Discussion: "Banks and the State-Dependent Effects of Monetary Policy"

by Eichenbaum, Puglisi, Rebelo, Trabandt

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Discussion overview

State-dependent effect of monetary policy through banks

Summary of paper

- empirical facts
- competitive banking model with endogenous deposit spreads
- quantitative GE model

Comment

- The model matches the data, but source of state dependence (whether from deposit-wealth MPC or alternative) could be further clarified

Empirical facts

State-dependent effect of monetary policy transmission through banks

Local projections macro- and banking aggregates 1985:Q1-2019:Q4

Effects from tighter monetary policy differ by FFR level

Low FFR Level ($< 4\%$)

$\downarrow$

Banks' NIM ($R^L - R^D$) $\uparrow$

Shift to higher R^D accounts

Pronounced decline in GDP

No effect on prices

High FFR Level ($> 4\%$)

$\downarrow$

Banks' NIM ($R^L - R^D$) $\downarrow$

Smaller shift to high R^D

Small change in GDP

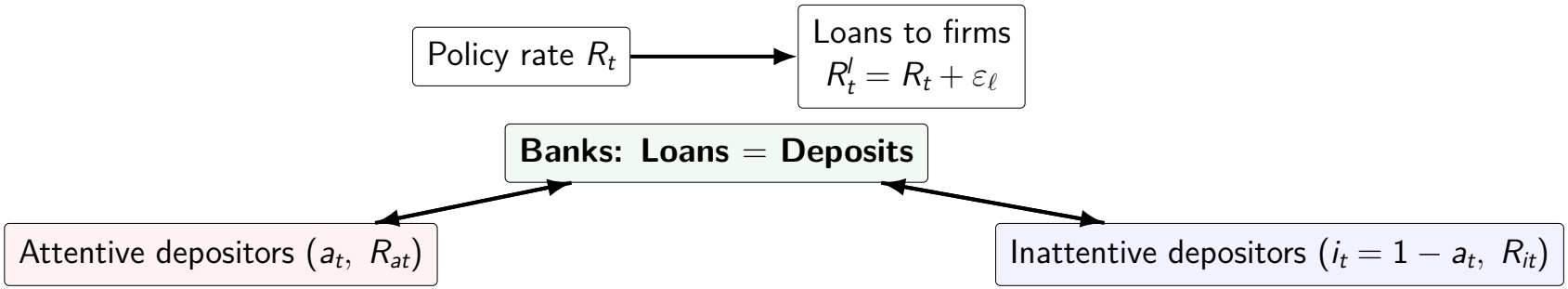
No effect on prices

Robustness:

- preGFC period
- alternative MP shocks
- different FFR threshold rates etc...

Model: positive spreads with competitive banks

Rationalizes state-dependent effect of monetary policy transmission



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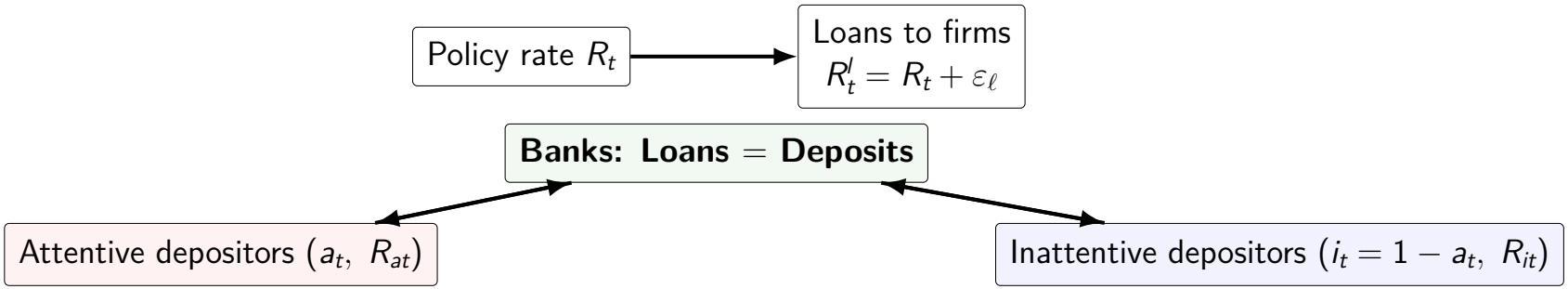

