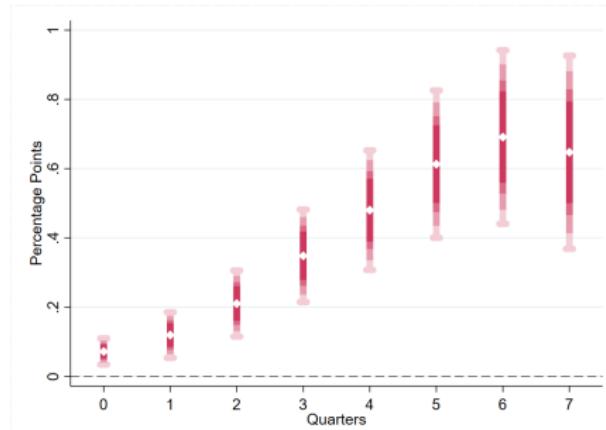
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times FFR_{t+h}$

Figure: 3 Months Money Market Deposit Account

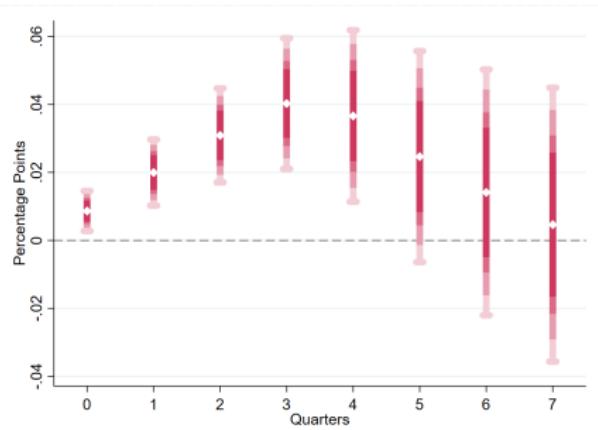
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times FFR_{t+h}$

Foreign Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.

Figure: Foreign Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}

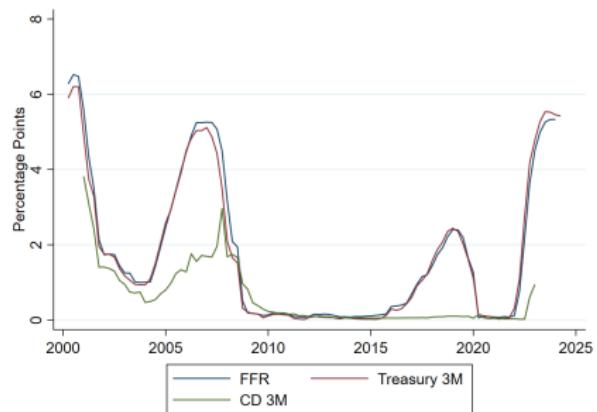


(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

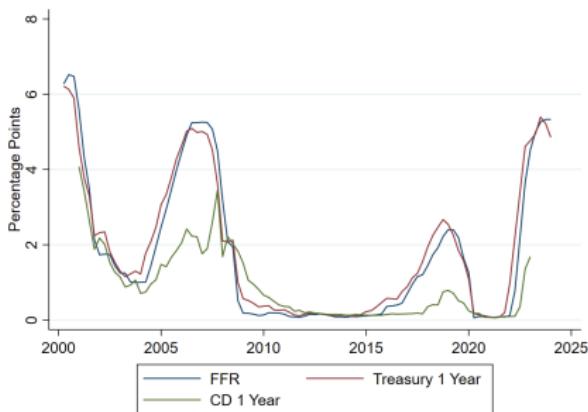
▶ back ▶ back

Historical Rates at Comparison

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



(a) 3 Months Maturity

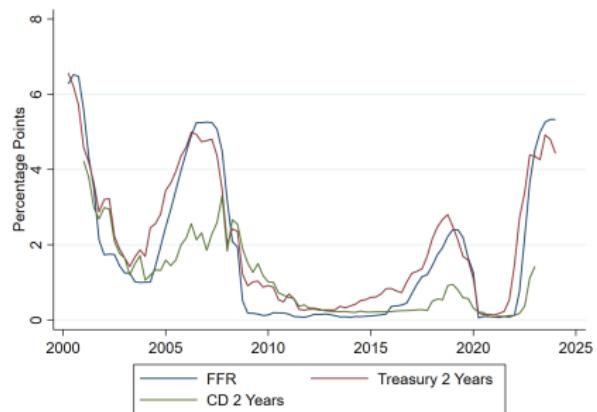


(b) 1 Year Maturity

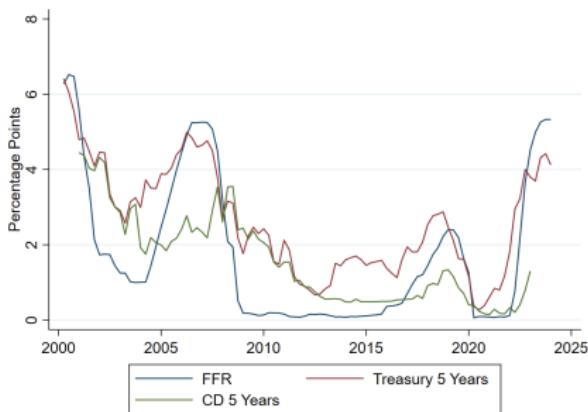
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Historical Rates at Comparison

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



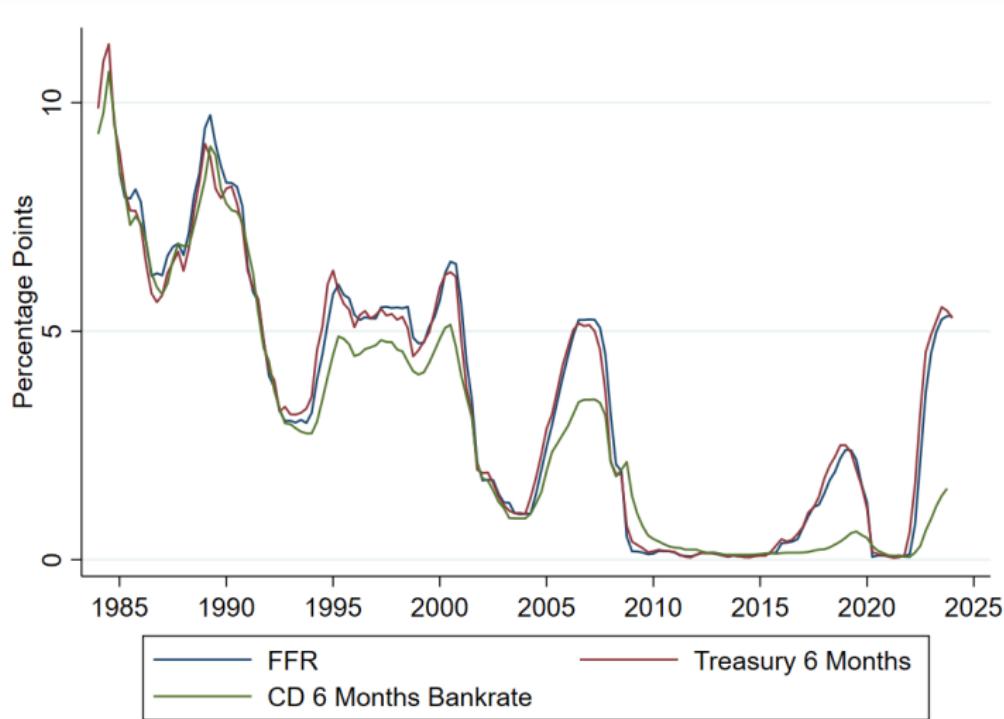
(a) 2 Years Maturity



(b) 5 Years Maturity

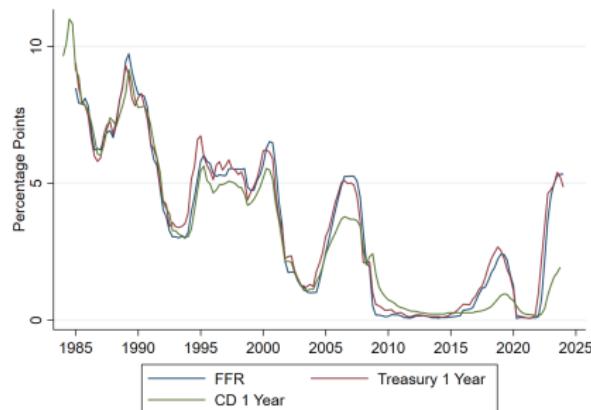
Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



(a) 1 Year Maturity

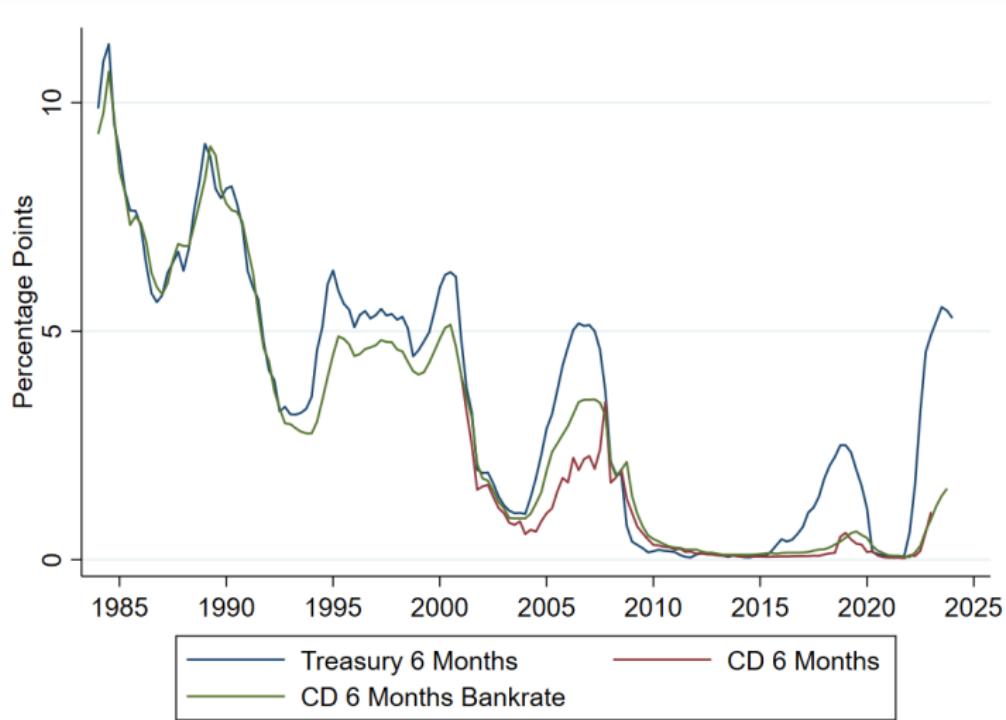


(b) 5 Years Maturity

▶ back

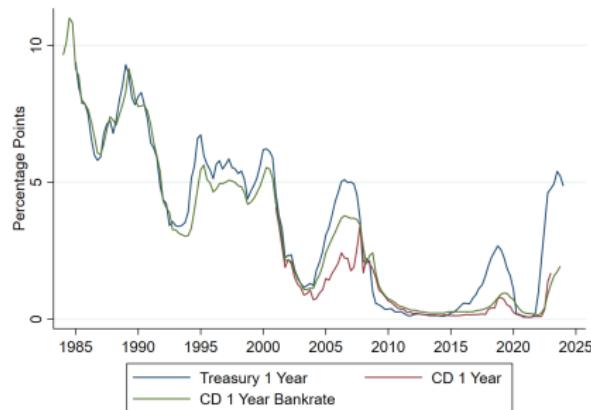
Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity

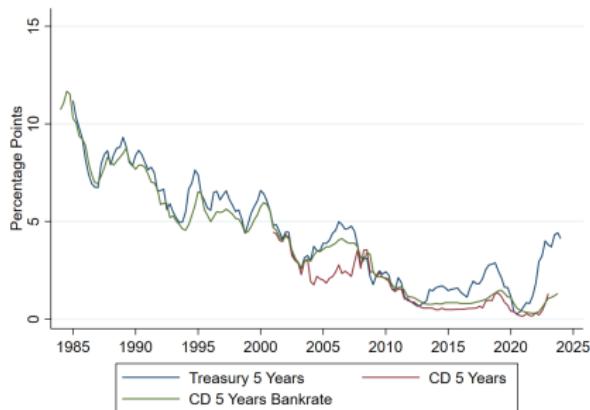


Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



(a) 1 Year Maturity

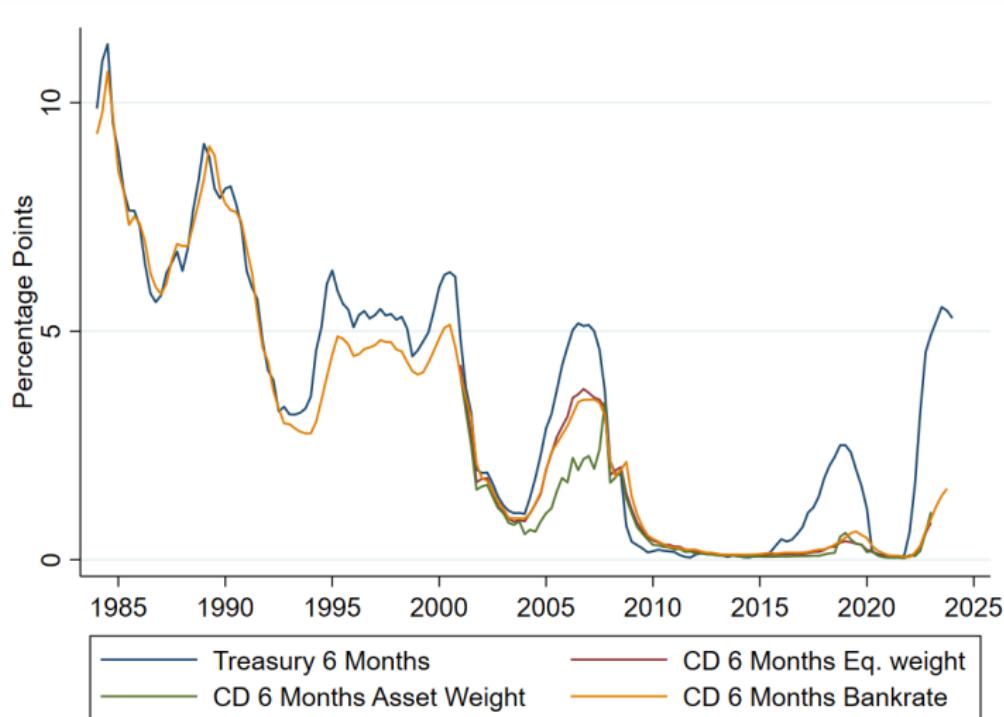


(b) 5 Years Maturity

▶ back

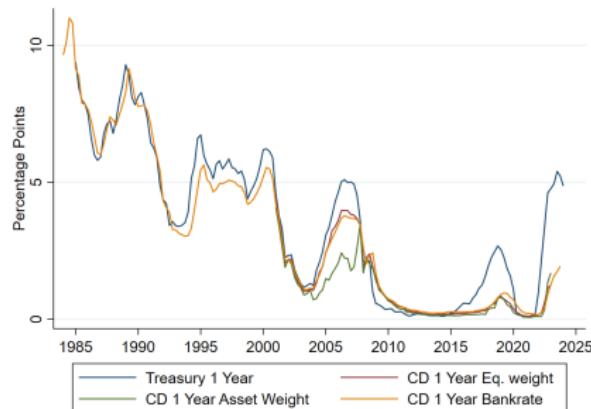
Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



(a) 1 Year Maturity



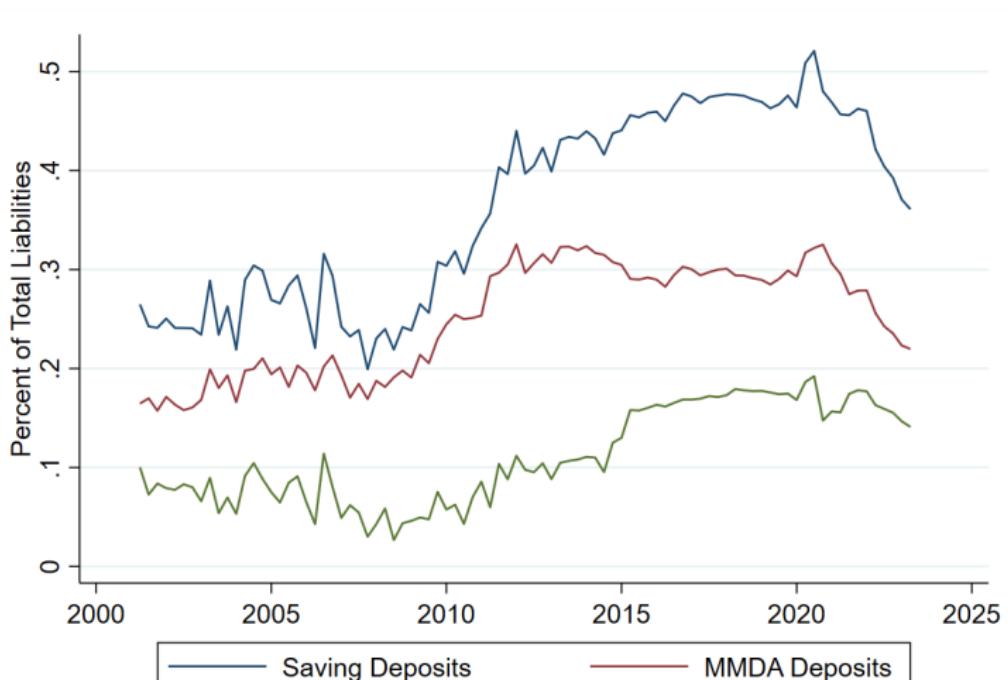
(b) 5 Years Maturity

▶ back

Saving Deposits as a share of total liabilities. CPI Asset Weighted.

