Discussion of Andres-Arce-Thomas "Collateral Constraints, Banking Competition, and Optimal Monetary Policy"

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Excellent (embrio of) paper!

- Features of the model

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1. **NK core**

2. **Heterogeneity** $\rightarrow$ Needed to generate trading of **debt** in equilibrium: when aggregate income rises, one agent should be (optimally) willing to borrow and one to save

3. **Credit frictions**

- **Credit frictions: 2 sides**

1. Entrepreneurs need to pledge **commercial housing** as a collateral to borrow

2. Financial intermediation: **spatial** model of banking $\rightarrow$ Endogenous credit spreads

- Other **details**

1. One final good sector $\rightarrow$ Housing supply fixed

2. Only households supply labor

3. Entrepreneurs combine labor and commercial real estate to produce intermediate good

Acceleration and **persistence** effects in this model

↓ productivity

1. **Within-period acceleration**: ↓net worth   ↓demand of real estate (since borrowing is limited) ↓ house prices   ↓ collateral value   ↓borrowing ↓demand of real estate [...]

2. **Across-period persistence**: ↓demand of real estate (↓investment) ↓**future** income (output)   ↓future net worth ↓future investment [...]

- Results on **optimal monetary** policy

1. Credit frictions $\rightarrow$ Additional **tradeoffs** relative to baseline NK model $\rightarrow$ Flex P equilibrium **not** optimal (despite efficient steady state)

2. **Banking competition** exacerbates tradeoffs

Intuition on tradeoffs

- **Simpler model**: fixed labor supply, no durable asset, **exogenous** borrowing limit for one agent, exogenous endowment

- Two agents: patient and impatient

Social planner

$$\max \omega \log C_t^b + (1 - \omega) \log C_t^s$$

$$s.t.$$

$$C_t^b + C_t^s = Y_t^b + Y_t^s$$

If $\omega = 1/2 \rightarrow$ SP equates marginal utility of **real** income across agents:

$$\lambda_t^b = \lambda_t^s \text{ for all } t \text{ and states}$$

Decentralized equilibrium $\rightarrow$ Incomplete markets

- **Borrower**

$$\max \; \sum_{t=0}^{\infty} \beta^t \log C_t^b$$

$$P_t C_t^b + R_{t-1} B_{t-1} = P_t Y_t^b + B_t$$

$$B_t = (1 - \chi)\overline{B}$$

Note: **exogenous** borrowing limit

- Efficiency conditions

- Borrower

$$\lambda_t^b = \beta R_t E_t \left\{ \frac{\lambda_{t+1}^b}{\pi_{t+1}} \right\} + \underbrace{\psi_t}_{\text{shadow value of borrowing}}$$

- Saver

$$\lambda_t^s = \gamma R_t E_t \left\{ \frac{\lambda_{t+1}^s}{\pi_{t+1}} \right\}$$

- If ψ_t time-varying $\rightarrow$ need π_t to be time-varying to replicate first-best

- State contingent movements in **inflation** allow to "complete the markets"

- Quadratic loss function in ATT

$$L_t \;=\; \alpha_\pi \pi_t^2 + \alpha_y (y - y_t^*)^2 \quad \text{(standard)}$$

$$+ \alpha_c (c - c_t^e) \qquad \text{(complete mkts motive)}$$

$$+ \alpha_h \left(h_t - h_t^* \right)^2 \qquad (\; \textit{endogenous} \text{ borrowing constr.??})$$