Households' heterogeneous attention to deposit rates: $i_t + a_t = 1$

Value of deposit j: $V_{j,t} = (R_t - R_{jt}) + \frac{1-\delta}{R_t} \mathrm{E}_t V_{j,t+1}, \;\; j \in \{a, i\}$

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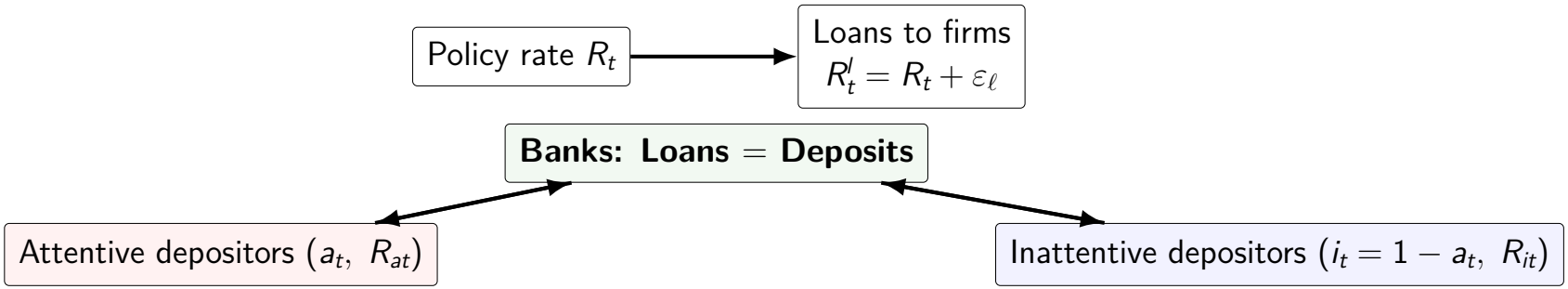

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Banks and households matching:

$m_{at} = \mu(\delta a_t)^{\varsigma} v_{at}^{1-\varsigma}$ and $m_{it} = \mu(\delta i_t)^{\varsigma} v_{it}^{1-\varsigma}$

cost of attracting v_{jt} deposits is $\tau_j v_{jt}$ with $\tau_i > \tau_a$; all deposits match

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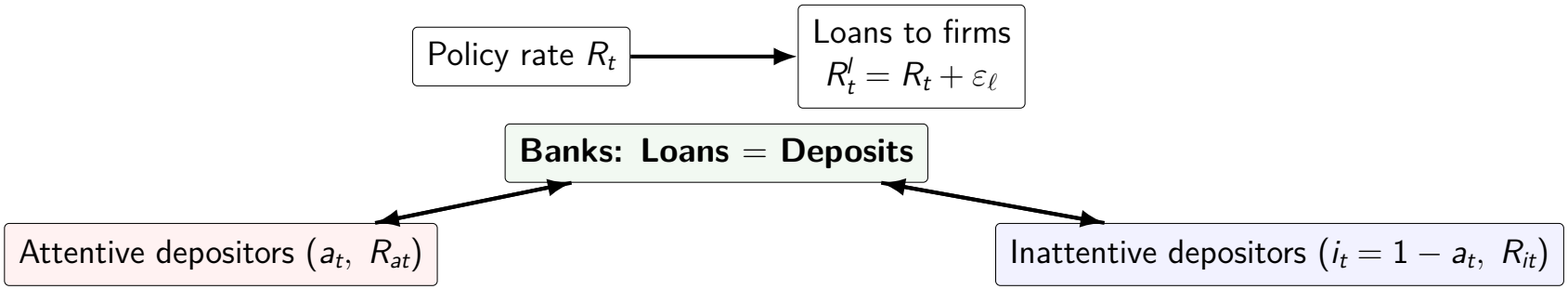

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Zero profit condition (free entry): $\tau_j = \mu^{1/(1-\varsigma)} \times V_{j,t}$

Steady state equilibrium spread $R - R_j = \frac{\tau_j}{\mu^{1/(1-\varsigma)}} \left(1 - \frac{1-\delta}{R}\right)$ properties

