Monetary Policy Shocks and Financial Stability

Evidence from the Great Depression

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Research Question

- How does monetary policy influence the lending of banks and stability of the financial system?
- 2023 US banking turmoil focused attention on exposure to interest-rate risk. We explore its effects on lending and bank closures.
- Active debate on effects of *monetary tightening*
  - Lending: Romer and Romer 1990; Bernanke and Blinder 1992; Kashyap and Stein 1995, 2000; Ashcraft 2006, Morris and Sellon 1995, Oliner and Rudebusch 1995
  - Stability: English et al. 2018; Jiang et al. 2023; Haddad et al. 2023; De Marzo et al. 2024; Drechsler et al. 2021
- Empirical challenges include identification & measurement
  - Endogeneity of monetary policy, interest rates, and bank lending
  - Effects depend on regulatory & monetary regimes, deposit franchise, frictions

Empirical Strategy

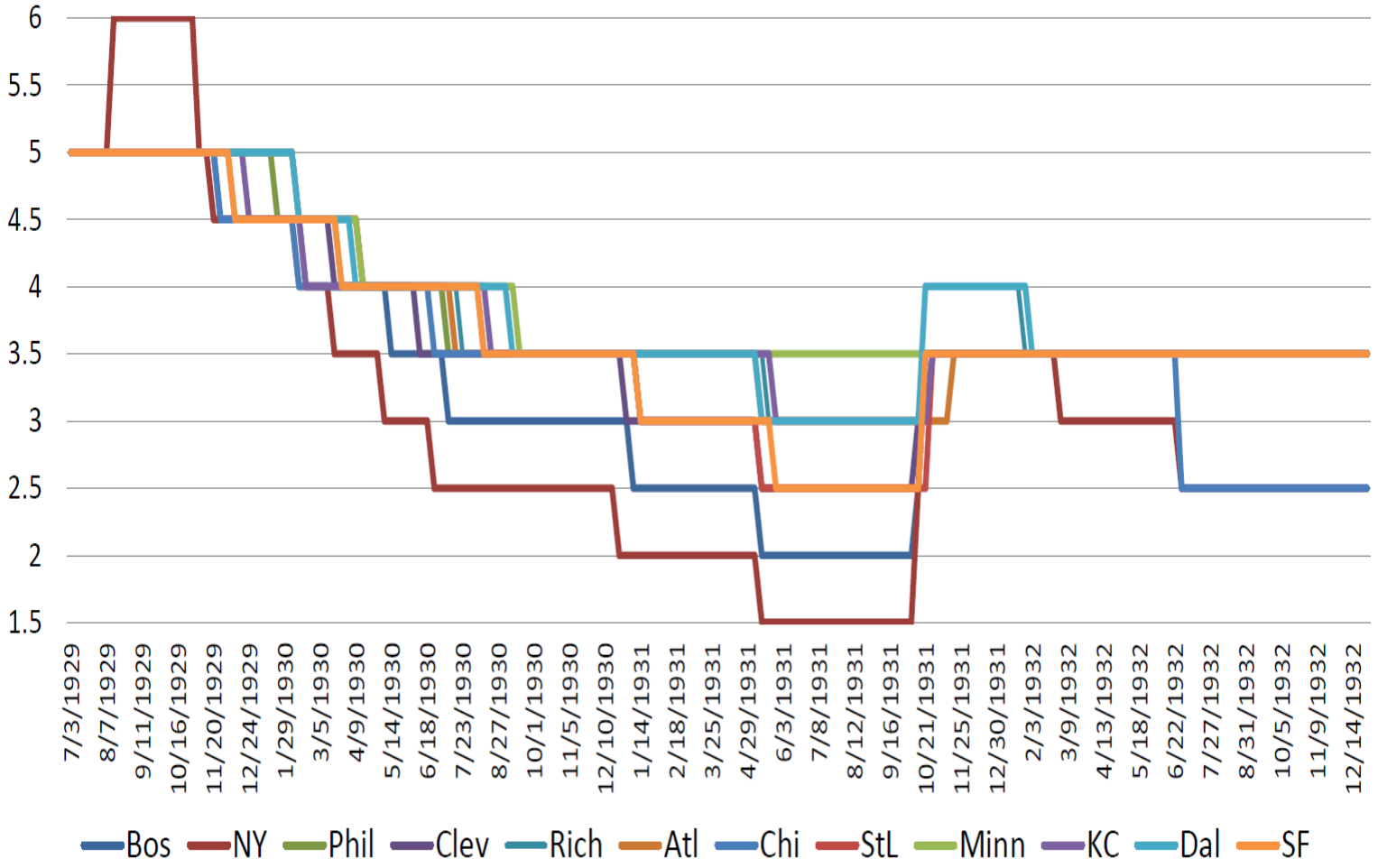
- We exploit a sudden and unexpected adverse monetary policy shock to examine how monetary tightening affects commercial bank balance sheets, bank survival, and local economic activity
- US monetary policy shock driven by foreign events & monetary policy
  - Approach related to foreign MP shocks and sensitivity to capital outflows can impact domestic monetary policy and financial conditions (Morais et al. 2019; Rey 2013; Miranda-Agrippino and Rey 2020; Kaminsky et al. 2004) and foreign shocks to identify exogenous effects on domestic financial systems (e.g., Schnabl 2012)