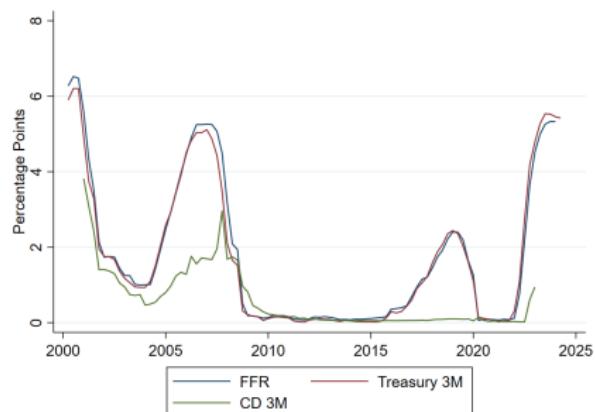
Top 50 Banks.

Figure: Saving Deposits as a share of Total Liabilities. CPI Asset Weighted. Top 50 Banks

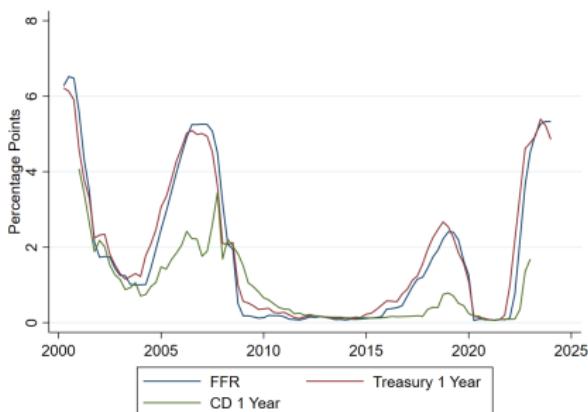


Historical Rates at Comparison

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



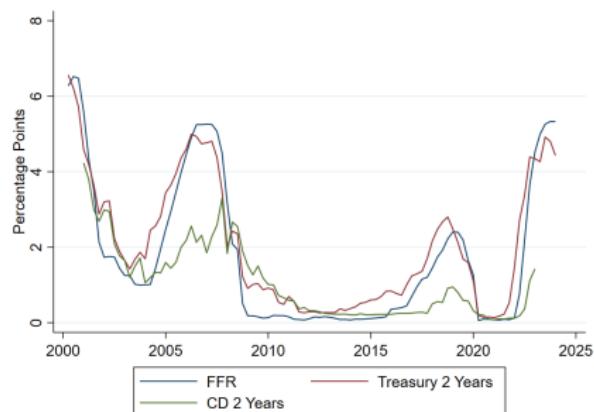
(a) 3 Months Maturity



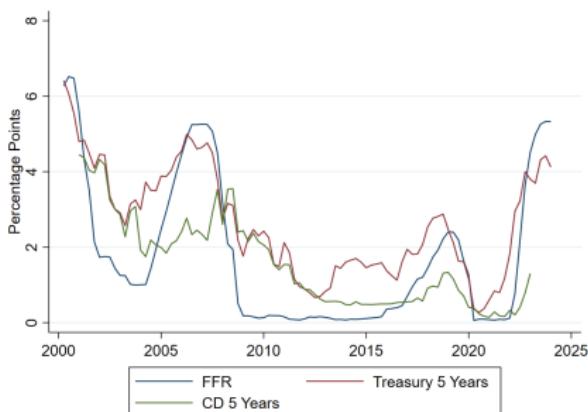
(b) 1 Year Maturity

Historical Rates at Comparison

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



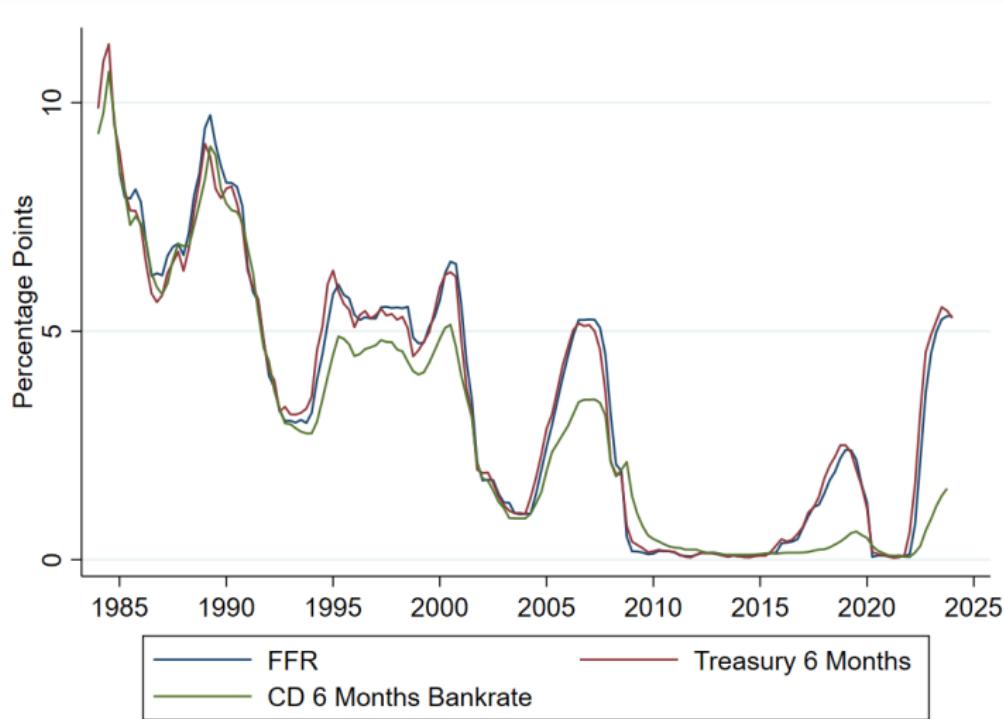
(a) 2 Years Maturity



(b) 5 Years Maturity

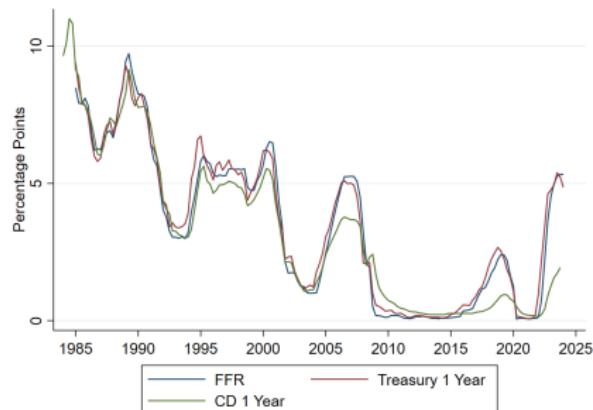
Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity

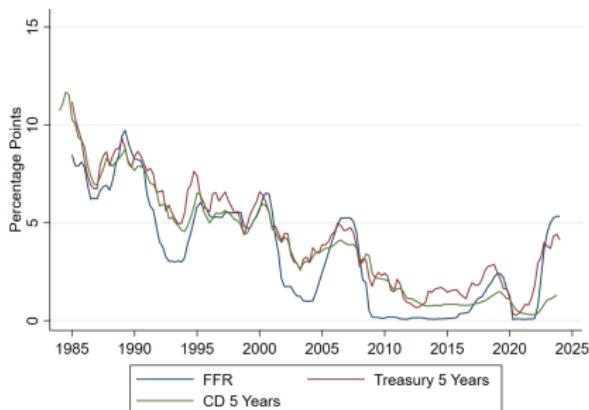


Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



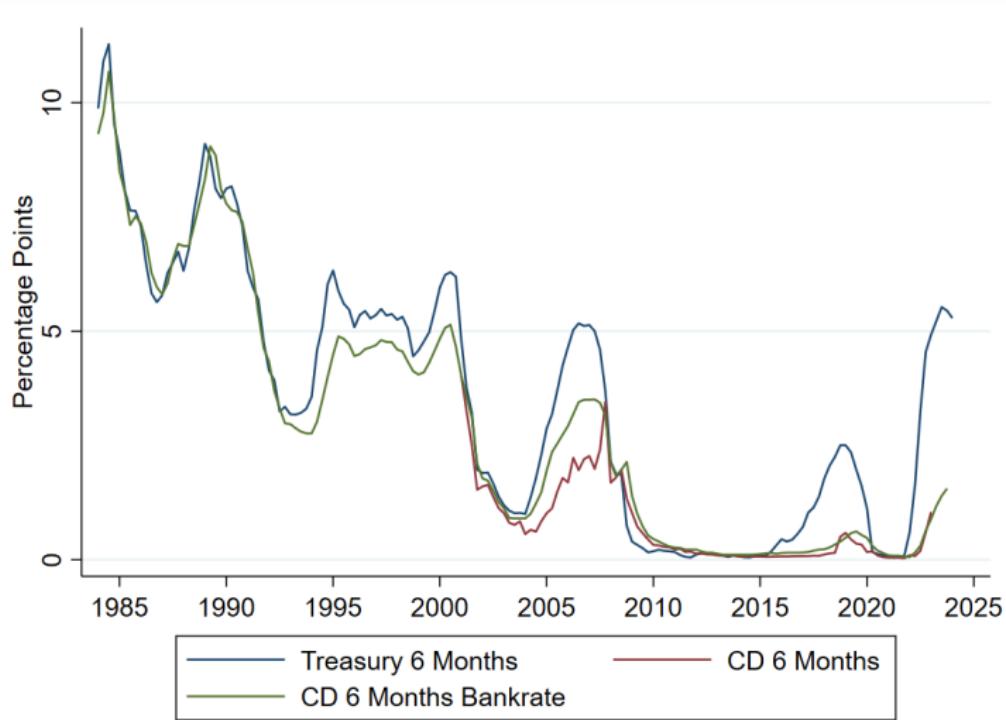
(a) 1 Year Maturity



(b) 5 Years Maturity

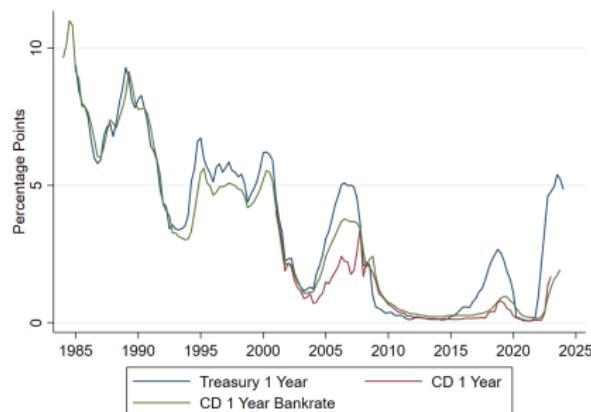
Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity

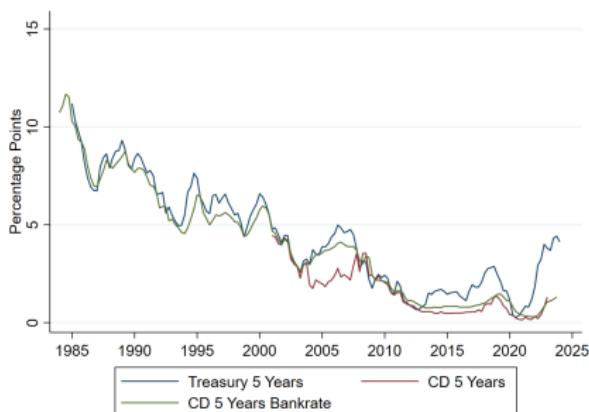


Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



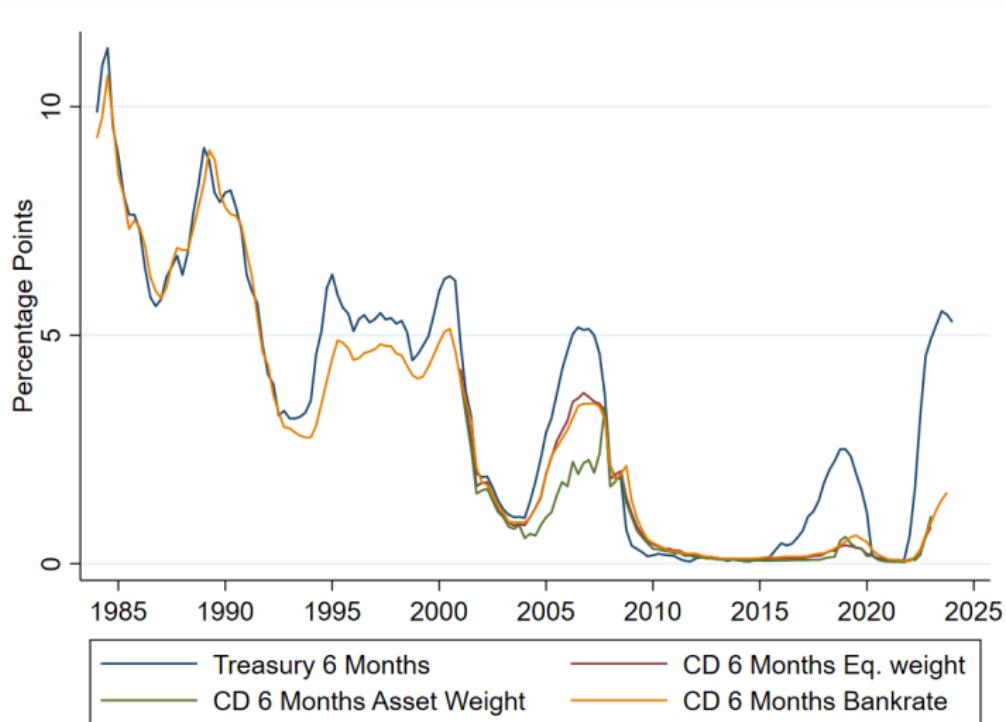
(a) 1 Year Maturity



(b) 5 Years Maturity

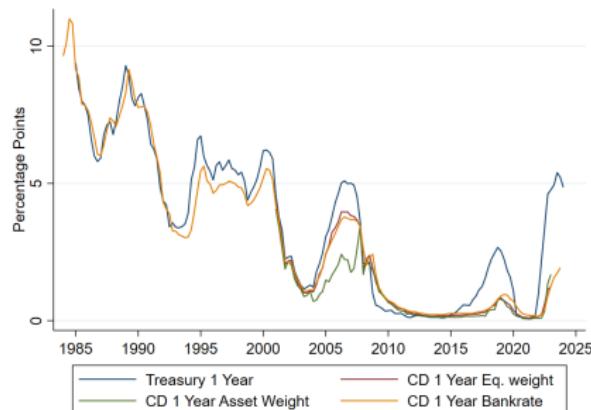
Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



Historical Rates at Comparison. Throw back to 1980s.

Figure: CD Rates at comparison with FEDFUNDs and Treasury of Matched Maturity



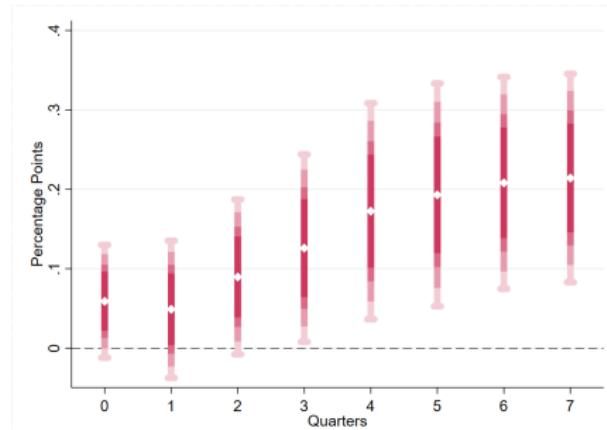
(a) 1 Year Maturity



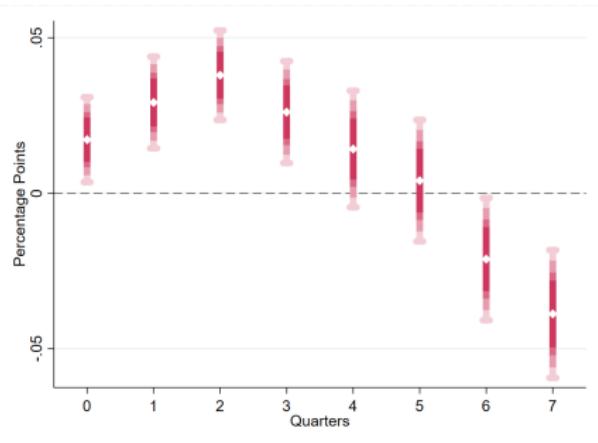
(b) 5 Years Maturity

MMDA 25K. CPI Asset Weighted. Top 50 Banks.