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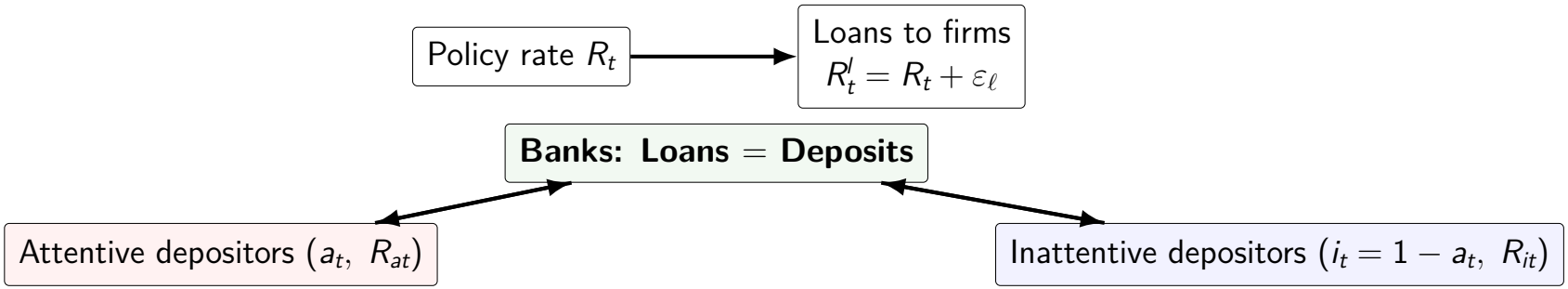

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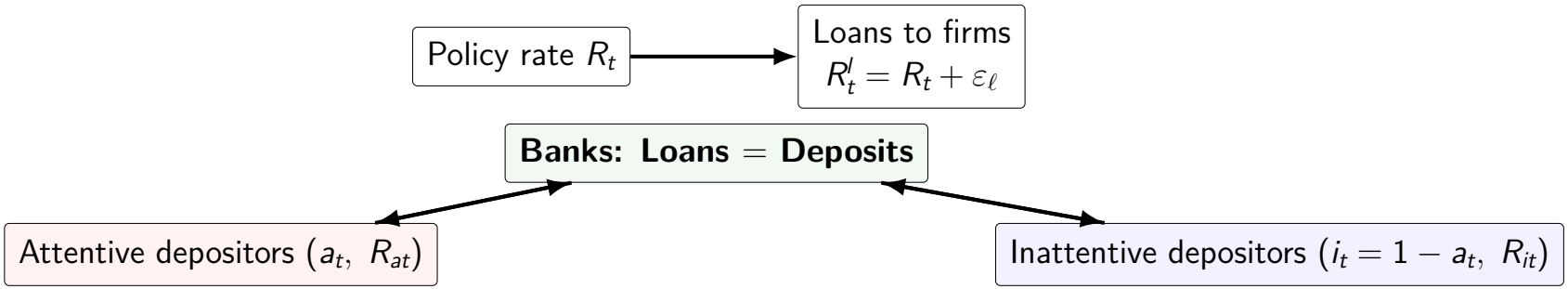

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2. spread response to a rise in R is decreasing in R

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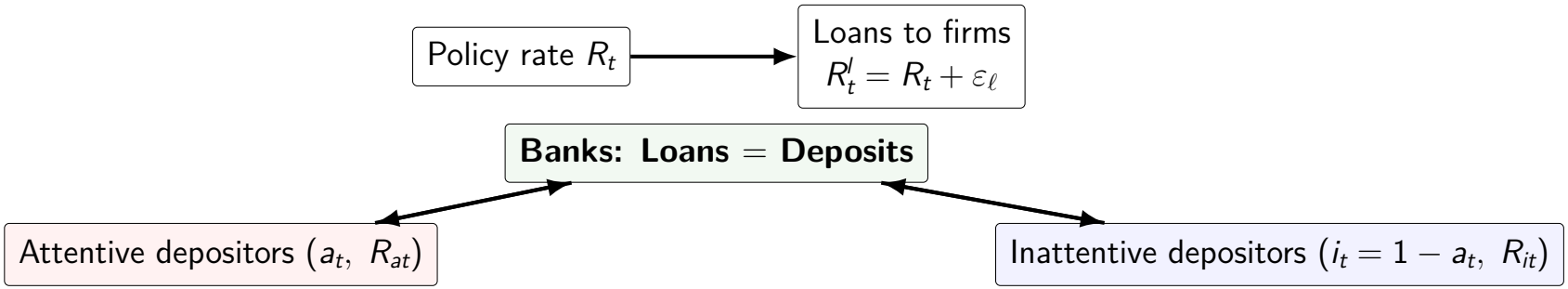