- Two aspects

1. Role of borrowing constraint per se

2. Role of **endogenous** collateral constraint $\rightarrow$ motive for house (**asset) price** stabilization?

real housing prices

— optimal
—•— inflation targeting
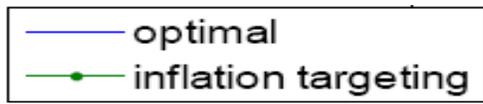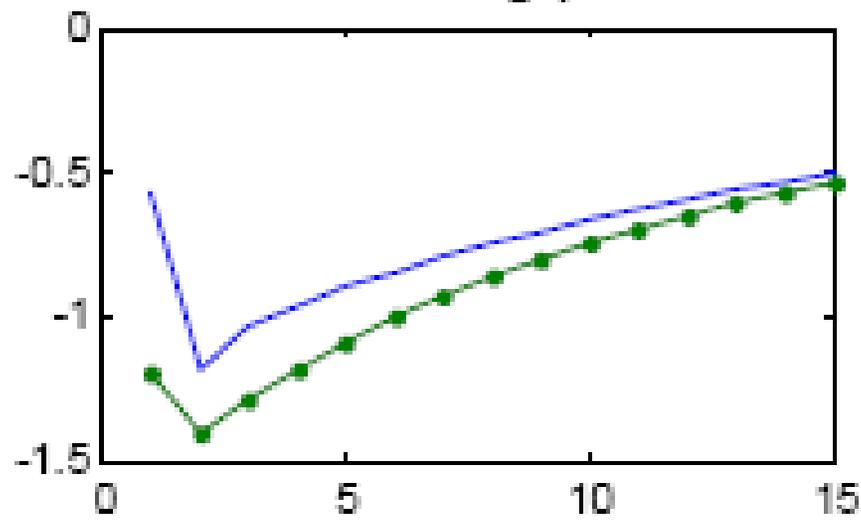
ATT: *"Closing the consumption gap involves active demand management (to manipulate MP of housing and housing prices) and deviations from price stability"*.

- Role of banking competition

Optimal policy

Banking regime	$4\sigma(\hat{\pi}_t)$	$\sigma(\hat{y}_t - \hat{y}_t^*)$	$\sigma(\hat{c}_t - \hat{c}_t^e)$	$\sigma(\hat{h}_t - \hat{h}_t^*)$
baseline calibration	0.81	0.49	3.49	1.41
perfect competition	1.12	0.69	3.00	0.64

$\rightarrow$ Banking competition smoothes impact of distortions related to credit market imperfections

- Intuition?

1. Banking competition $\rightarrow$ Consumption of entrepreneur more sensitive to house prices

2. Need smaller movements in asset prices to achieve optimal distribution of housing across agents

3. Intuition for consumption gap?

- The **monetary transmission mechanism**

(i) Are we getting the basic facts on **prices** (credit spreads) and **quantities** right?

(ii) Distinction **entrepreneurs** vs **households** meaningful?

- In the model: credit spread $R^e - R^d$ is **countercyclical**

- Note: both unconditionally and conditionally

- **Data**: cyclicality depends on **type** of spread

Spread with FFR	Correlation with US GDP growth
30-yr mortgage	0.17
New car loans (48 months)	0.15
Personal Consumer credit (24 months)	0.15
Prime Loan Rate	-0.11
Commerc.& Industr. loans	-0.41
Baa - AAA	-0.23

sample: 1970:1 2008:4

- Lending spreads and the **monetary** transmission

- Cara and Lown (2002): credit spreads **fall** in response to monetary policy **tightening**