Exogenous Monetary Policy Shock

- Great Britain abandons the gold standard in Sept. 1931
  - Gold outflows emanating from the failure of the Credit-Anstalt (Austria) & Central European banking crisis (Blickle et al. 2024)
- U.S. Federal Reserve System responds to European events by hiking its policy rate to maintain its peg to gold
  - To stem gold outflows, NY Fed raises its discount rate by 200 basis point between 10/9-10/16/31 – one of the largest and most rapid increases it Fed history
    - "When the bank brought in a 1½ per cent. rate it made no bones of the fact that it was out to protect British gold reserves." (*Financial Times*, 10/9/31)
    - "[New York] is bearing strain akin to that from which London has relieved itself for the present." (*Financial Times*, 10/17/31)

Other Fed District Banks also raise rates in Oct 1931

Weekly Discount Rates By Fed District



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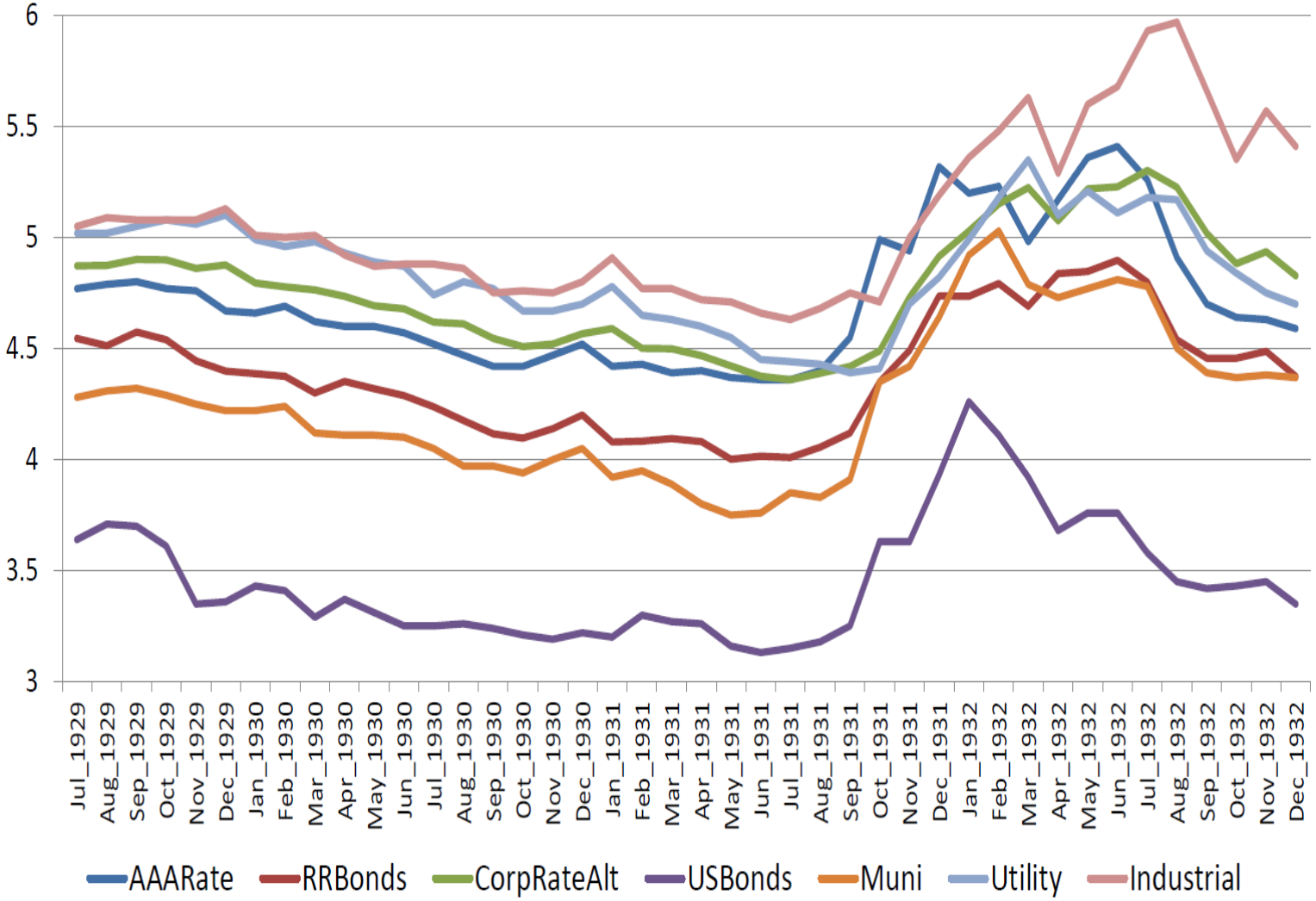
    - "[New York] is bearing strain akin to that from which London has relieved itself for the present." (*Financial Times*, 10/17/31)
  - Other interest rates in the economy move in the same direction, e.g., long-term corporate bond rates surging through mid-1932