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1. spread is increasing in R
2. spread response to a rise in R is decreasing in R
3. since $\tau_i > \tau_a$: inattentive spread more sensitive to changes in R

Adding social dynamics

Law of motions for i_t and a_t

Social dynamics: $\omega(R_t) = \chi(4R_t - 4)^2$ for pronounced state-dependence

$$\begin{aligned} i_{t+1} &= i_t(1-\kappa_i) - \omega(R_t)a_t i_t(1-\kappa_i) + \kappa_a a_t \\ a_{t+1} &= i_t(1-\kappa_a) + \omega(R_t)a_t i_t(1-\kappa_i) + \kappa_i i_t \end{aligned}$$

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$\text{prob}(i_t \to a_{t+1}) > 0$ higher $\text{spread}_i > \text{spread}_i$ without dynamics

$\text{prob}(a_t \to i_{t+1}) < 0$ smaller $\text{spread}_a < \text{spread}_a$ without dyanamics

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prob$(i_t \to a_{t+1}) > 0$ higher spread$_i >$ spread$_i$ without dynamics

prob$(a_t \to i_{t+1}) < 0$ smaller spread$_a <$ spread$_a$ without dyanamics

Implications for NIM: $= R_t + \varepsilon_\ell - (a_t R_{a,t} + i_t R_{i,t})$

Effect on NIM from rise in R_t

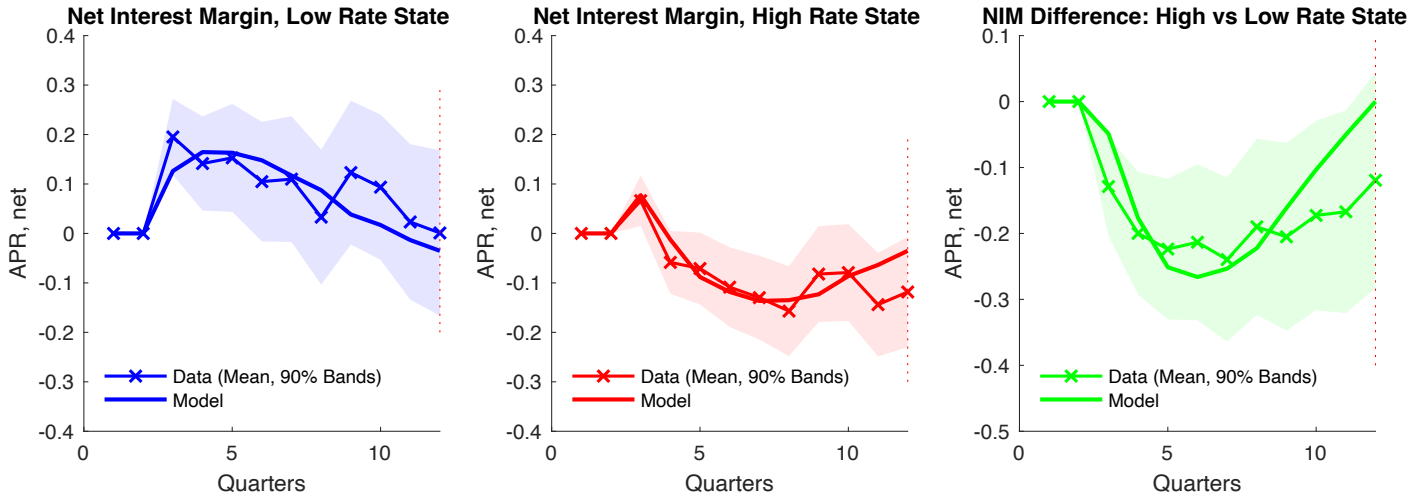
1. (+) Reduction in value through discounting requires offsetting rise in NIM
2. (−) Increases attentive share → reduces spread
3. (+) Higher R_t increases future $i_{t+1} \to a_{t+2}$; reduces future spreads, must be offset by higher NIM$_t$