- Facts on **prices: IRs** to **FFR** innovation

- Quarterly VAR 1977:1 - 2008:4

- Standard recursive assumption for identification of monetary policy shocks

30Y MORTGAGE - FFR
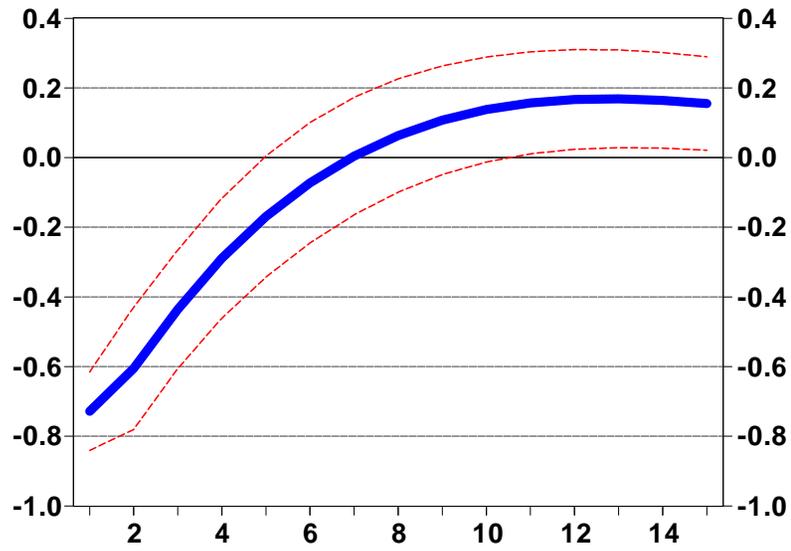
New Car Loans - FFR
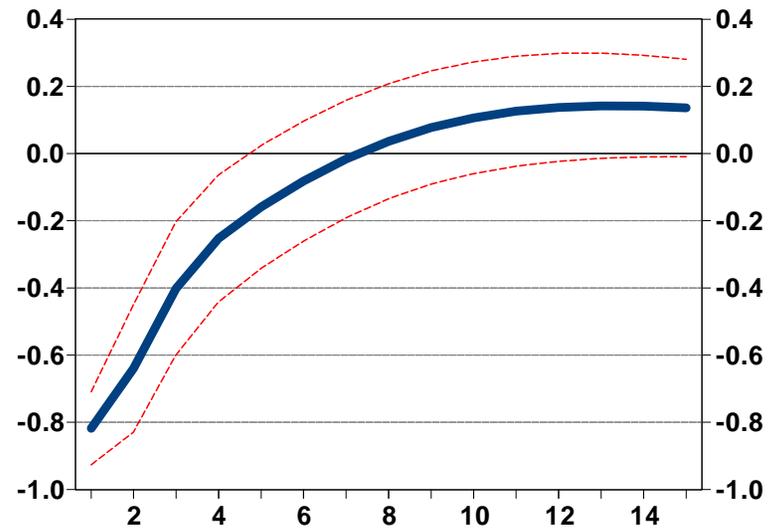
Personal Consumer Credit - FFR
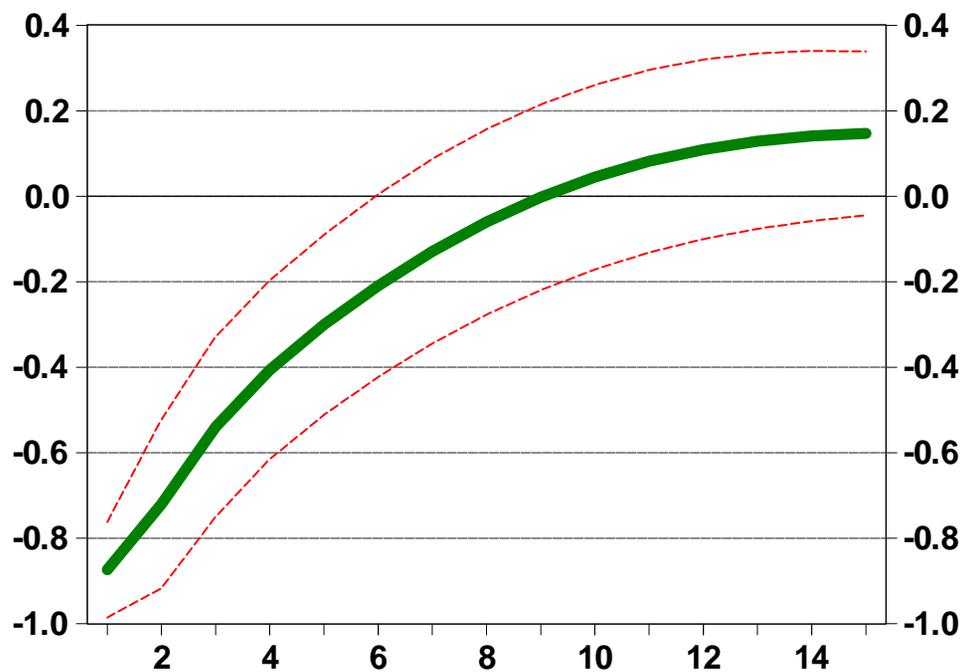
Prime Rate - FFR
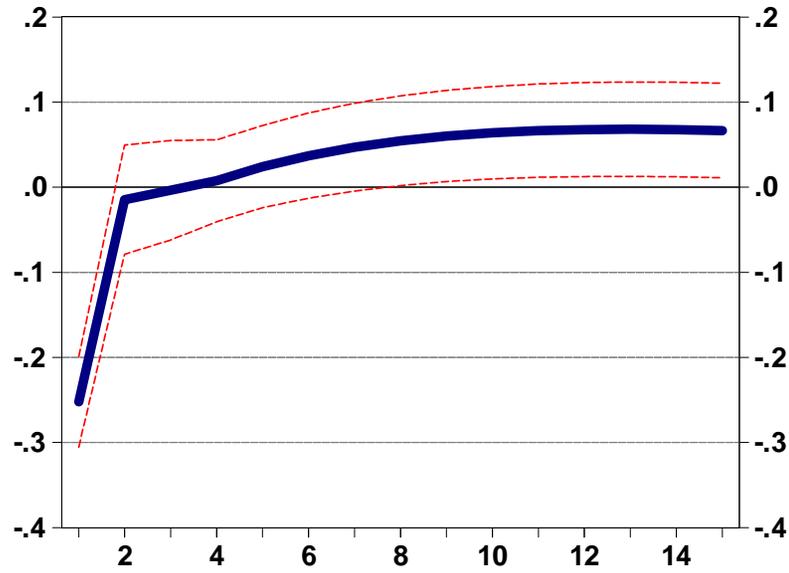