Figure: MMDA 25K. CPI Asset Weighted. Top 50 Banks.

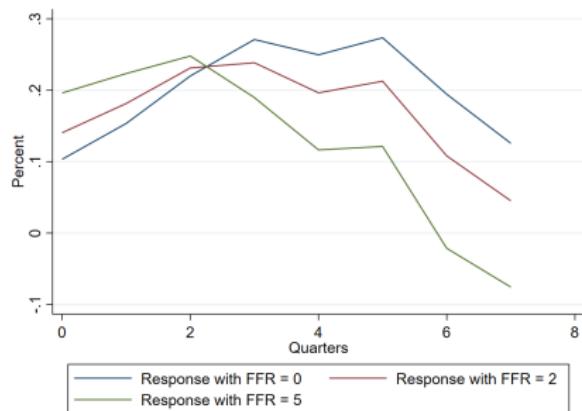


(a) Response to MP_t^{shock}

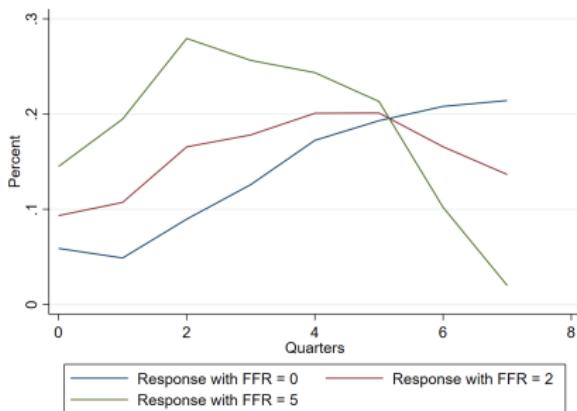


(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: MMDA 25K. Comparison with different initial FFR state. Top 50 Banks.



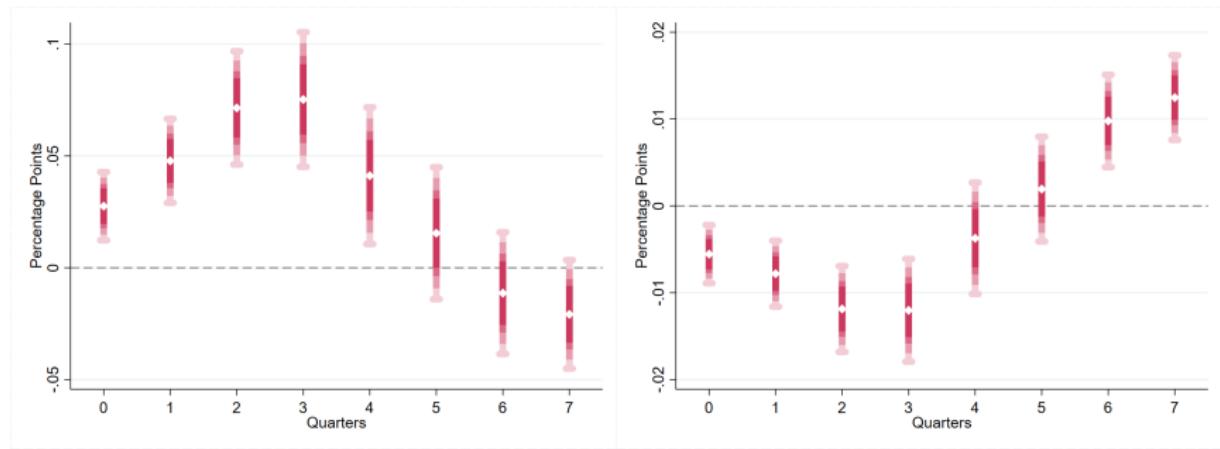
(a) Equally Weighted



(b) CPI Asset Weighted

MMDA 50K Spread with MMDA25K. CPI Asset Weighted. Top 50 Banks.

Figure: MMDA 50K spread with MM25K. CPI Asset Weighted. Top 50 Banks.



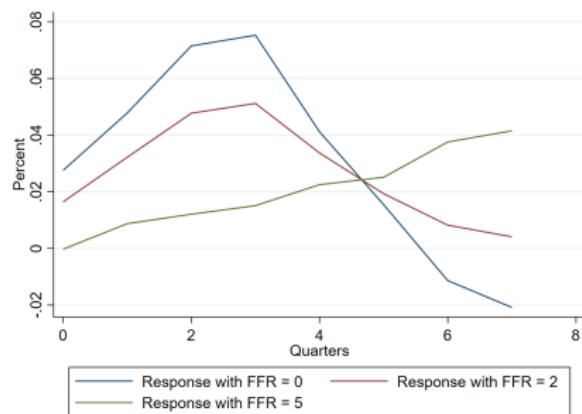
(a) Response to MP_t^{shock}

(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

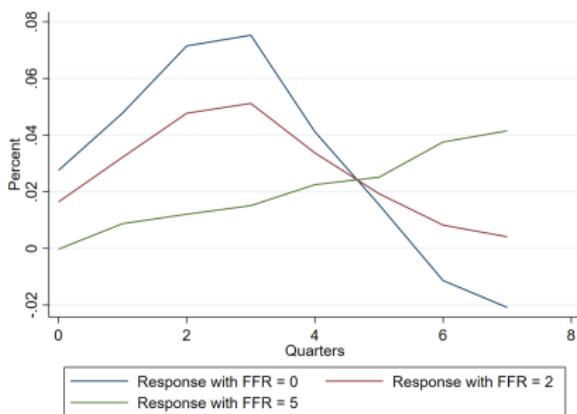
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MMDA 50K spread with MMDA25K. Comparison with different initial FFR state.

Figure: MMDA 50K. Comparison with different initial FFR state. Top 50 Banks.

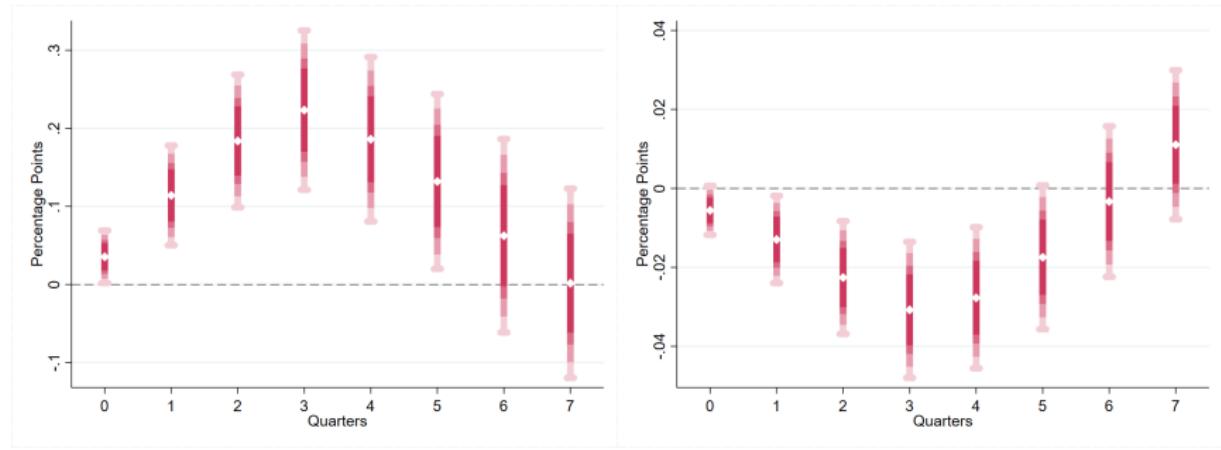


(a) Equally Weighted



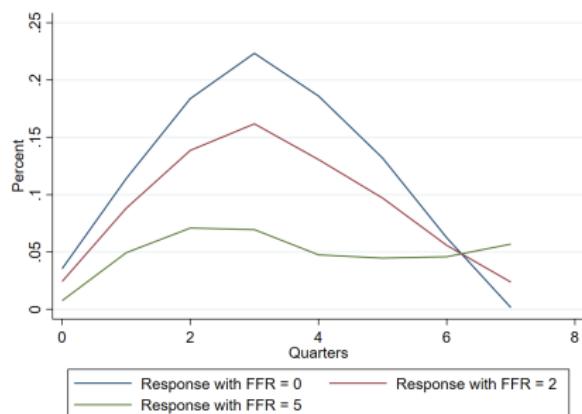
(b) CPI Asset Weighted

Figure: Spread 2Y - 3M CD 10K. CPI Asset Weighted. Top 50 Banks.

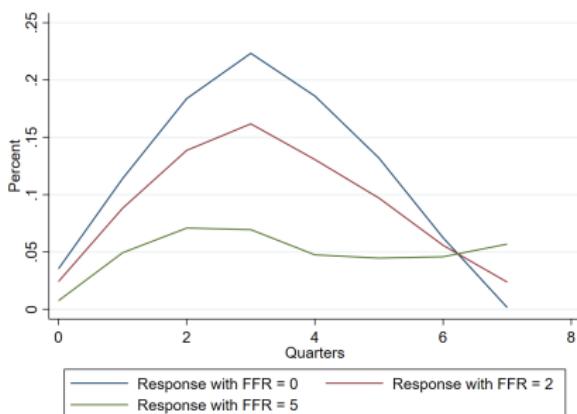
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread 2Y - 3M CD 10K. Comparison with different initial FFR state.

Figure: Spread 2Y - 3M CD 10K. Comparison with different initial FFR state. Top 50 Banks.

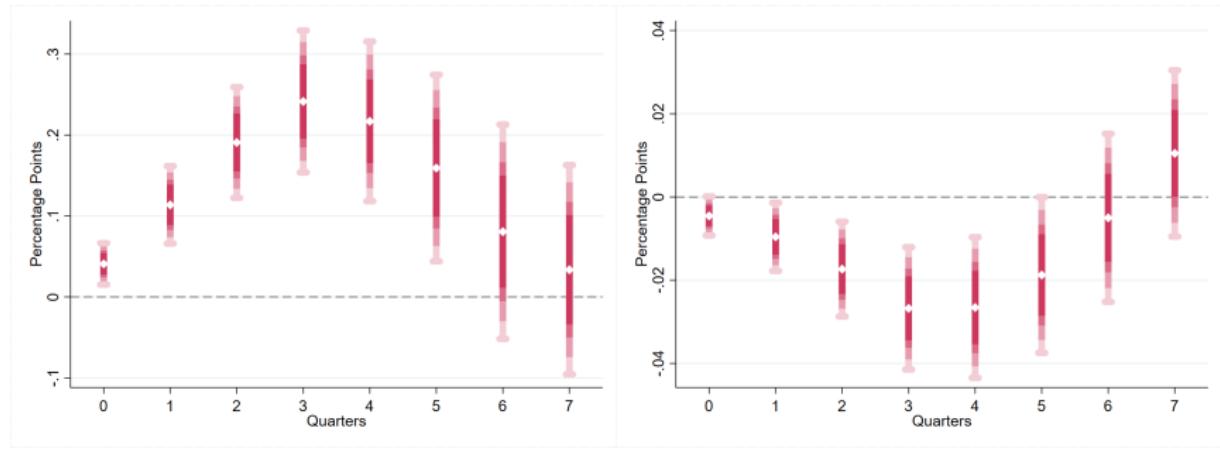


(a) Equally Weighted



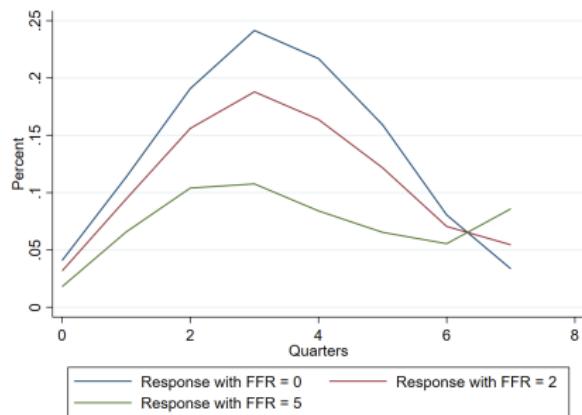
(b) CPI Asset Weighted

Figure: Spread 1Y - 3M CD 10K. CPI Asset Weighted. Top 50 Banks.

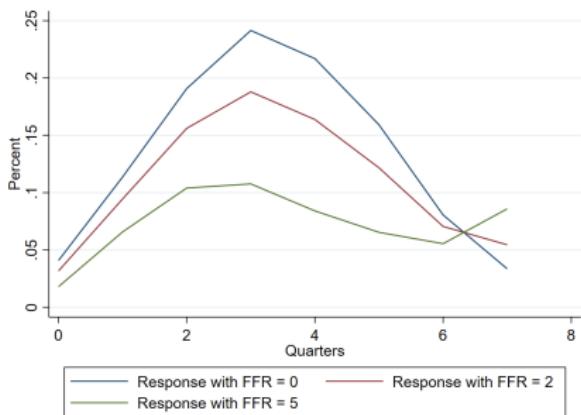
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread 1Y - 3M CD 10K. Comparison with different initial FFR state.

Figure: Spread 1Y - 3M CD 10K. Comparison with different initial FFR state. Top 50 Banks.

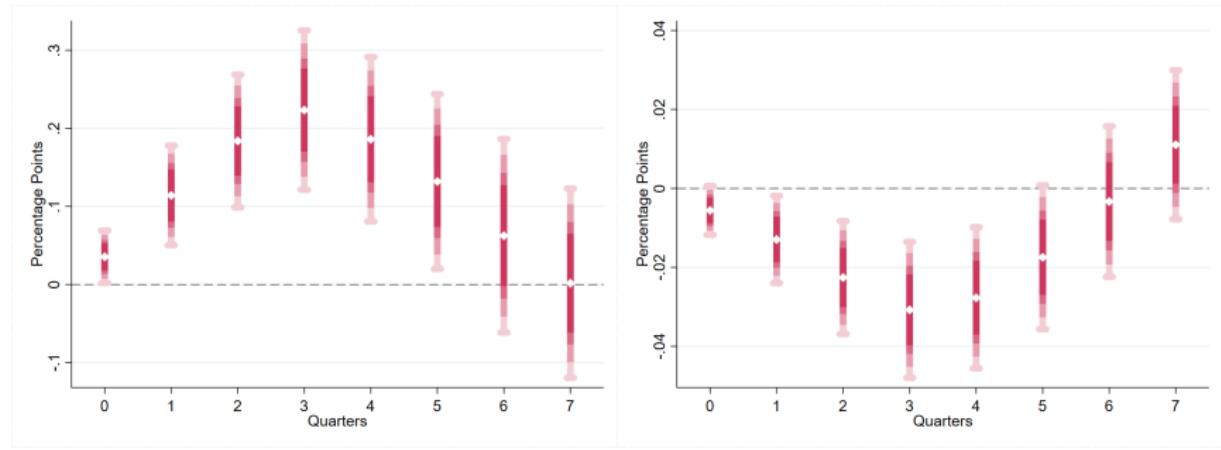


(a) Equally Weighted



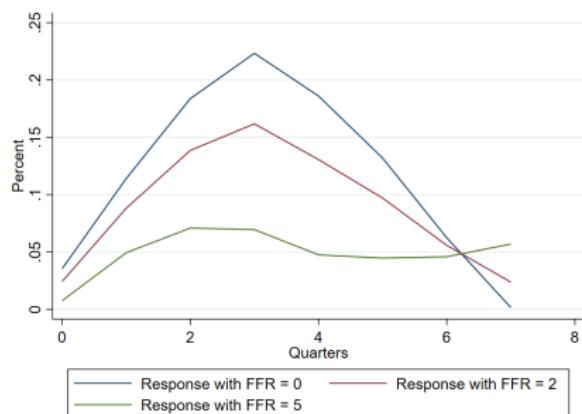
(b) CPI Asset Weighted

Figure: Spread 2Y - 3M CD 10K. CPI Asset Weighted. Top 50 Banks.

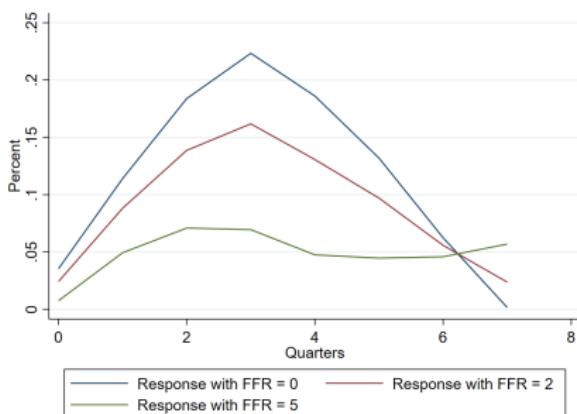
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread 2Y - 3M CD 10K. Comparison with different initial FFR state.

Figure: Spread 2Y - 3M CD 10K. Comparison with different initial FFR state. Top 50 Banks.



(a) Equally Weighted



(b) CPI Asset Weighted

Figure: Spread MM25K - MM10K. CPI Asset Weighted. Top 50 Banks.