Other Interests Rates Rise in Response to Unanticipated Fed Policy Reversal



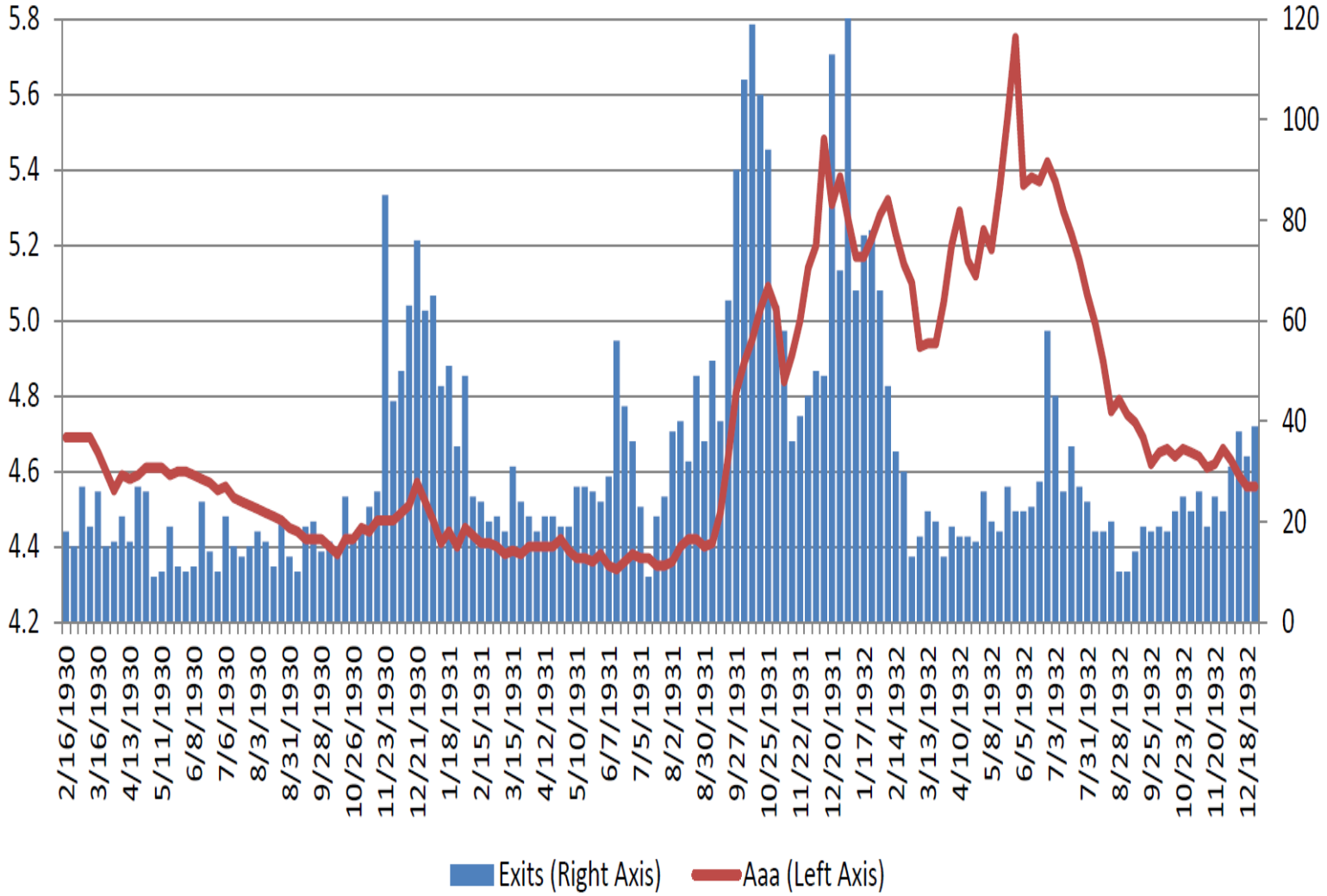
October 1931 Fed Policy Shock

- Monetary policy surprise
  - Discount rates were declining prior 2 years
  - Sudden & unanticipated nature of policy reversal mitigates endogeneity concerns and anticipatory effects
    - Considerable debate within Fed about optimal response to UK's departure from gold (Chandler 1971; Friedman and Schwartz 1963, Wheelock 1992)
- Commercial banks in 1931 vulnerable to a reversal in rates
  - In response to AD↓ and bank runs, commercial banks had been cutting lending & *purchasing bonds* for liquidity mgmt., i.e., for use in response to rapid depositor withdrawals (no DI)
  - Limited ability to hedge risk (no interest-rate swaps), and regulators in many states required bonds to be *marked to market*
    - Declining bond values → potential channel for increased bank distress
  - Difficult to offset shock by raising net-interest margins due to the competitiveness of local and national banking markets (difference w/today)