Commercial & Industrial Loans - FFR
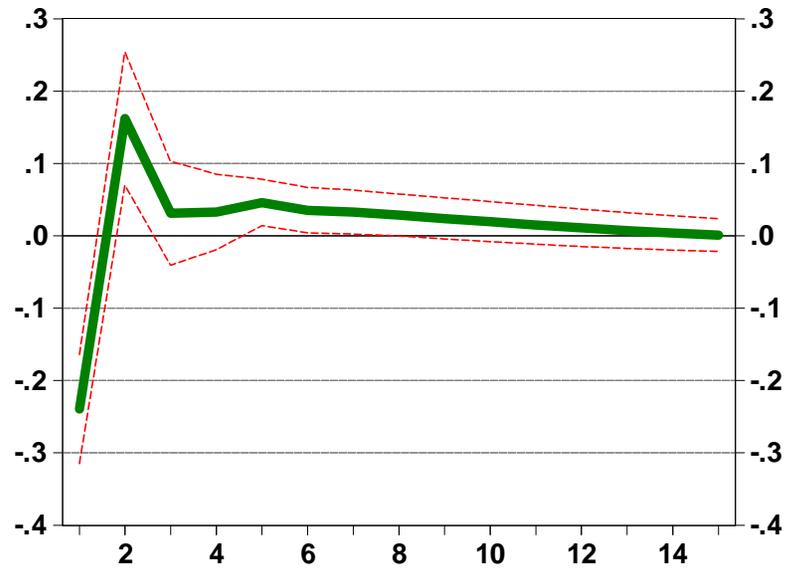
FED Funds Rate
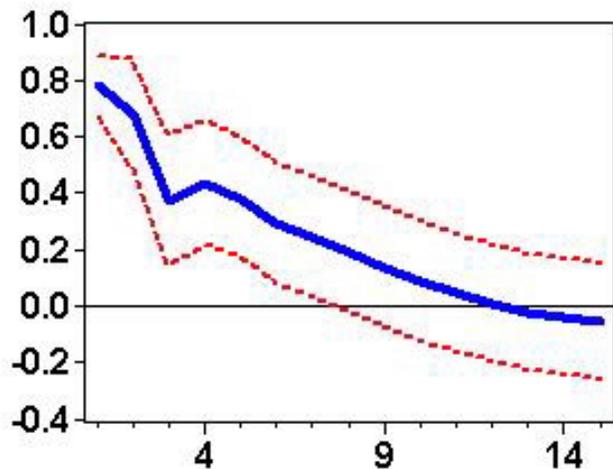
Bank Prime Loan Rate
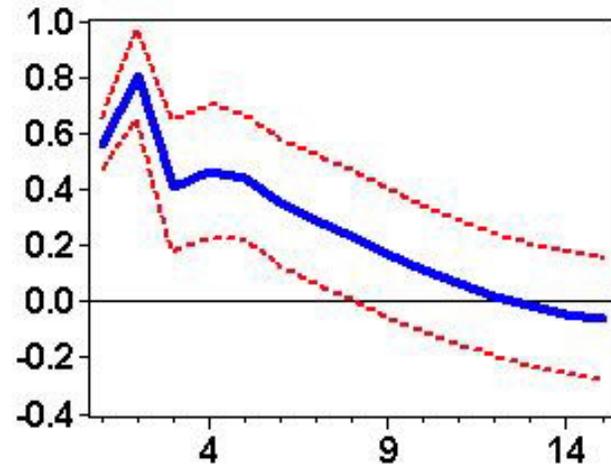
## 24-Month Personal Credit Rate
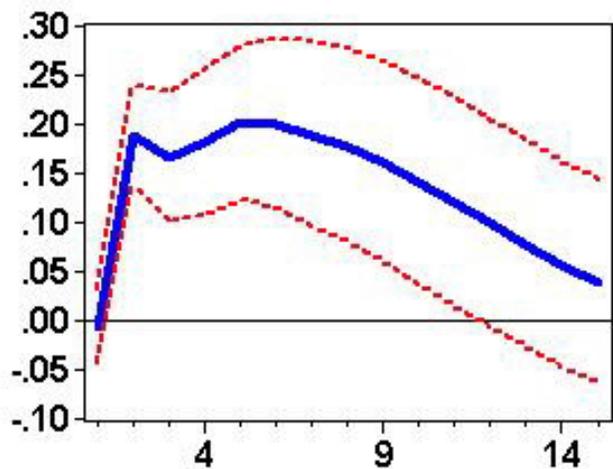
Mortgage Rate
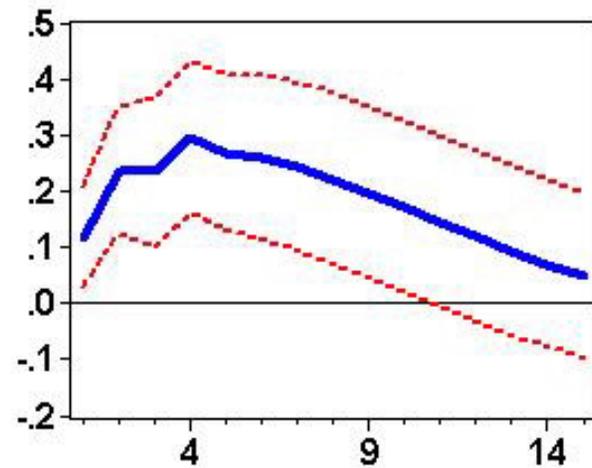
(i) **Mortgage/consumer** loans' rates significantly smoother than **prime rate on business loans**