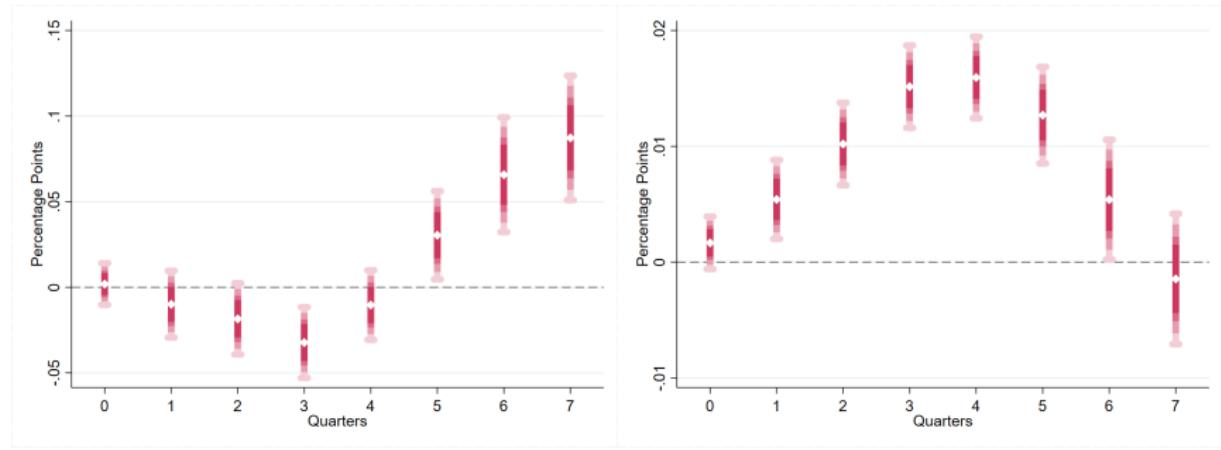
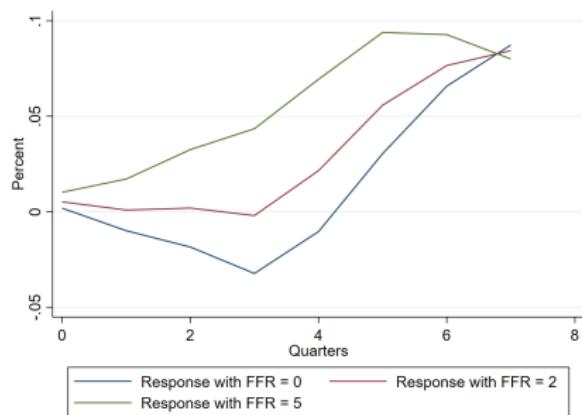
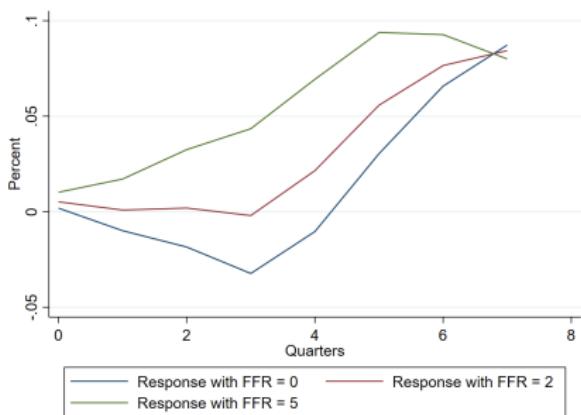
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: Spread MM25K - MM10K. Comparison with different initial FFR state.
Top 50 Banks.



(a) Equally Weighted



(b) CPI Asset Weighted

Figure: Spread MM50K - MM10K. CPI Asset Weighted. Top 50 Banks.

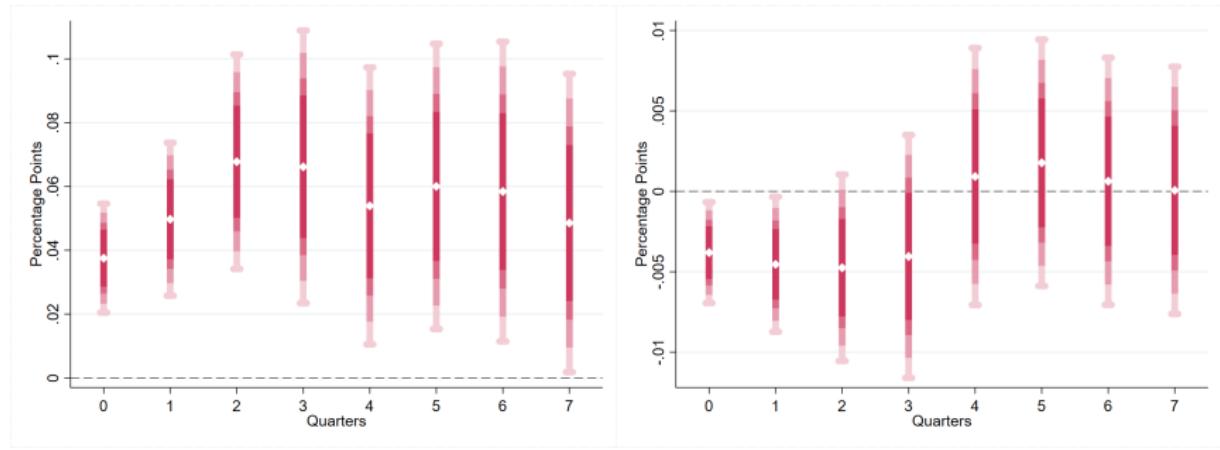
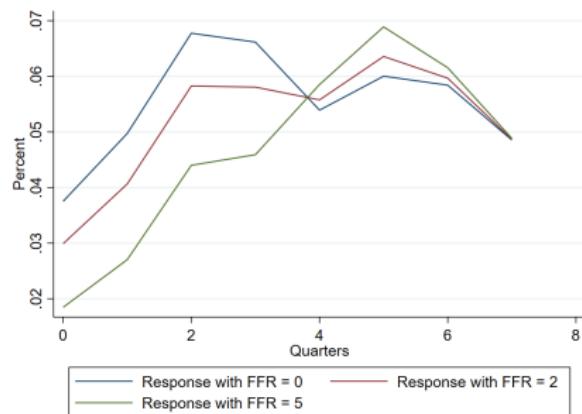
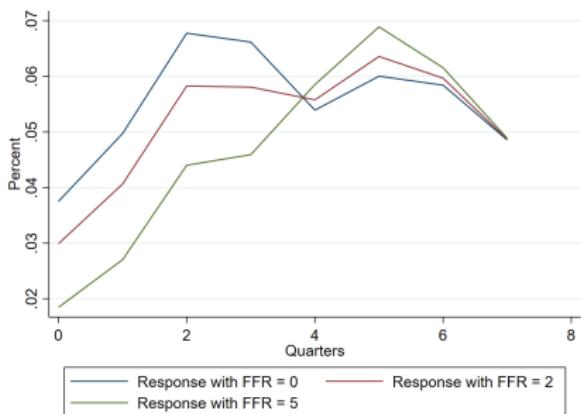


Figure: Spread MM50K - MM10K. Comparison with different initial FFR state.
Top 50 Banks.



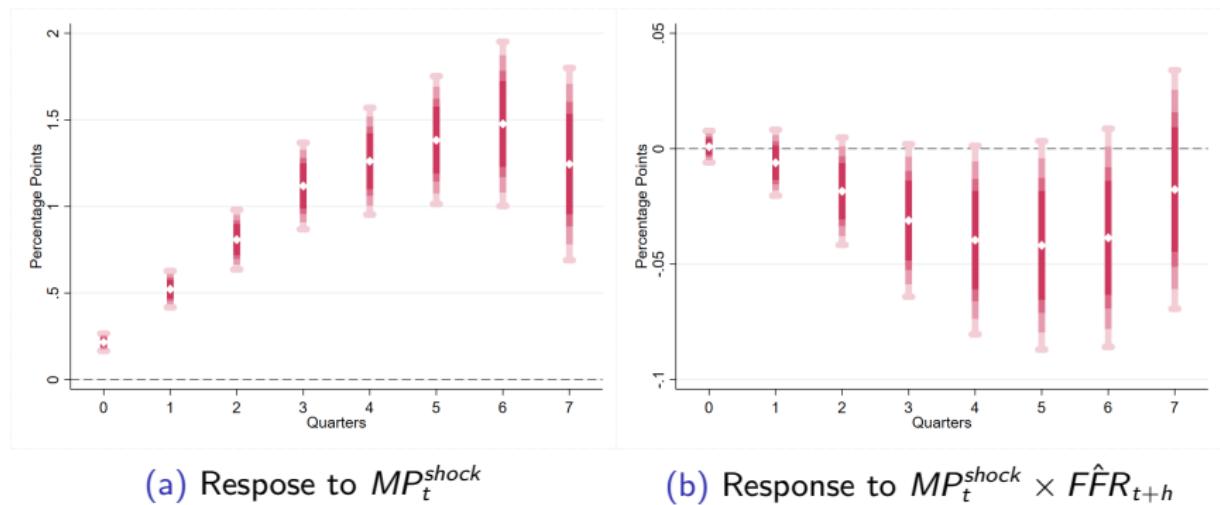
(a) Equally Weighted



(b) CPI Asset Weighted

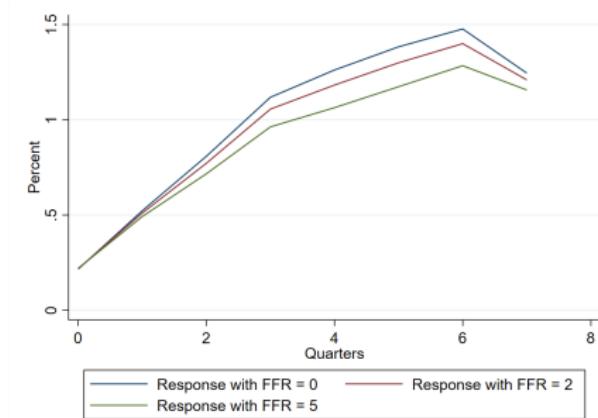
Spread Treasury 1 Month - MM10K. CPI Asset Weighted. Top 50 Banks.

Figure: Spread FFR - MM10K. CPI Asset Weighted. Top 50 Banks.

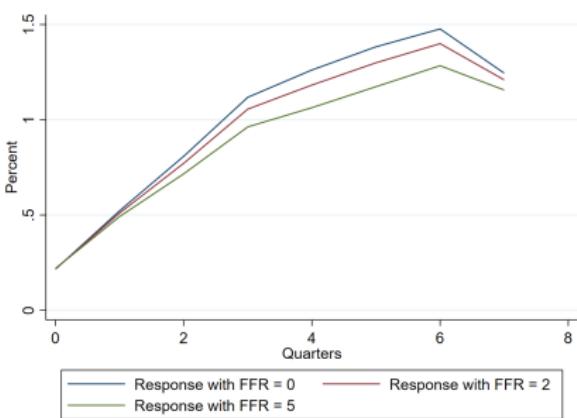


Spread Treasury 1 Month - MM10K. Comparison with different initial FFR state.

Figure: Spread FFR - MM10K. Comparison with different initial FFR state. Top 50 Banks.



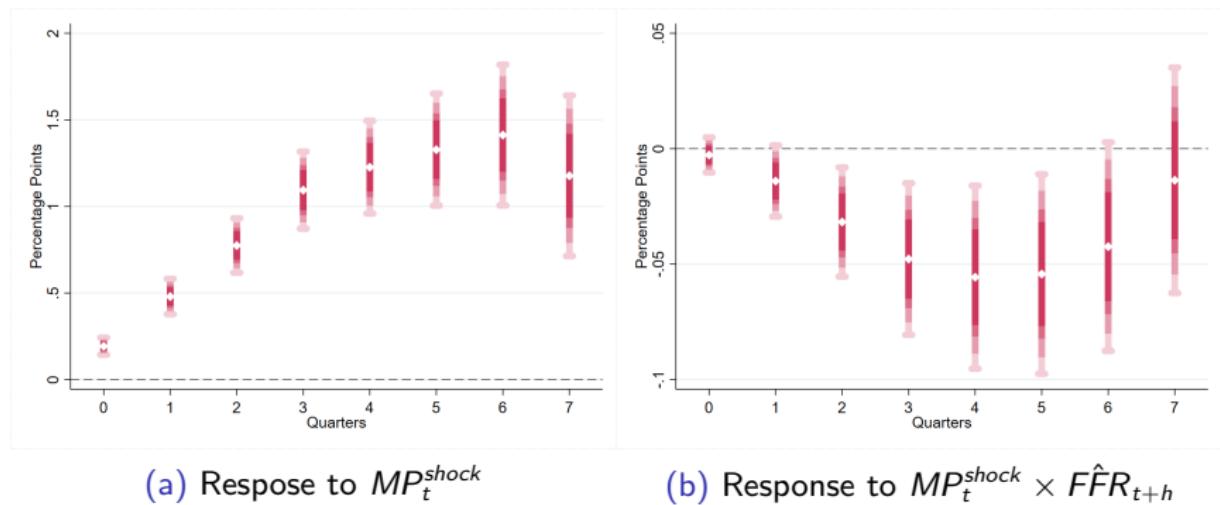
(a) Equally Weighted



(b) CPI Asset Weighted

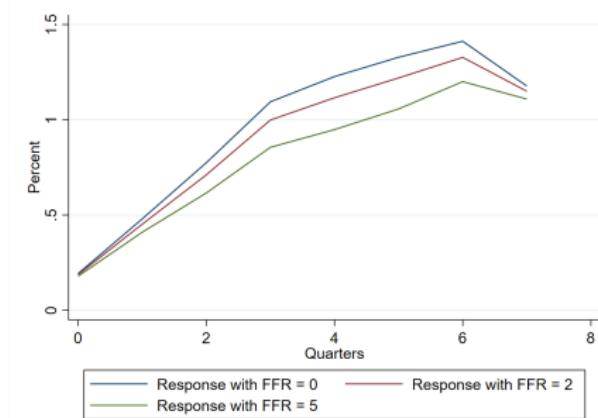
Spread Treasury 1 Month - MM25K. CPI Asset Weighted. Top 50 Banks.

Figure: Spread FFR - MM25K. CPI Asset Weighted. Top 50 Banks.

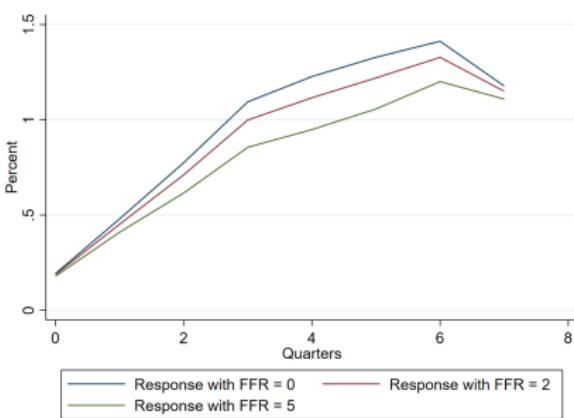


Spread Treasury 1 Month - MM25K. Comparison with different initial FFR state.

Figure: Spread FFR - MM25K. Comparison with different initial FFR state. Top 50 Banks.



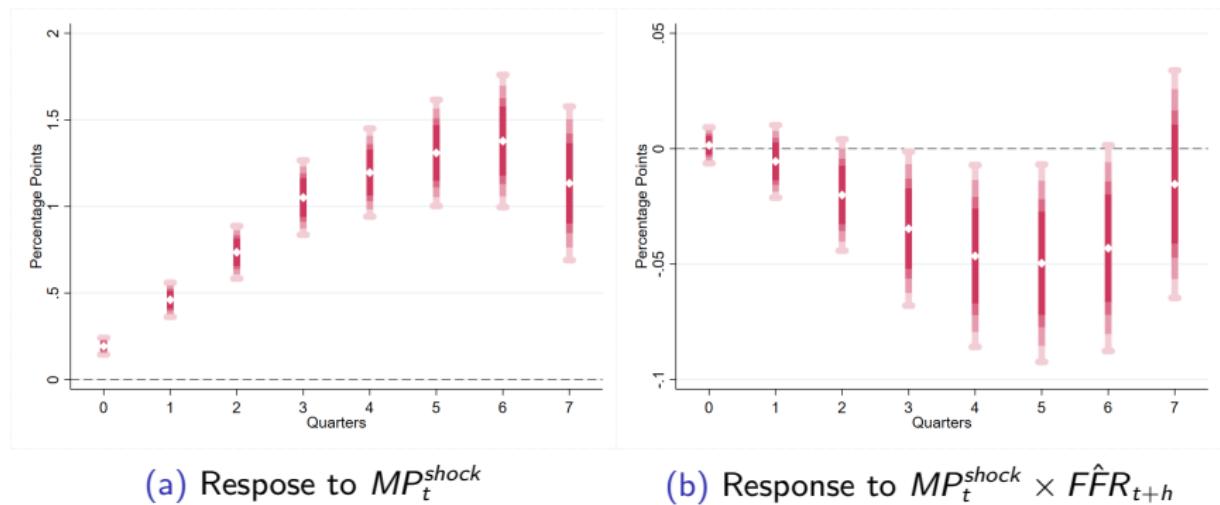
(a) Equally Weighted



(b) CPI Asset Weighted

Spread Treasury 1 Month - MM50K. CPI Asset Weighted. Top 50 Banks.

Figure: Spread FFR - MM50K. CPI Asset Weighted. Top 50 Banks.