Effect on NIM from rise in a_t

1. (−) Higher share in attentive reduces spread
2. (+) (If $a_t < 0.5$ & high R_t) higher prob. of $i_t \to a_{t+1}$ reduction in future spreads needs offsetting rise in current NIM

PE model matches NIM response to MP shock

Figure 6: Dynamic response to monetary policy shock: NIM



Social dynamics $\omega(R_t) = \chi(4R_t - 4)^2$ critical for state-dependence

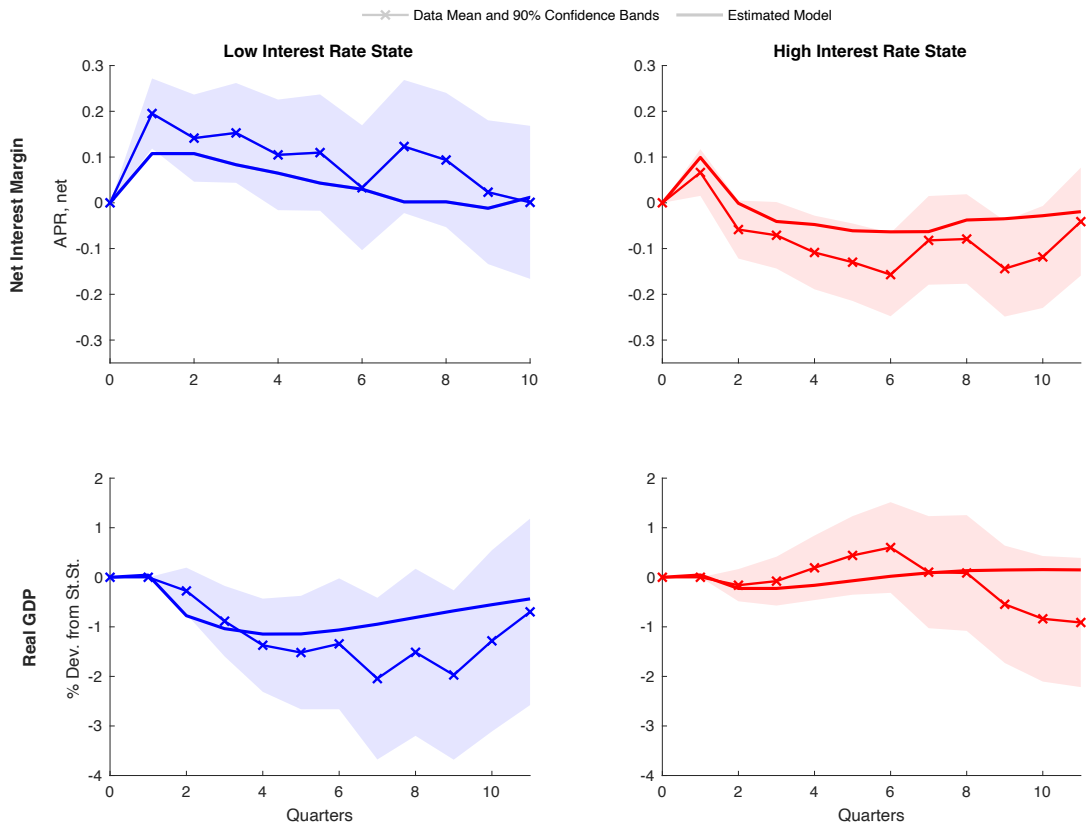
Back-of-the-envelope: roughly \$60b differential shift in agg demand (NIM difference between low and high R_t is \$150b $\times$0.4 MPC)

Contraction in aggregate demand is larger when tightening in low R_t state

Quantitative GE model

Embed partial equilibrium mechanism into medium-scale DSGE based on Christiano, Eichenbaum, and Evans (2005)

Permanent income HH always attentive, high MPC hand-to-mouth HH transition b/w a_t^H & i_t^l



Estimated model fits data well: state-dependent NIM response fully explains state-dependent GDP

Related state-dependent mechanism reversal interest rate

Abadi-Brunnermeier-Koby, AER 2023

At low interest rates, $R_t < R_t^{rev}$ (reversal rate), *tightening* can be expansionary

Mechanism

When $R_t < R_t^{rev} \Rightarrow$ banks' **NIM low** $\Rightarrow$ weak profits $\Rightarrow$ low net worth $\Rightarrow$ constrained credit supply

Rate increase (imperfect deposit rate pass-through) $\Rightarrow$ **NIM widens**

Higher NIM $\Rightarrow$ stronger profits & rise in net worth $\Rightarrow$ **lending expands**

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Can this mechanism deliver state dependence?