(ii) Is it a matter of different **maturity/risk premia**?

Bootstrap, difference in IRFs:
Prime Rate versus 30-Y Mortgage Conventional Rate
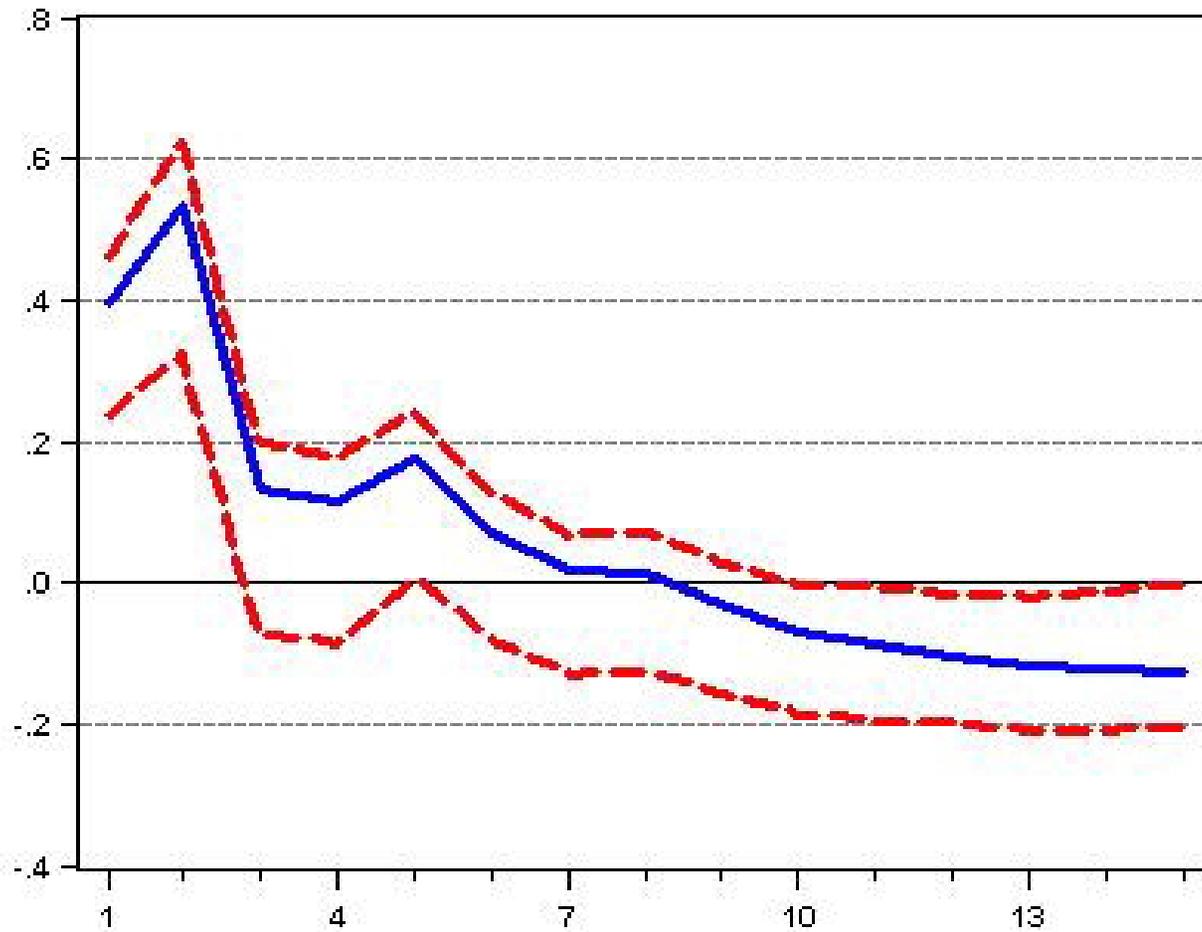
Bootstrap, difference in IRFs:
**Prime Rate versus 48-Month New Car Personal Rate**
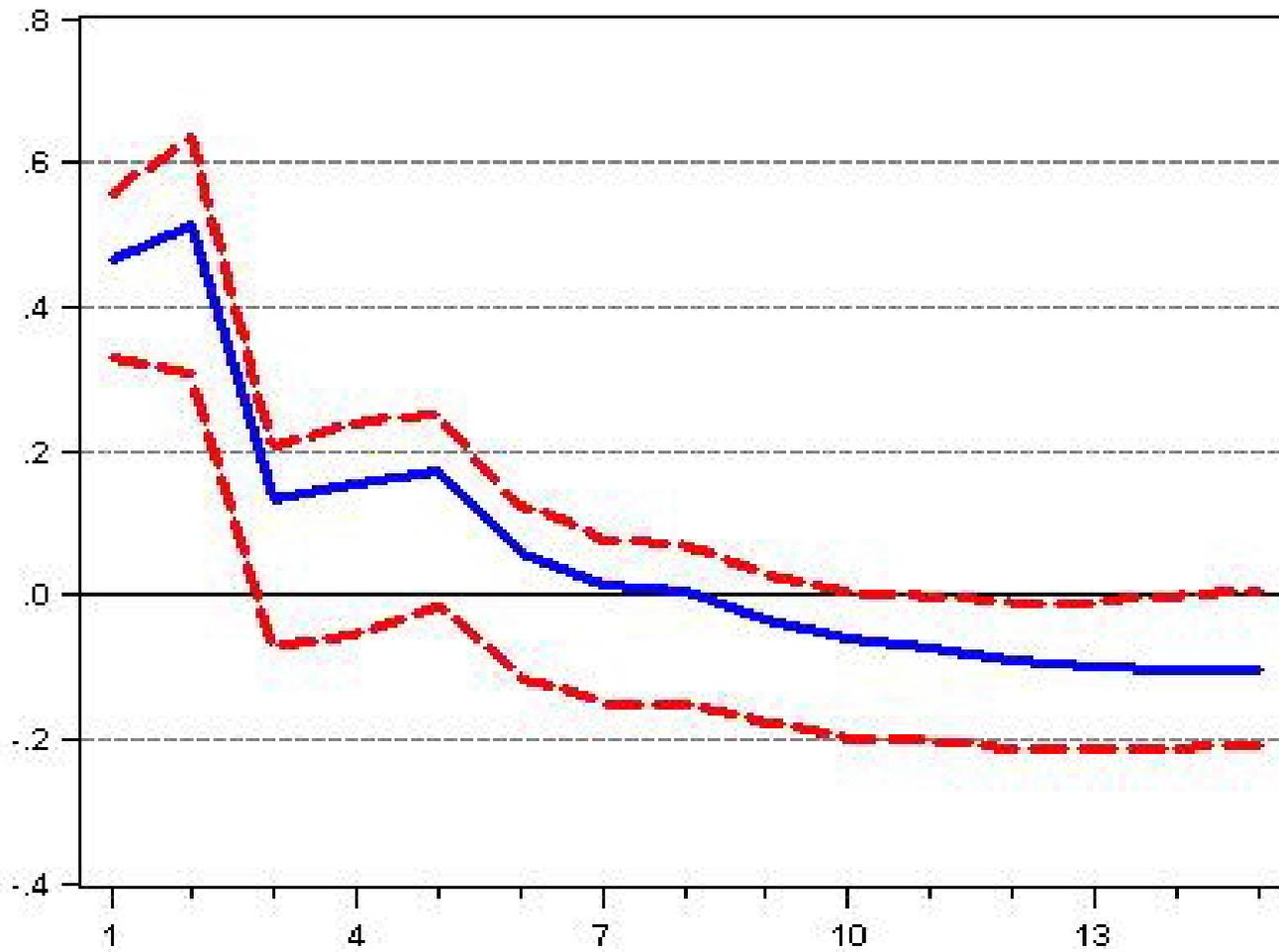