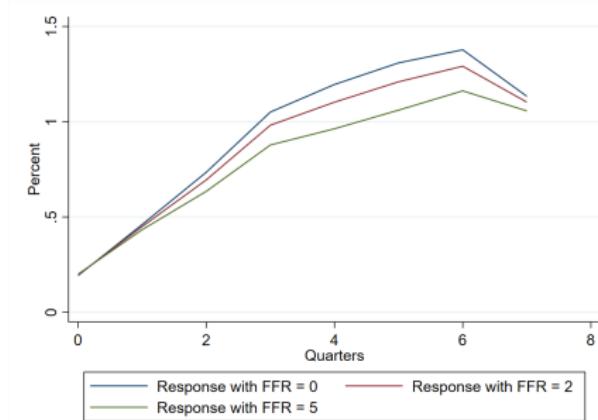


(a) Response to MP_t^{shock}

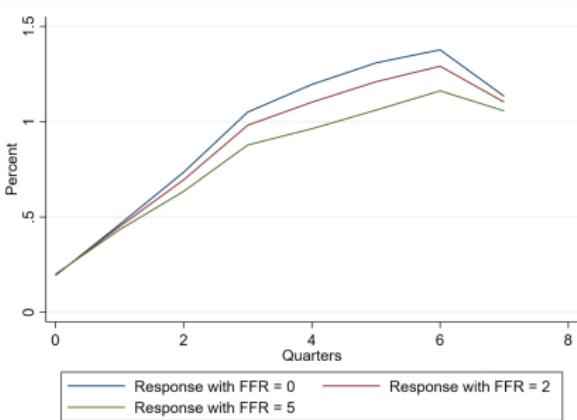
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread Treasury 1 Month - MM50K. Comparison with different initial FFR state.

Figure: Spread FFR - MM50K. Comparison with different initial FFR state. Top 50 Banks.

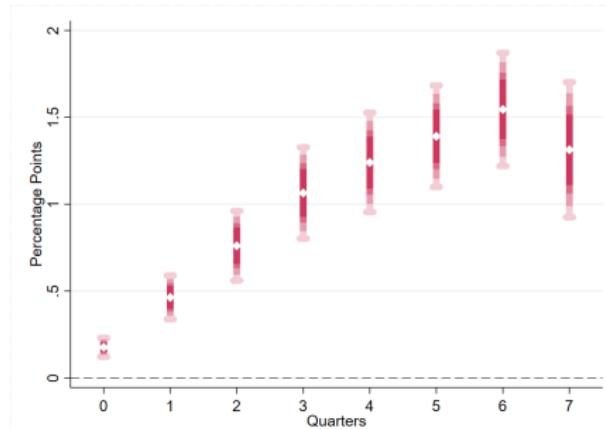


(a) Equally Weighted

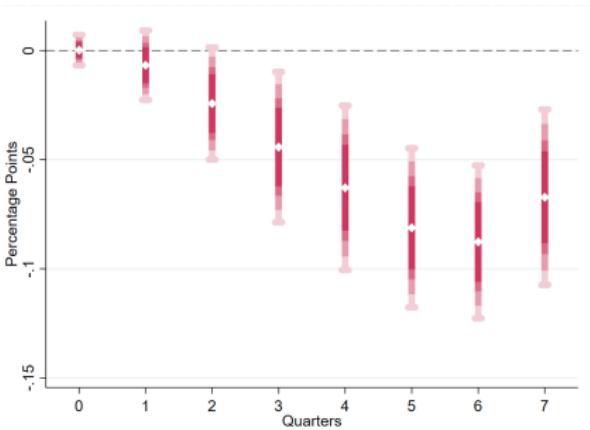


(b) CPI Asset Weighted

Figure: Spread Treasury 3M - CD 3M. CPI Asset Weighted. Top 50 Banks.



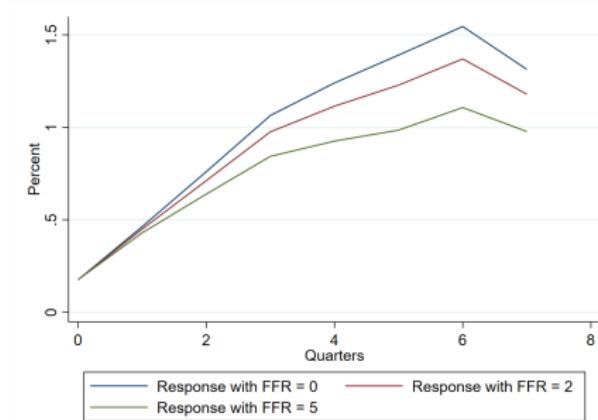
(a) Response to MP_t^{shock}



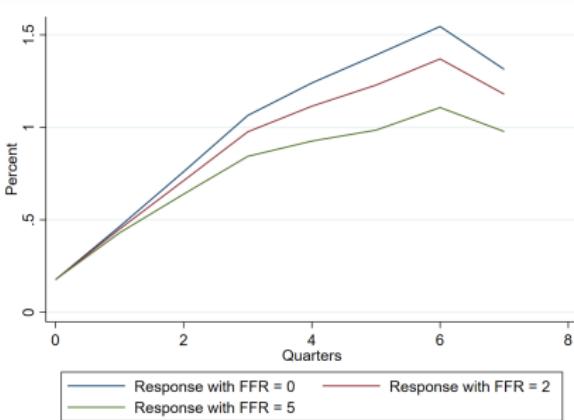
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread Treasury 3M - CD 3M. Comparison with different initial FFR state.

Figure: Spread Treasury 3M - CD 3M. Comparison with different initial FFR state.
Top 50 Banks.

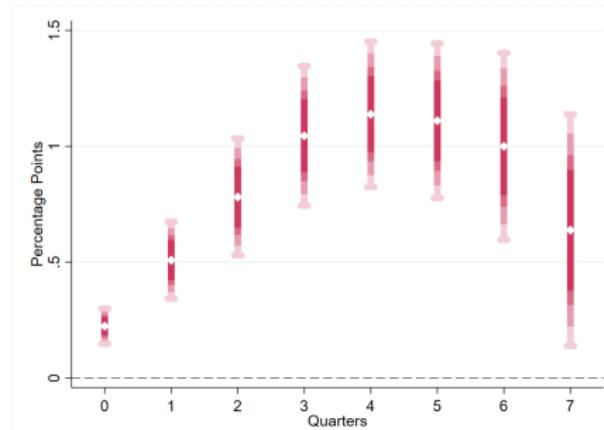
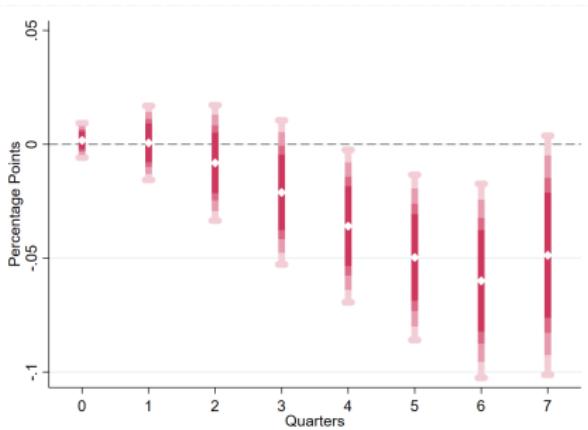


(a) Equally Weighted



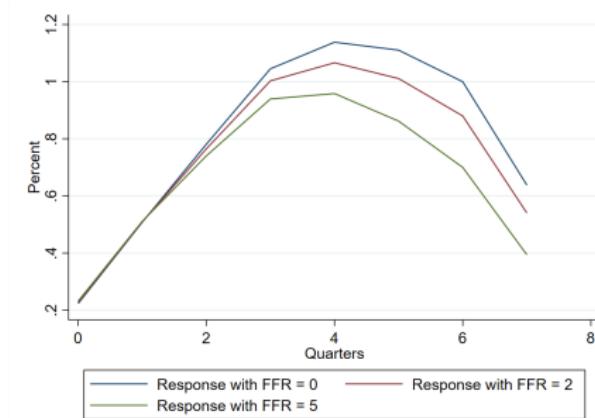
(b) CPI Asset Weighted

Figure: Spread Treasury 1Y - CD 1Y. CPI Asset Weighted. Top 50 Banks.

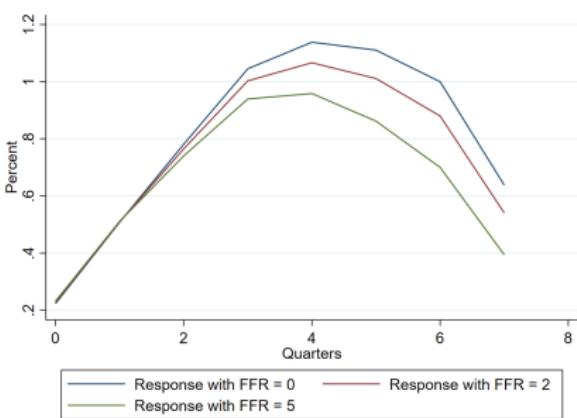
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread Treasury 1Y - CD 1Y. Comparison with different initial FFR state.

Figure: Spread Treasury 1Y - CD 1Y. Comparison with different initial FFR state.
Top 50 Banks.

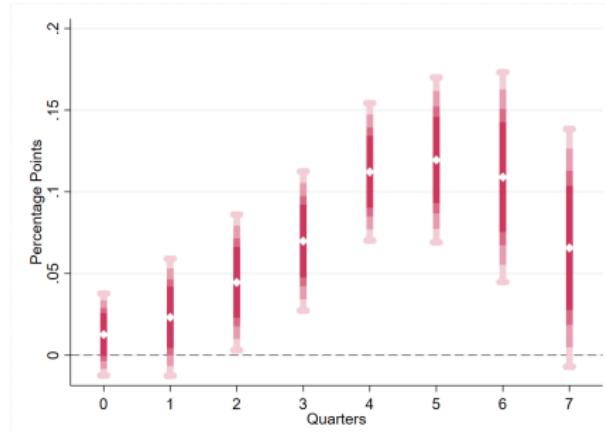
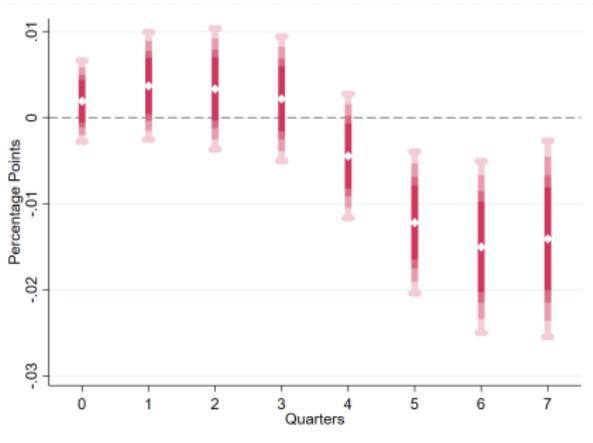


(a) Equally Weighted



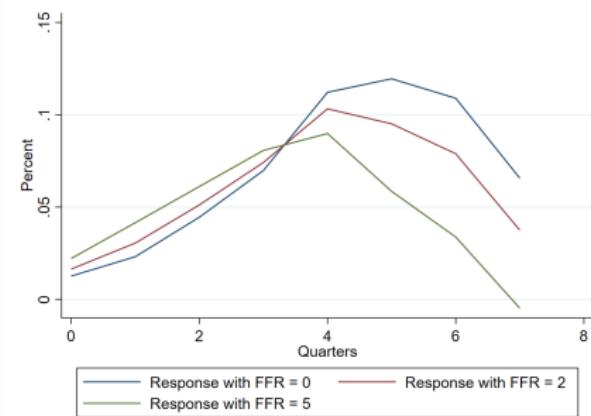
(b) CPI Asset Weighted

Figure: Spread 12M CD 100K - 10K. CPI Asset Weighted. Top 50 Banks.

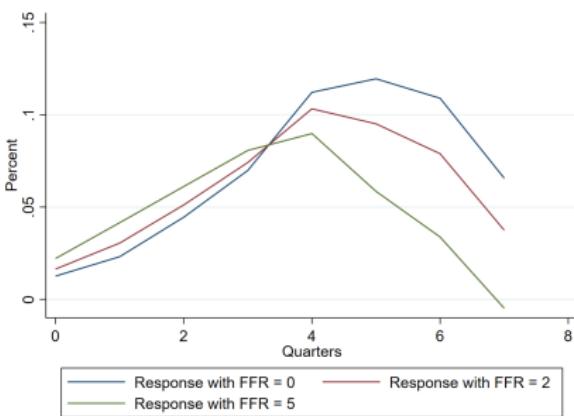
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread 12M CD 100K - 10K. Comparison with different initial FFR state.

Figure: Spread 12M CD 100K - 10K. Comparison with different initial FFR state. Top 50 Banks.



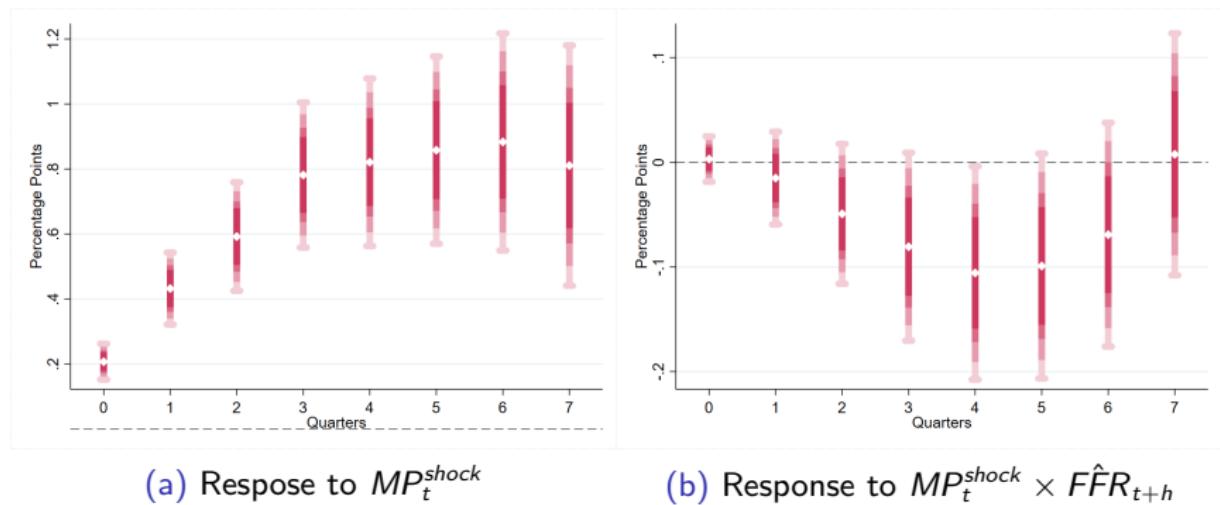
(a) Equally Weighted



(b) CPI Asset Weighted

Spread Treasury 1 Month - MM50K. CPI Asset Weighted. Top 50 Banks.

Figure: MM25K. CPI Asset Weighted. Top 50 Banks.

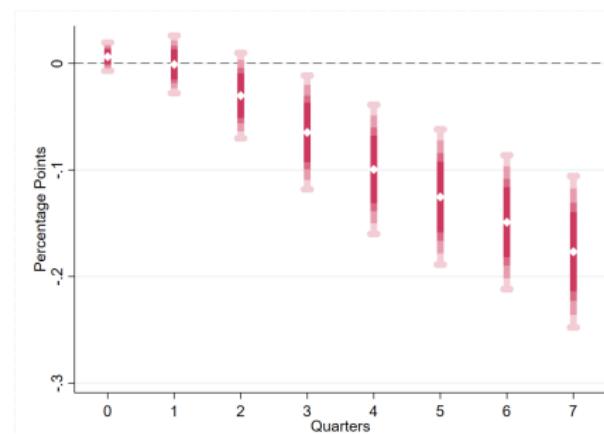


(a) Response to MP_t^{shock}

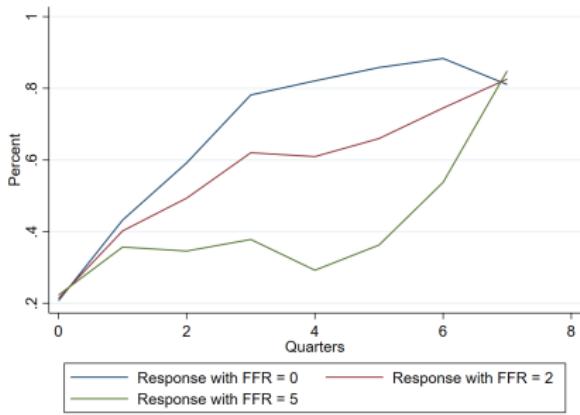
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread Treasury 1 Month - MM50K. Comparison with different initial FFR state.

Figure: Spread Treasury 1 Month - MM50K. Comparison with different initial FFR state. Top 50 Banks.