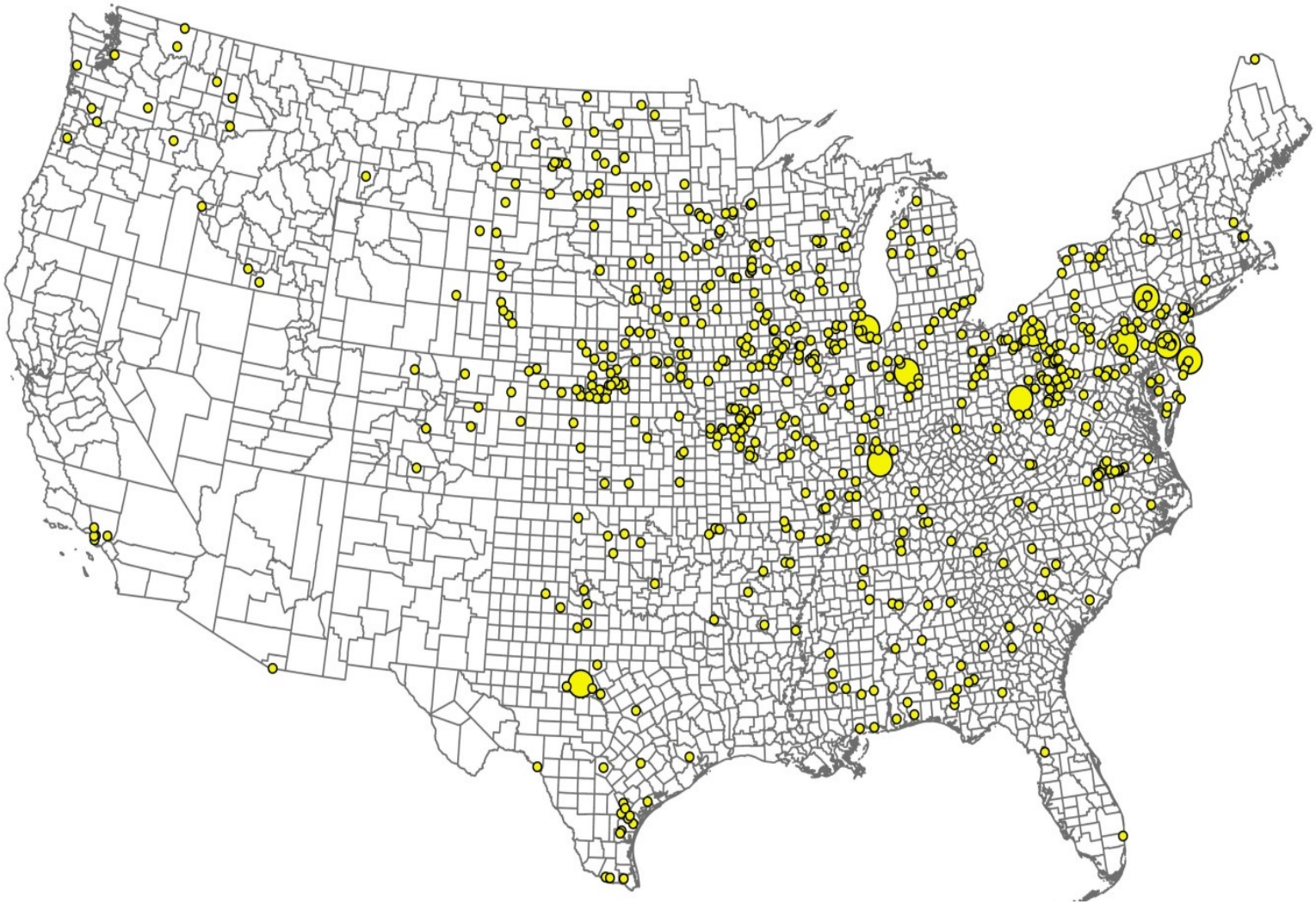
Preview of Results

- Weekly local projection estimates show that the MP shock led to immediate declines in securities and deposits, which then fed into a decline in bank lending
  - Commercial bank bond holdings fell in the first few weeks by roughly 10%, with loans declining over a longer period by about 4%
- Commercial bank closures spiked in response, and local economic activity (proxies for transaction volume & investment) declined
  - At short horizons, bank closures increased by 1-2 per state, per week
- Banks with larger bond portfolios were more exposed to the interest-rate shock and thus more likely to close thereafter
  - In other periods in our sample, bond holdings associated with stability
  - 28% of all closures between 1929-32 followed this MP shock & 50% higher rate of closures in comparison to the infamous Caldwell Panic of Autumn 1930