Bootstrap, difference in IRFs:
**Prime Rate versus 24-Month Personal Credit Rate**
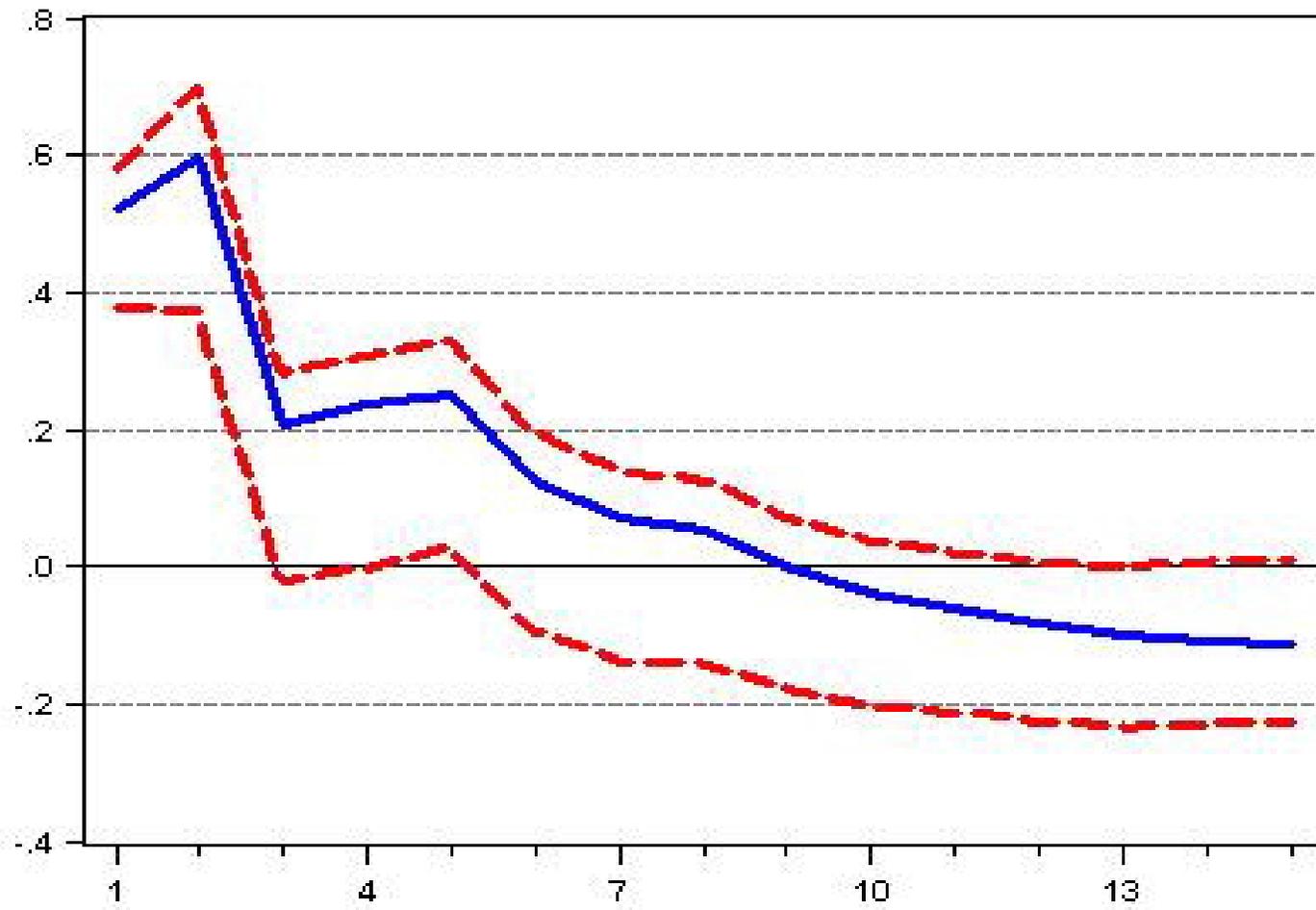
- Not sure maturity is the explanation