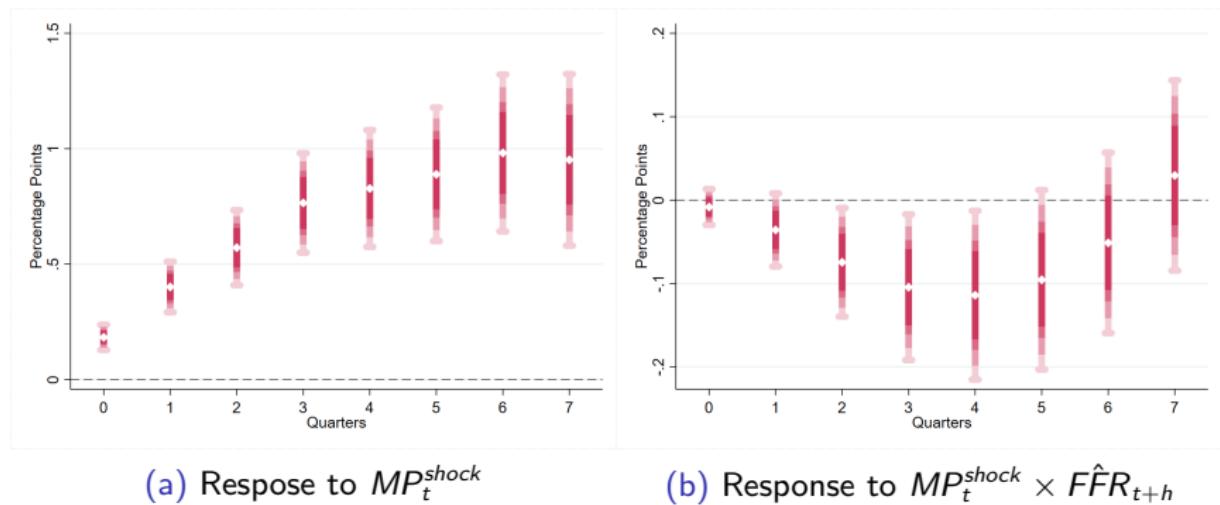
(a) Response to
 $MP_t^{\text{shock}} \times \hat{FFR}_{t+h} \times \text{Salience}$



(b) CPI Asset Weighted

Spread Treasury 1 Month - MM25K. CPI Asset Weighted. Top 50 Banks.

Figure: Spread Treasury 1 Month - MM25K. CPI Asset Weighted. Top 50 Banks.

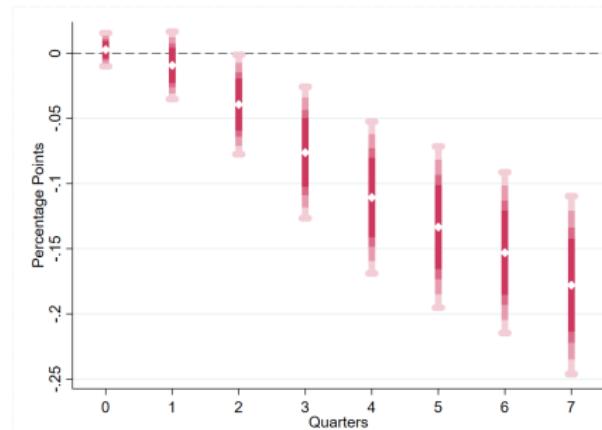


(a) Response to MP_t^{shock}

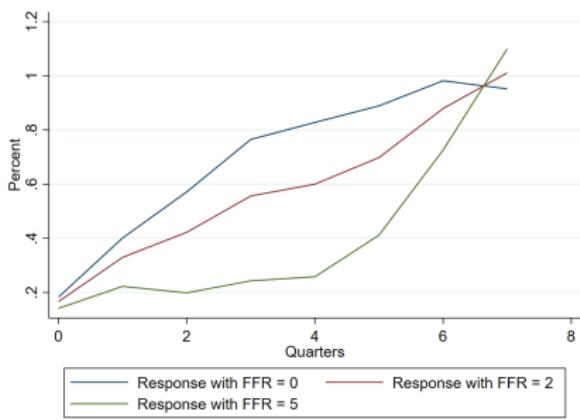
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Spread Treasury 1 Month - MM25K. Comparison with different initial FFR state.

Figure: Spread Treasury 1 Month - MM25K. Comparison with different initial FFR state. Top 50 Banks.



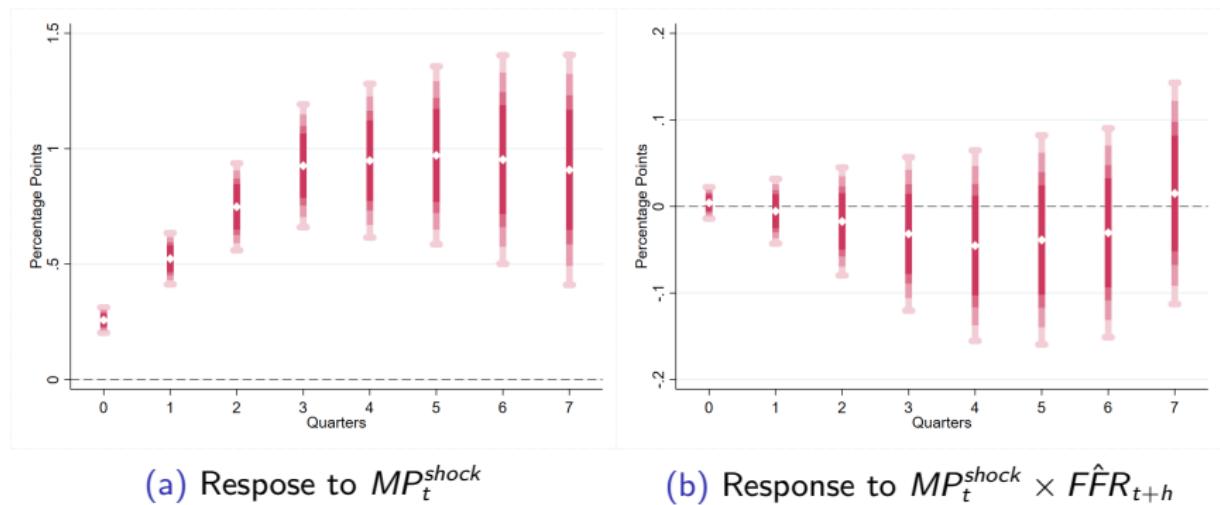
(a) Response to
 $MP_t^{\text{shock}} \times \hat{FFR}_{t+h} \times \text{Salience}$



(b) CPI Asset Weighted

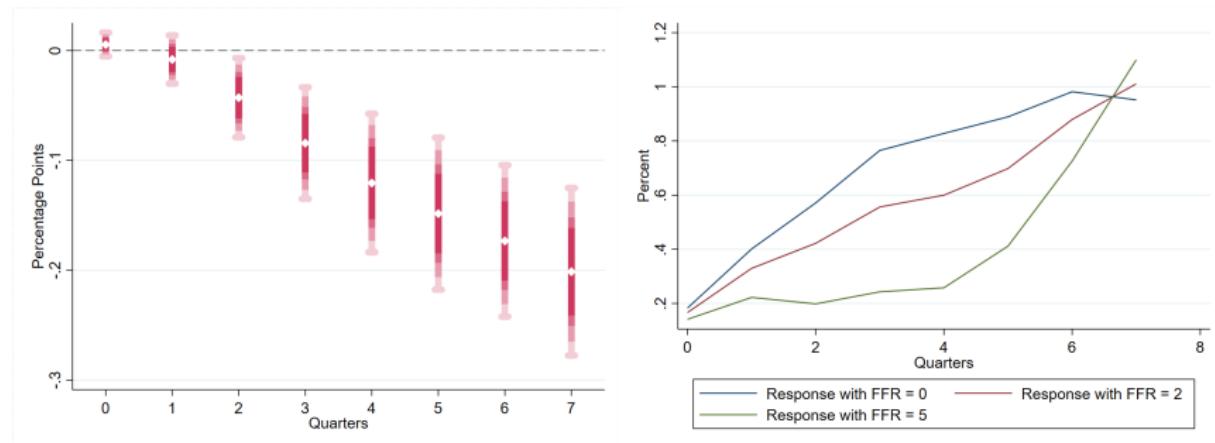
Spread Treasury 1 Month - MM2.5K. CPI Asset Weighted. Top 50 Banks.

Figure: Spread Treasury 1 Month - MM2.5K. CPI Asset Weighted. Top 50 Banks.



Spread Treasury 1 Month - MM2.5K. Comparison with different initial FFR state.

Figure: Spread Treasury 1 Month - MM2.5K. Comparison with different initial FFR state. Top 50 Banks.

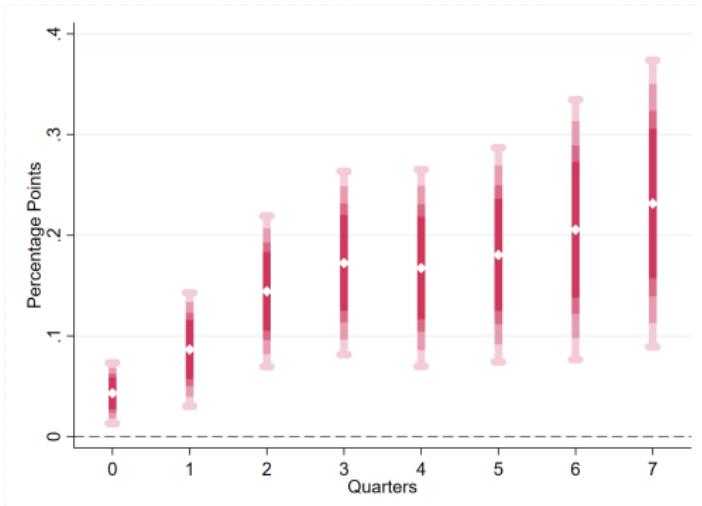


(a) Response to
 $MP_t^{\text{shock}} \times \hat{FFR}_{t+h} \times \text{Salience}$

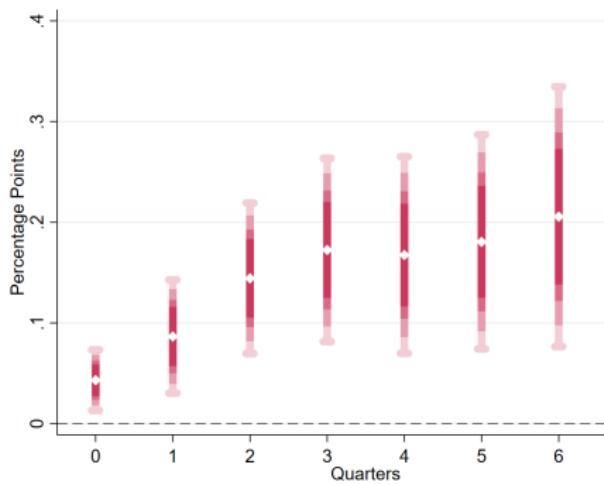
(b) CPI Asset Weighted

Asymmetric Pass-Through: Deposit Rates rise like feathers and fall like rockets.

Figure: 3 Months Money Market Deposit Account

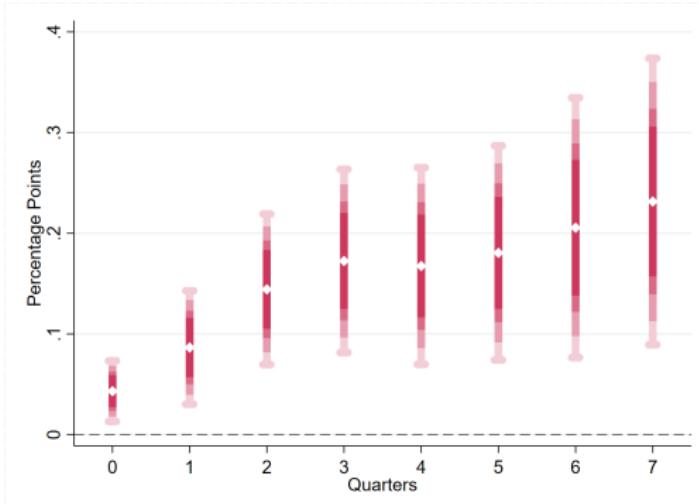


(a) Response to MP_t^{shock}

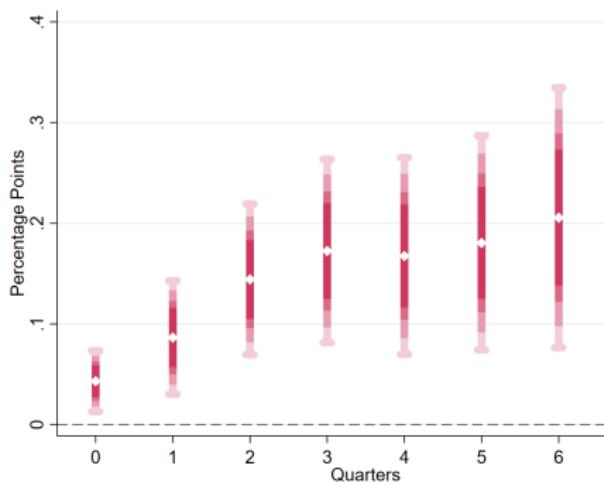


(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: 3 Months Money Market Deposit Account

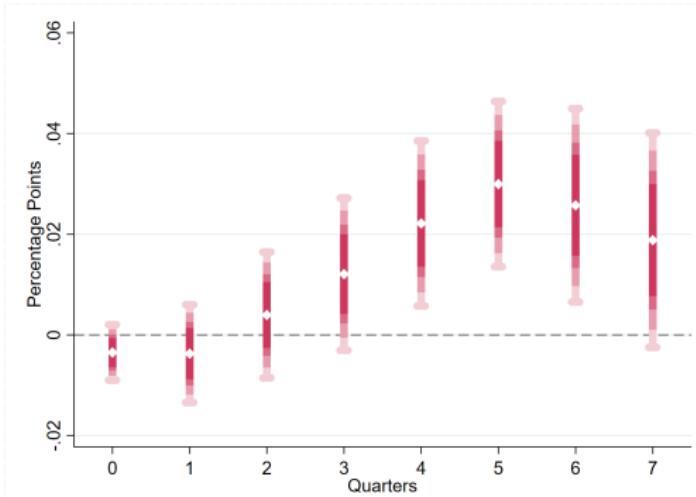
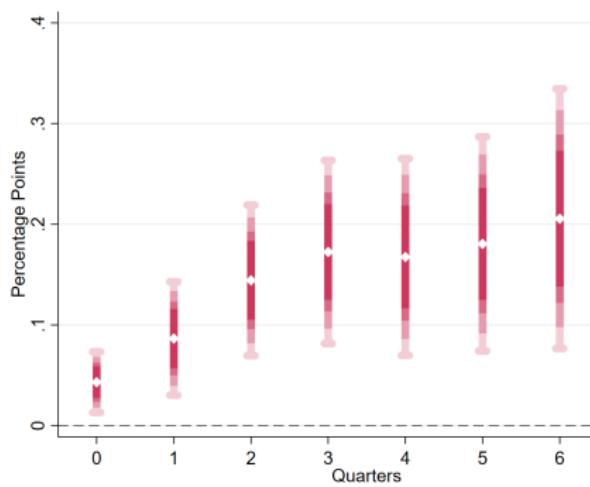


(a) Response to MP_t^{shock}



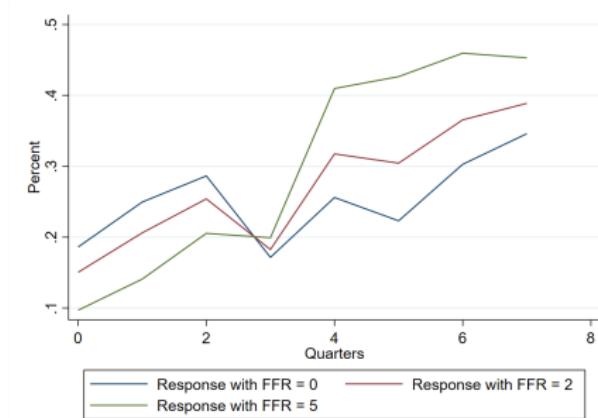
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: 175 15 Years Home Mortgage. CPI Asset Weighted. Top 50 Banks.

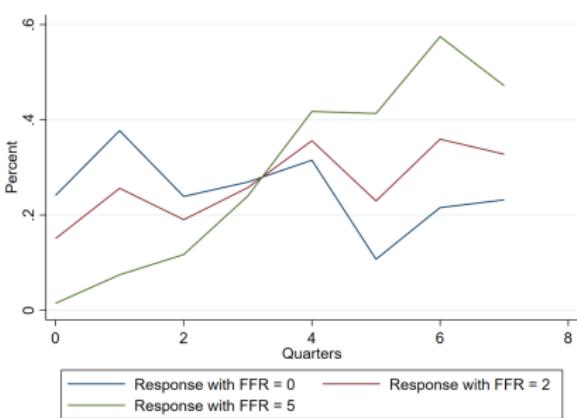
(a) Response to $MP_t^{shock} \times (FFR_t - FFR_{t-1})$ (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

175K 15 Years Home Mortgage. Comparison with different initial FFR state.

Figure: 175 15 Years Home Mortgage. Comparison with different initial FFR state.
Top 50 Banks.