Yes. Both mechanisms imply higher NIM in a low-rate environment

But, tightening below the reversal rate is **expansionary** via the bank net-worth channel, but **contractionary** through the depositor MPC channel

Interesting that MPC out of deposit income channel can be quantitatively so strong in light of usually potent bank net worth channel

Possible alternatives channels through credit supply

To match: low rate regime & rate up, NIM up, GDP contraction

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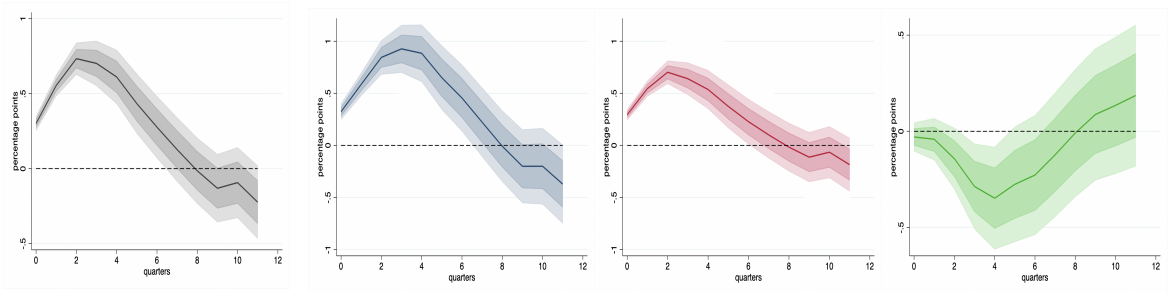
Data also shows that loan yield **rises more** in low R_t regime

Panel C: Loan interest income rate



(i) Baseline (j) Low Rate State (k) High Rate State (l) High vs Low

Contractionary monetary policy in low R_t state

Stronger rise in loan rate feeds into higher NIM to bank owners (potentially differential MPC effects)

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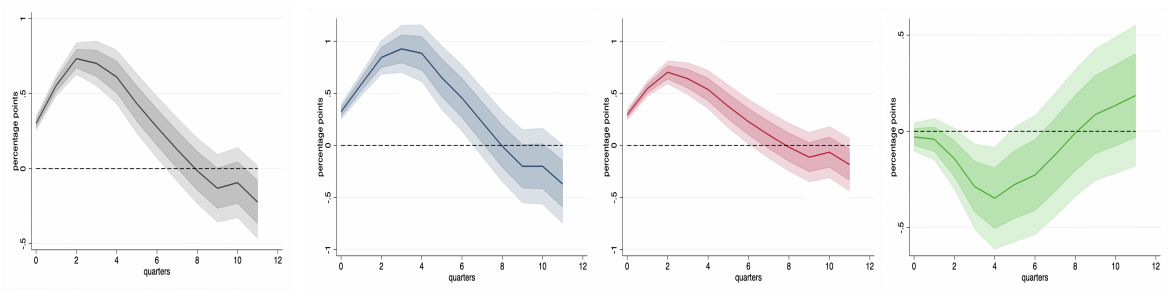

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Also lowers NPV on firms' projects & reduces investment, GDP

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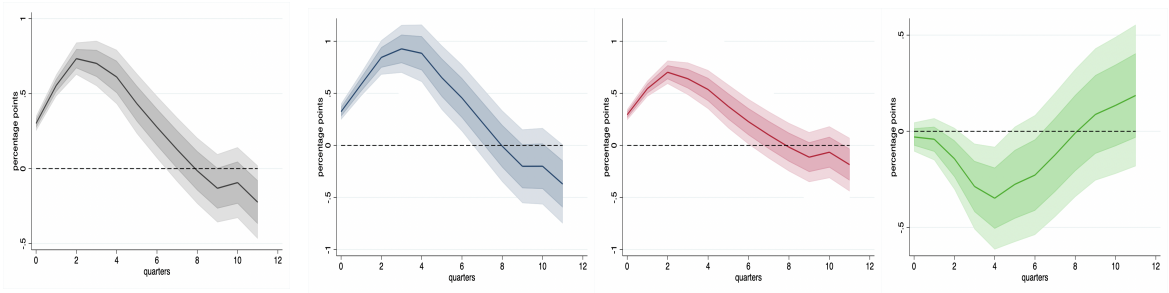