- More likely a matter of **typology of borrower**: firms vs households

- Facts on **quantities** $\rightarrow$ Banks' **portfolio** re-allocation (den Haan et al. 2007)

- Sample: 1977-2004

- Source of data: http://www1.feb.uva.nl/toe/wdenhaan.shtm

Commercial and Industrial Loans
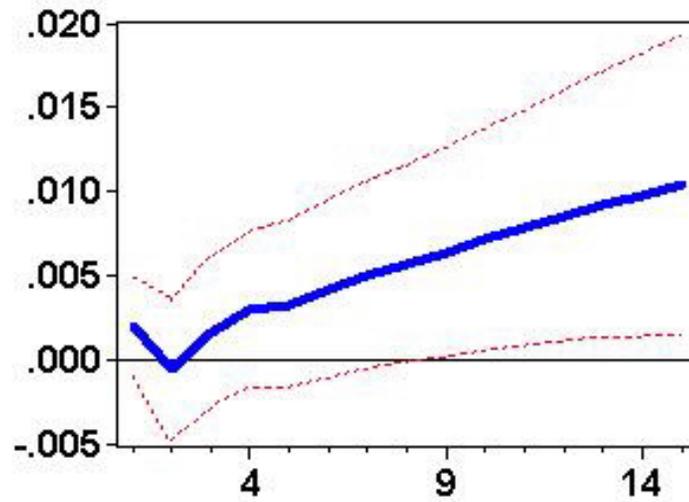
Real Estate Loans
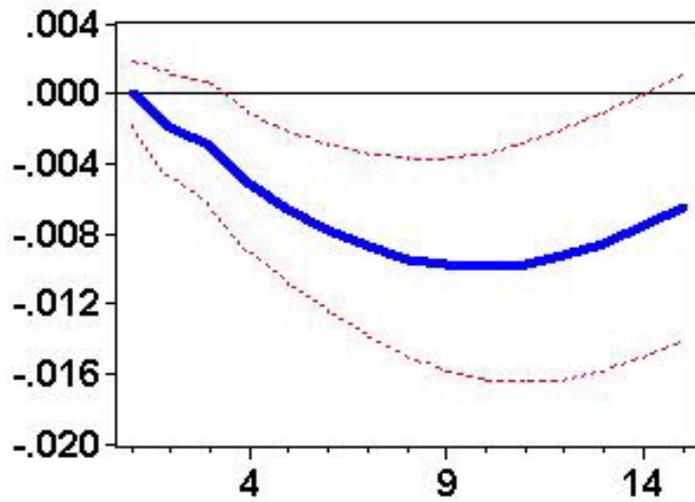
Consumer Loans
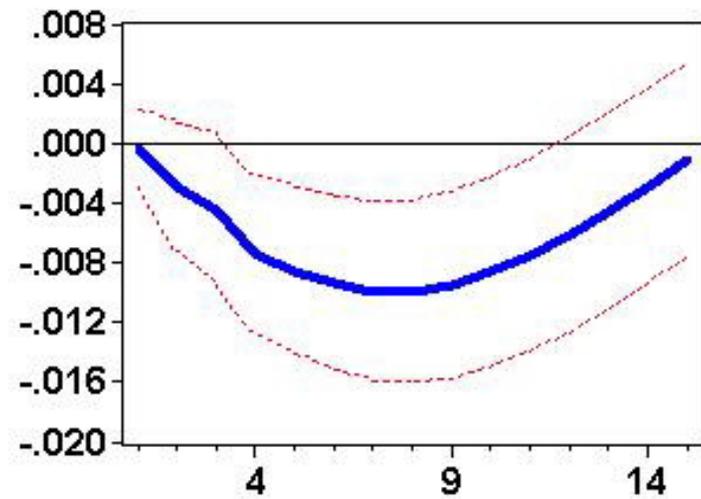
(i) Response of **business** loans positive

(ii) Response of **consumer/real estate** loans negative

- Why higher (different) sensitivity of **residential/consumer** loans?

1. **Stickiness** of mortgage/consumer rates

2. When interest rates rise $\rightarrow$ households perceived **more risky**

3. $\uparrow$ short term rates $\rightarrow$ banks substitute away from long-term assets (mortgages)

4. Households' balance sheets more sensitive to **asset prices**

- View of the monetary transmission mechanism: households' **more subject to credit constraints** when interest rates change

$\rightarrow$May explain why **residential investment** much more sensitive than **business** investment to monetary shocks