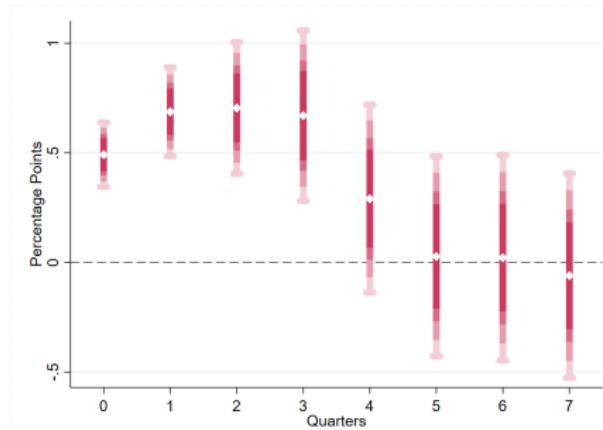
(a) Equally Weighted



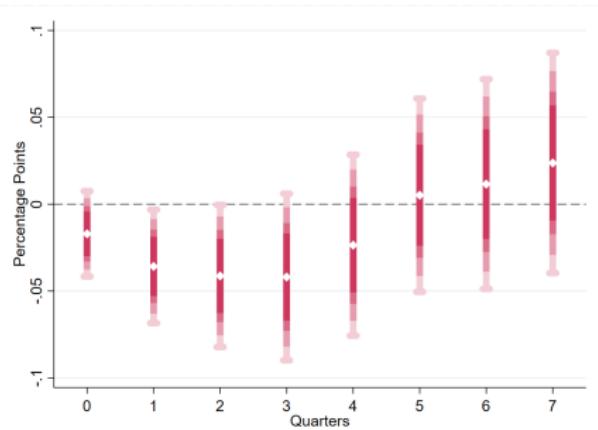
(b) CPI Asset Weighted

5Y Auto Loan. Equally Weighted. Top 50 Banks.

Figure: 5 Years Auto Loan. Equally Weighted. Top 50 Banks.



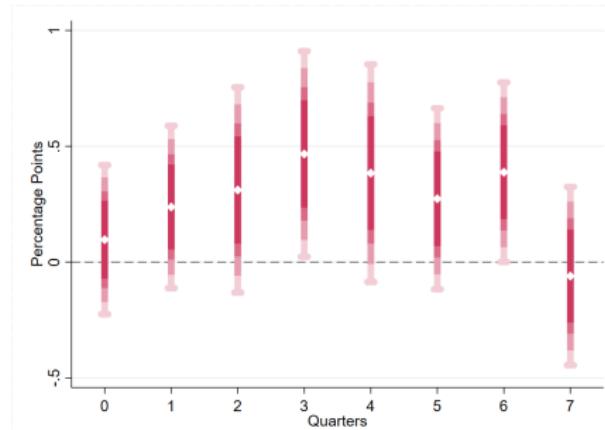
(a) Response to MP_t^{shock}



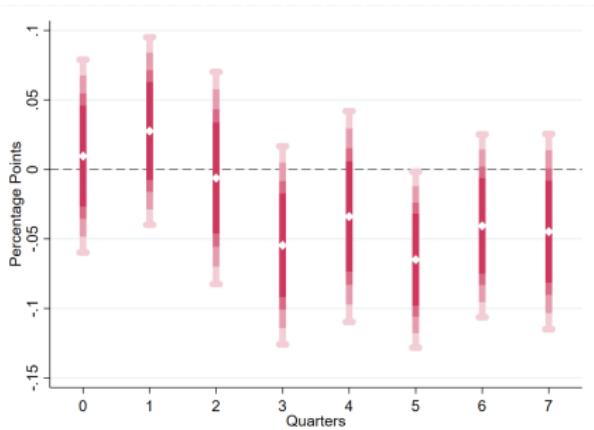
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

5Y Auto Loan. CPI Asset Weighted. Top 50 Banks.

Figure: 5 Years Auto Loan. CPI Asset Weighted. Top 50 Banks.



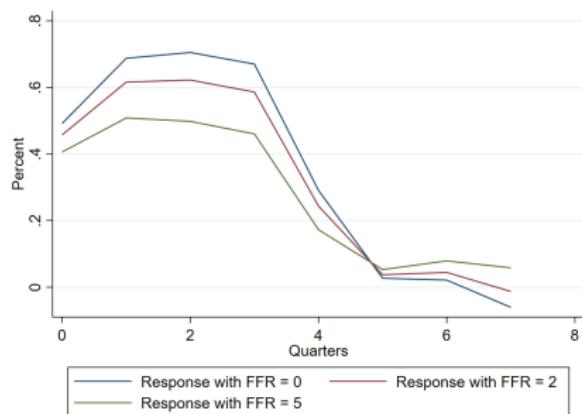
(a) Response to MP_t^{shock}



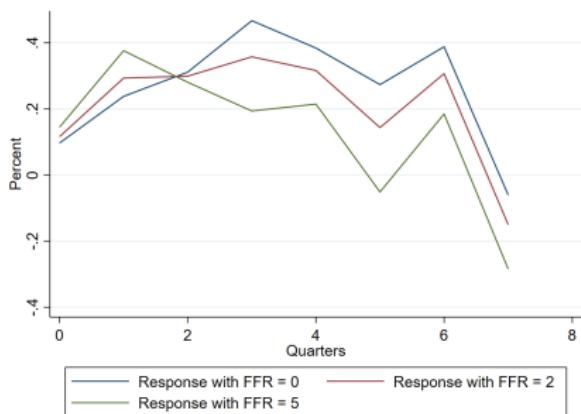
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

5Y Auto Loan. Comparison with different initial FFR state.

Figure: 5 Years Auto Loan. Comparison with different initial FFR state. Top 50 Banks.



(a) Equally Weighted



(b) CPI Asset Weighted

- **Data:**

- ① Branch level data of **offered/advertised rates** on **various standardized deposit and loan products**.
 - ① 75000+ Institutions (Commercial Banks, Credit Unions, S&L and Brokers)
 - ② surveys 100.000+ branches all over the US with consistency across time.
- ② Deposit Products Considered:
 - ① Money Market Deposit Account: a) minimum 25K and b) minimum 50K)
 - ② 03, 12, 24 and 60 Month Certificate of Deposit: a) 10K and b) 100K.
- ③ Loan Products Considered:
 - ① Auto Loan 5 Years 25K
 - ② 15 Years Residential Mortgage Loan 175K

- **Aggregation from Branch to Bank Level:**

- ① Equally Weighted over Branches (both Rate-Setting and Non-Rate-Setting Branches are included see BS (2020))

▶ back

- **Averages: Equally and Asset-Weighted**

- Equally-weighted rate: $R_t = \sum_{i=1}^{\# Banks_t} R_{i,t} \times \frac{1}{\# Banks_t}$

▶ back

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- Equally-weighted rate: $R_t = \sum_{i=1}^{\# Banks_t} R_{i,t} \times \frac{1}{\# Banks_t}$
- Weighted by deflated assets:

▶ back

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- Equally-weighted rate: $R_t = \sum_{i=1}^{\# Banks_t} R_{i,t} \times \frac{1}{\# Banks_t}$
- Weighted by deflated assets:
 - ➊ Deflate all Assets to 2010 CPI prices.
 - ➋ Construct weights as $w_{i,t} = \frac{CPI Assets_i}{\sum_{i=1}^{\# Banks_t} CPI Assets_{i,t}}$,
 - ➌ with $CPI Assets_i$ = Average over time of bank i's assets, deflated to 2010 dollars through CPI

▶ back

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- Equally-weighted rate: $R_t = \sum_{i=1}^{\# Banks_t} R_{i,t} \times \frac{1}{\# Banks_t}$

- Weighted by deflated assets:

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- ③ with $CPI Assets_i$ = Average over time of bank i's assets, deflated to 2010 dollars through CPI

- ④ Construct weighted average $R_t = \sum_{i=1}^{\# Banks_t} R_{i,t} \times w_{i,t}$

▶ back

- **Averages:** Equally and Asset-Weighted

- Equally-weighted rate: $R_t = \sum_{i=1}^{\# Banks_t} R_{i,t} \times \frac{1}{\# Banks_t}$

- Weighted by deflated assets:

- ① Deflate all Assets to 2010 CPI prices.

- ② Construct weights as $w_{i,t} = \frac{CPI Assets_i}{\sum_{i=1}^{\# Banks_t} CPI Assets_{i,t}}$,

- ③ with $CPI Assets_i$ = Average over time of bank i's assets, deflated to 2010 dollars through CPI

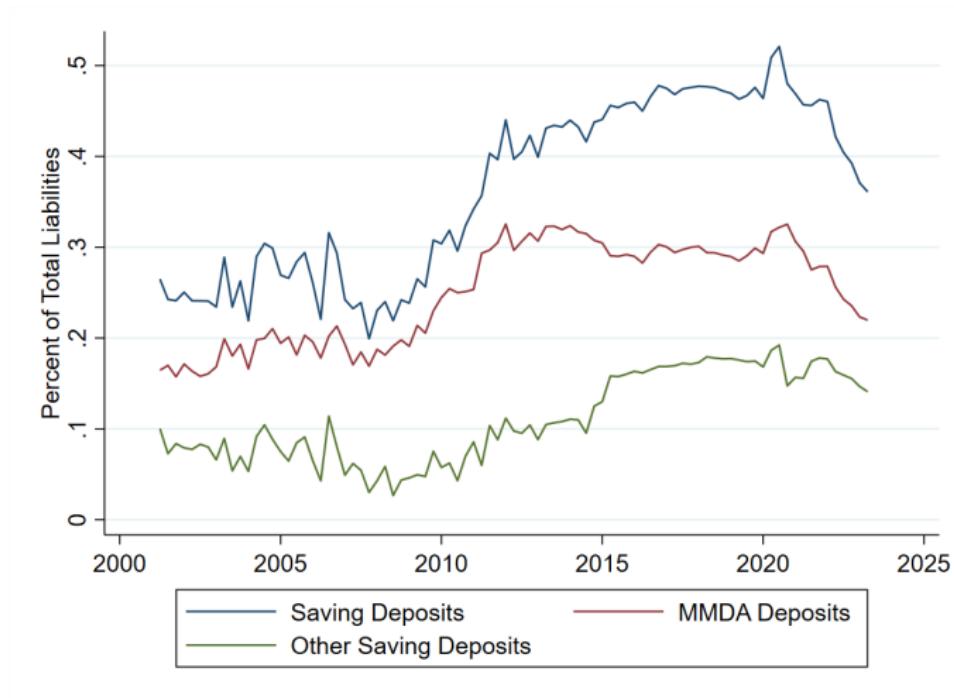
- ④ Construct weighted average $R_t = \sum_{i=1}^{\# Banks_t} R_{i,t} \times w_{i,t}$

- **Samples:** Top 50 Banks: Large Banks (First 20) vs Medium Banks (20-50). Small (>50) not today.

▶ back

Saving Deposits as a share of total liabilities.

Figure: Saving Deposits as a share of Total Liabilities.

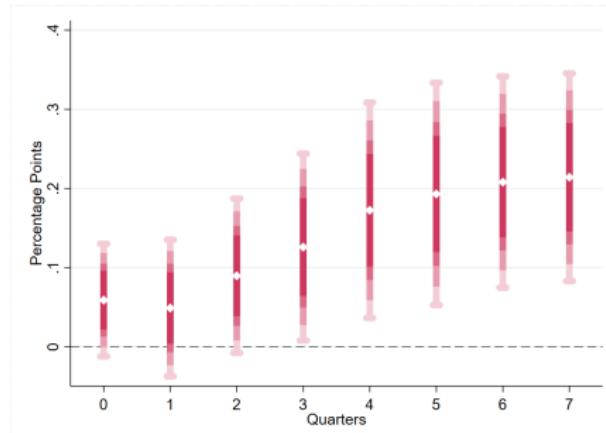
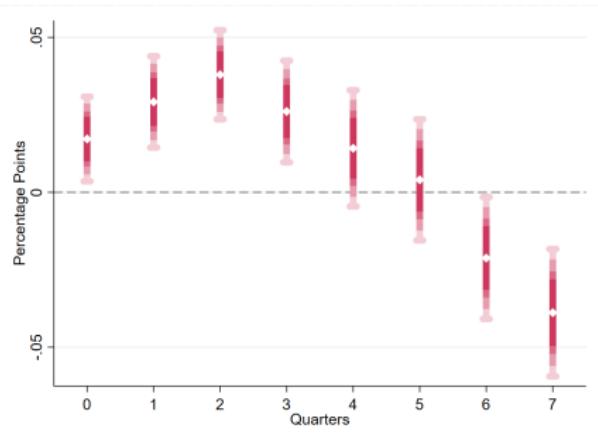


To dig deeper into saving deposits we switch to advertised product rates.

▶ Ratewatch

▶ back

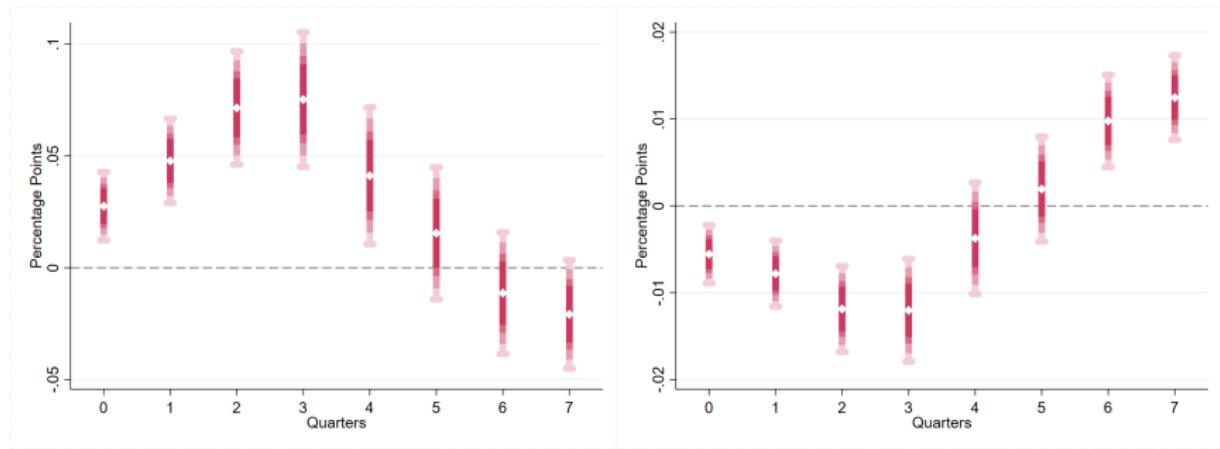
Figure: MMDA 25K. CPI Asset Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

back

MMDA 50K Spread with MMDA25K. CPI Asset Weighted. Top 50 Banks.

Figure: MMDA 50K spread with MM25K. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}

(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

▶ back

Time Deposit Types. Share of Total Liabilities.

Figure: Time Series of Time Deposits. Different maturities as share of Total Liabilities.

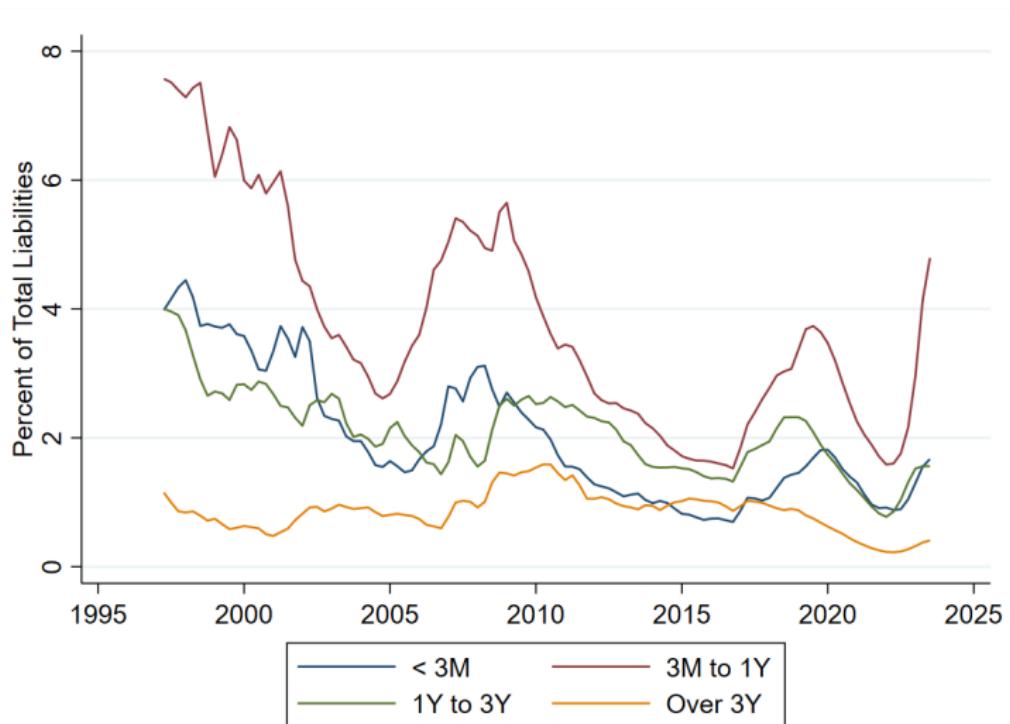


Figure: Spread Treasury 3M - CD 3M. CPI Asset Weighted. Top 50 Banks.