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Also lowers NPV on firms' projects & reduces investment, GDP

Would also differentially lower stock market valuation

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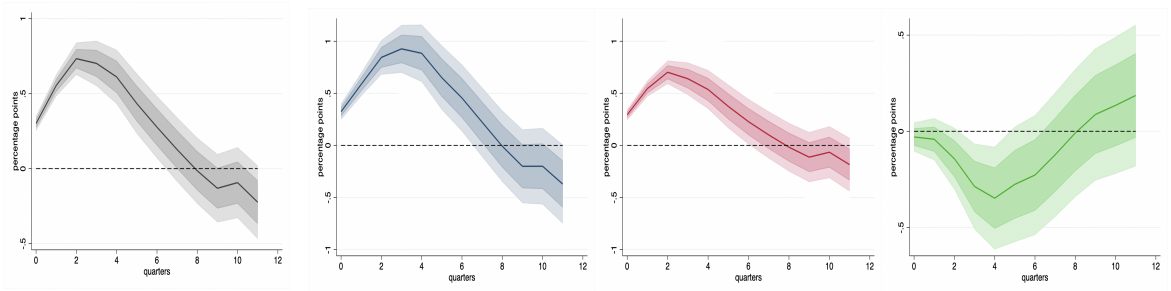

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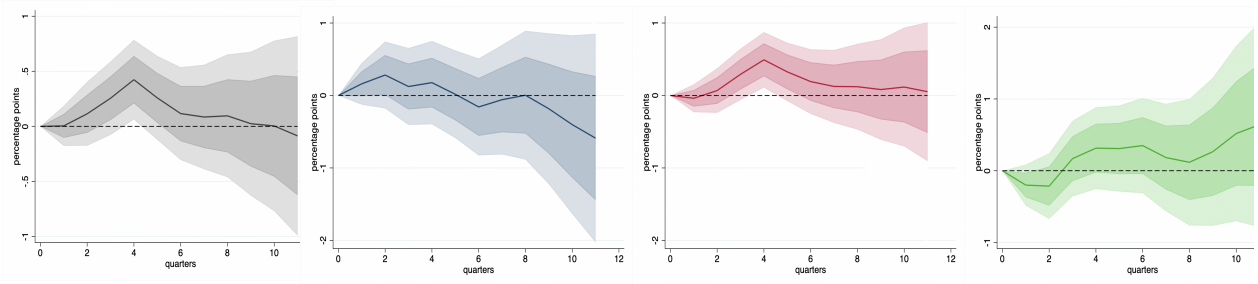
Model currently *does not (?)* feature state-dependence in loan rates

Could add via reduced form adverse selection mechanisms: so banks increase loan rates by less when rate levels are already high to prevent lower quality borrowers from selecting into bank loans

Miscellenous observations

1. Surprised by the no price level response to monetary policy

Panel C: Log PCE Price Index



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2. **Blickle, Li, Lu, and Ma (2025)** have also time-varying attentive/inattentive depositors (and state-dependence in MP) without assuming social interactions

   Depositors differ in rate sensitivity: "attentive" ones value returns more than transaction services

   QE draws rate-sensitive depositors into banks, making them vulnerable when rates rise and they withdraw

3. **Robustness of facts to pre-GFC vs. full sample is interesting.** Secular increase in non-bank intermediation & secular decline in deposit share of savings accelerated post-GFC (e.g., Buchak, Matvos, Piskorski, and Seru, 2024) should have dampened any bank-based transmission mechanism.

Conclusion

Impressive paper with interesting empirical facts, an elegant mechanism, and interesting macro-implications

Strong model fit—but is the data fact driven by deposit-wealth MPC alone or additional other mechanisms (e.g., state-dependent loan rate adjustment)?