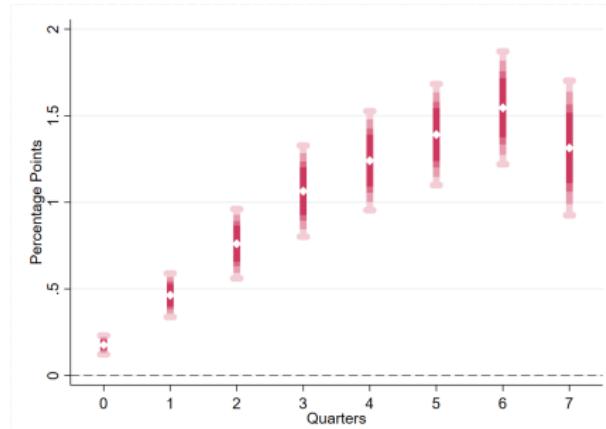
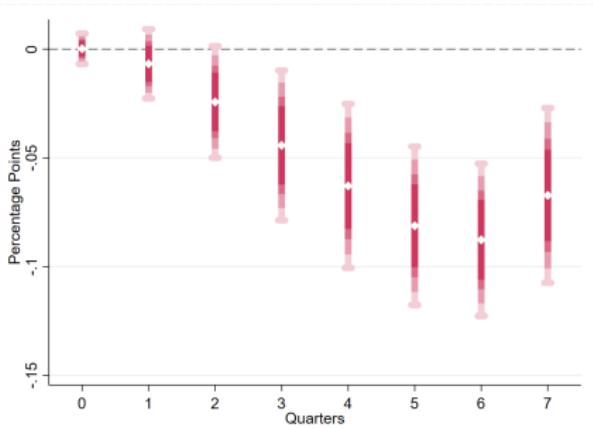
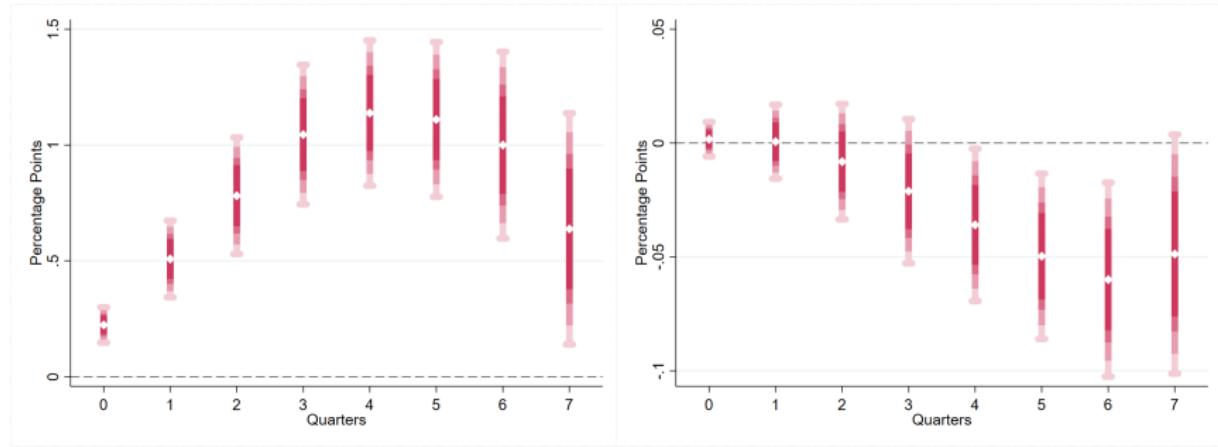
(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Figure: Spread Treasury 1Y - CD 1Y. CPI Asset Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

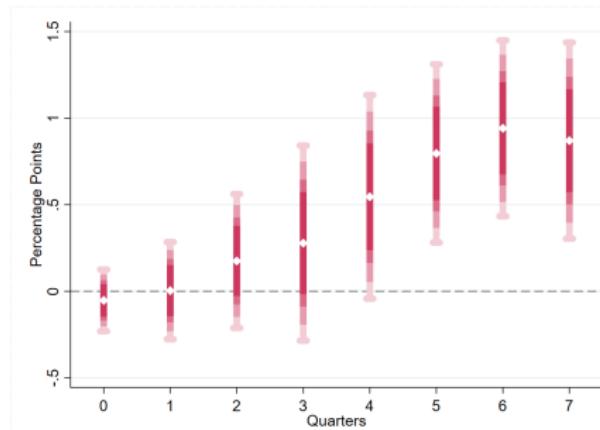
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▶ Robustness Rockets and Feathers

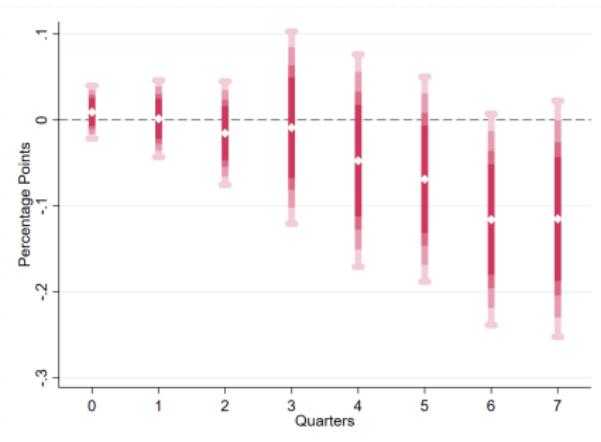
Time Deposit Share of Liabilities. 3M to 1Y. CPI Asset Weighted.

Top 50 Banks.

Figure: Time Deposit, 3M to 1Y, share of liabilities. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}

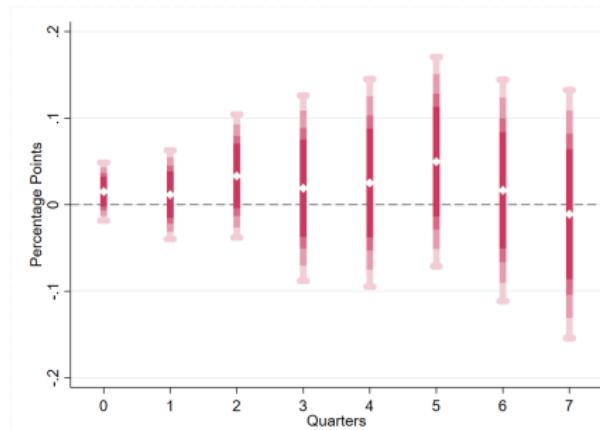


(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

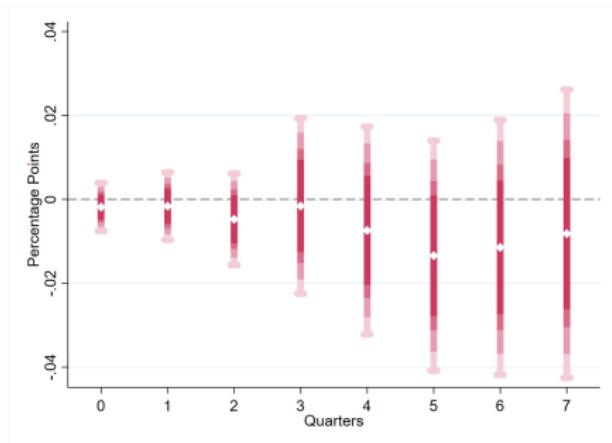
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Time Deposit Share of Liabilities. Over 3Y. CPI Asset Weighted. Top 50 Banks.

Figure: Time Deposit share of liabilities. Over 3 Years. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}

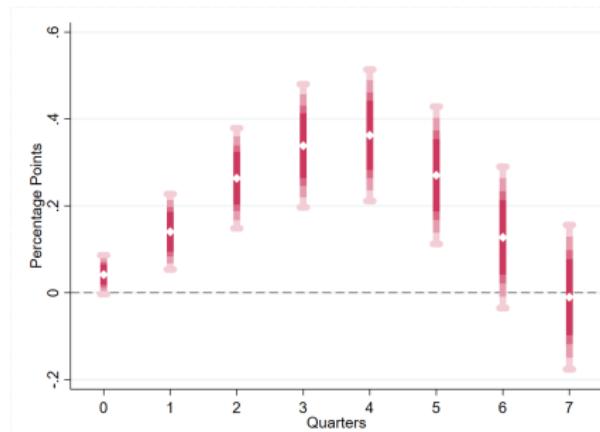


(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

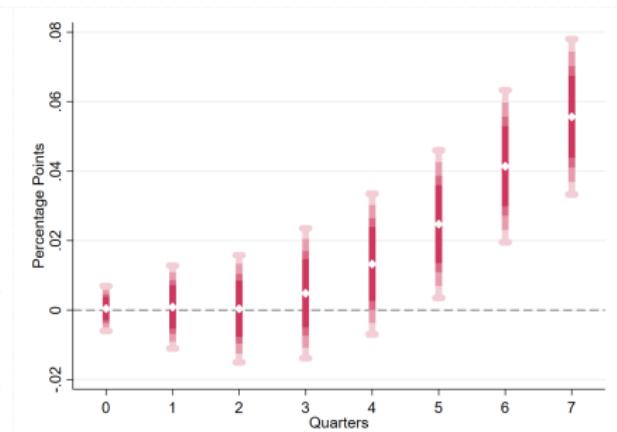
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Transaction Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.

Figure: Transaction Deposit Expense Rate. CPI Asset Weighted. Top 50 Banks.



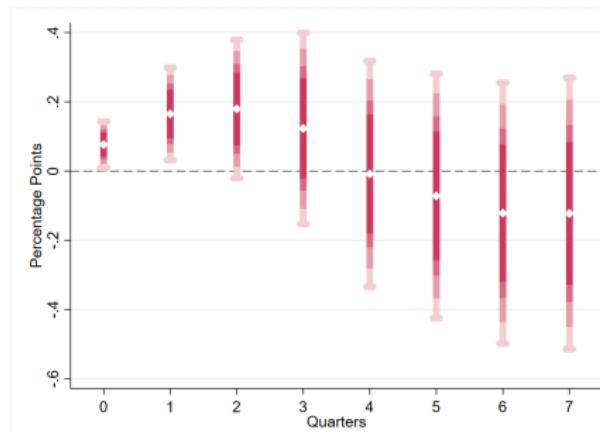
(a) Response to MP_t^{shock}



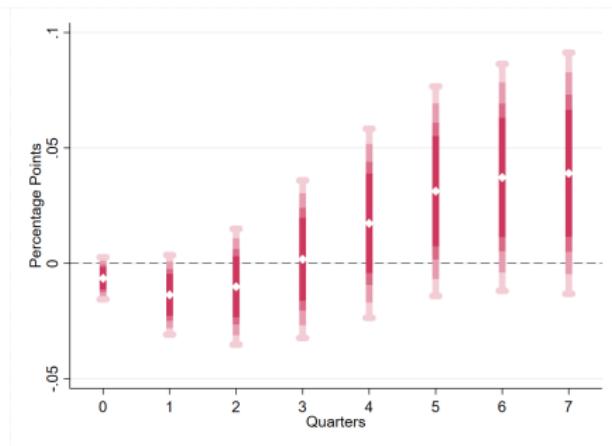
(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Transaction Deposit Share of Liabilities. CPI Asset Weighted. Top 50 Banks.

Figure: Transaction Deposit share of liabilities. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}

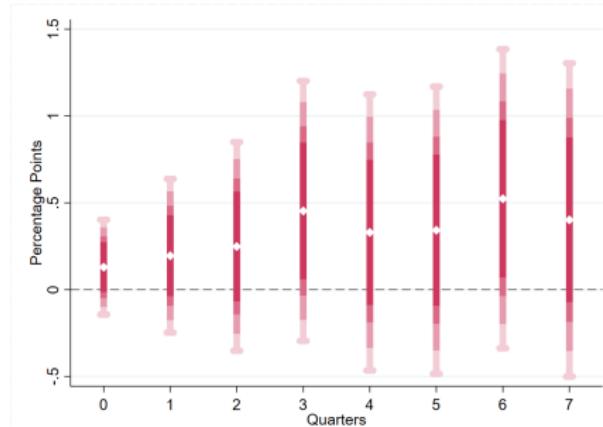


(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

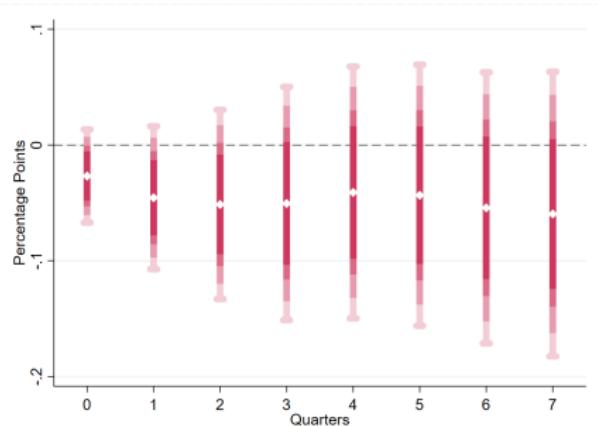
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Foreign Deposit Share of Liabilities. CPI Asset Weighted. Top 50 Banks.

Figure: Foreign Deposit share of liabilities. CPI Asset Weighted. Top 50 Banks.



(a) Response to MP_t^{shock}



(b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

Main Loan Categories. Share of Total Assets.

Figure: Time Series of main Loan Categories. Shares of Total Assets.

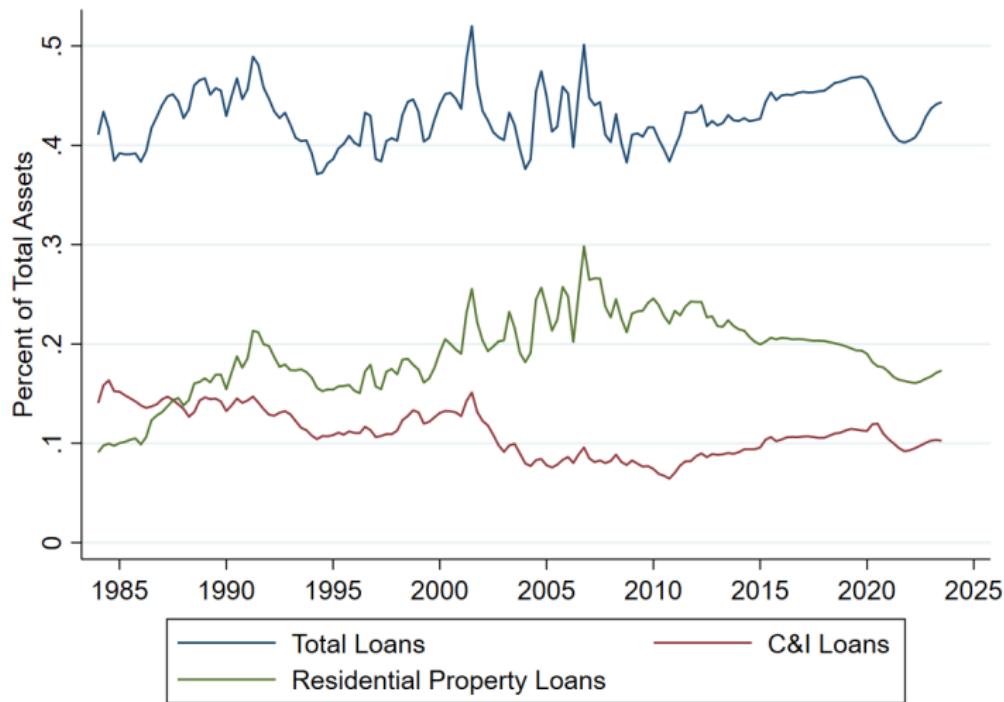
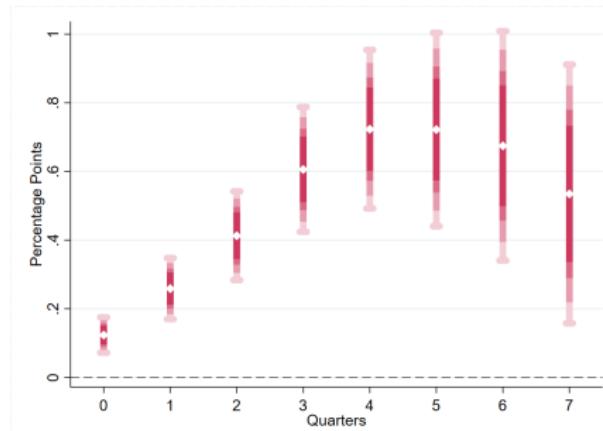
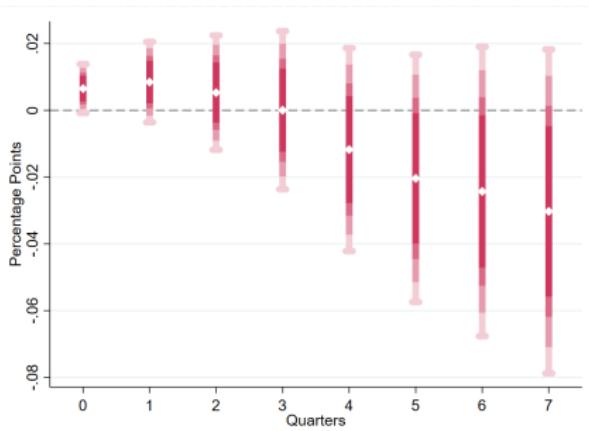


Figure: C&I Loan Income Rate. CPI Asset Weighted. Top 50 Banks.

(a) Response to MP_t^{shock} (b) Response to $MP_t^{shock} \times \hat{FFR}_{t+h}$

More: ▶ back