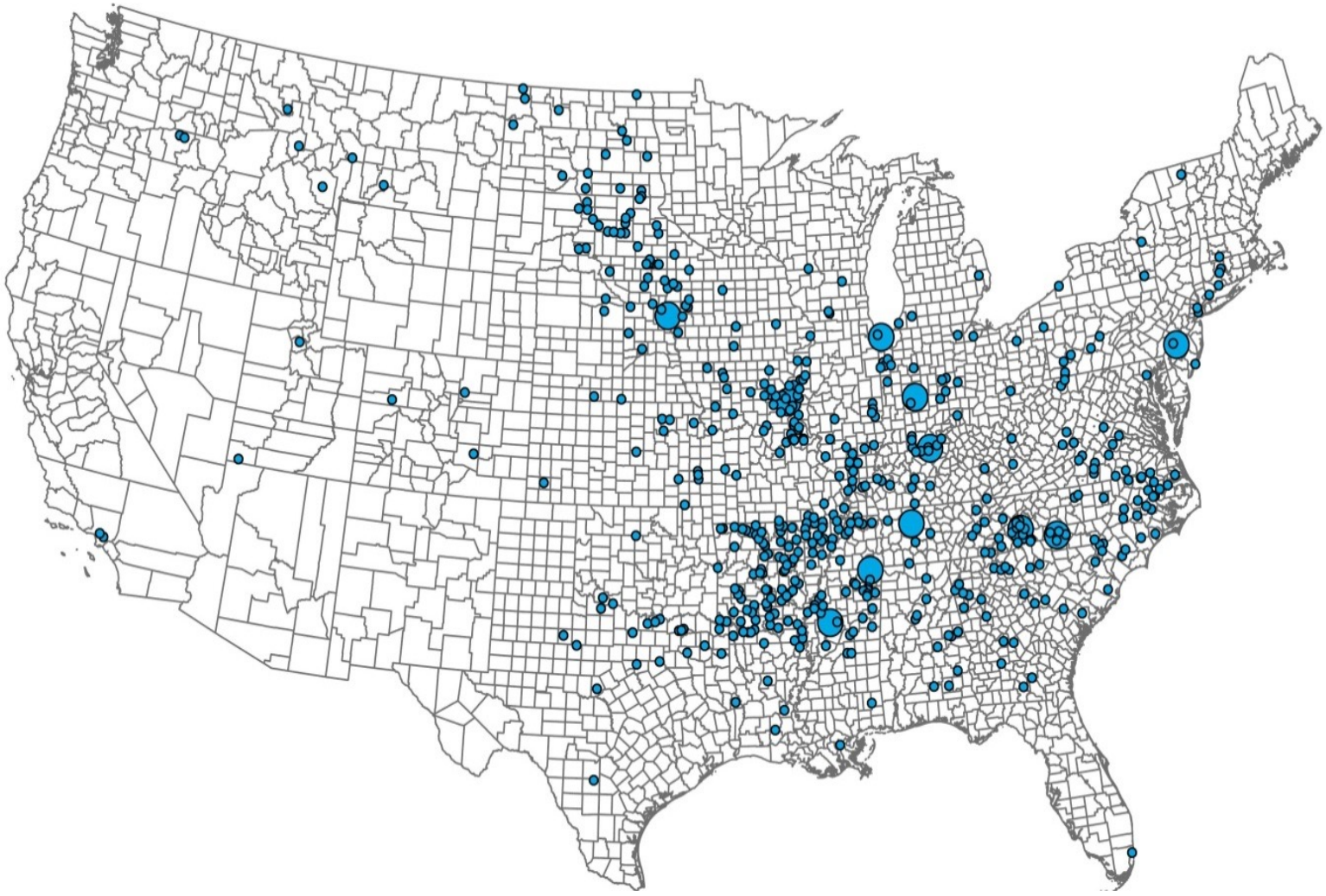
Post-October 1931 months contain many of the highest weeks of bank closures in GD



Bank closures geographically dispersed after MP shock: Oct/Nov 1931



More so than regionally-clustered First Banking Panic (Caldwell Failure) – Nov/Dec 1930



High Frequency Data

- Weekly status changes (closures) for each bank: FRB 6386 forms from Richardson (2007)
  - Aggregate to state-week to avoid places with few banks
- Weekly balance sheets for reporting banks in each Fed district collected in Mitchener and Richardson (2025)
- Weekly bank debits for 264 cities from Pedemonte (2024)
  - Proxy for *local economic activity* as they scale with transactions
- Monthly building permits for 229 cities from Cortes and Weidenmeier (2019)
  - Forward-looking measure of *local investment* (Cortes and LaPoint 2025)
- Weekly interest rates
  - Corporate Aaa bond yields from *Commercial and Financial Chronicle*
  - Discount rates by Fed district from *Annual Report of the Federal Reserve Board*

Focus on two key interest rates for our sample period

1. Discount rate captures the policy instrument: the sharp increase in October 1931 and the persistence of elevated rates provide a clean timing anchor
   - Event-study style approach to examine the impact of an unanticipated MP shock exogenous on the domestic economy
   - Increases matter for banks primarily through their effects on market yields and asset prices
2. Aaa yields capture the market-rate transmission of the policy shock and the resulting repricing of bank securities, e.g., depreciation of bond portfolios induced by higher rates.

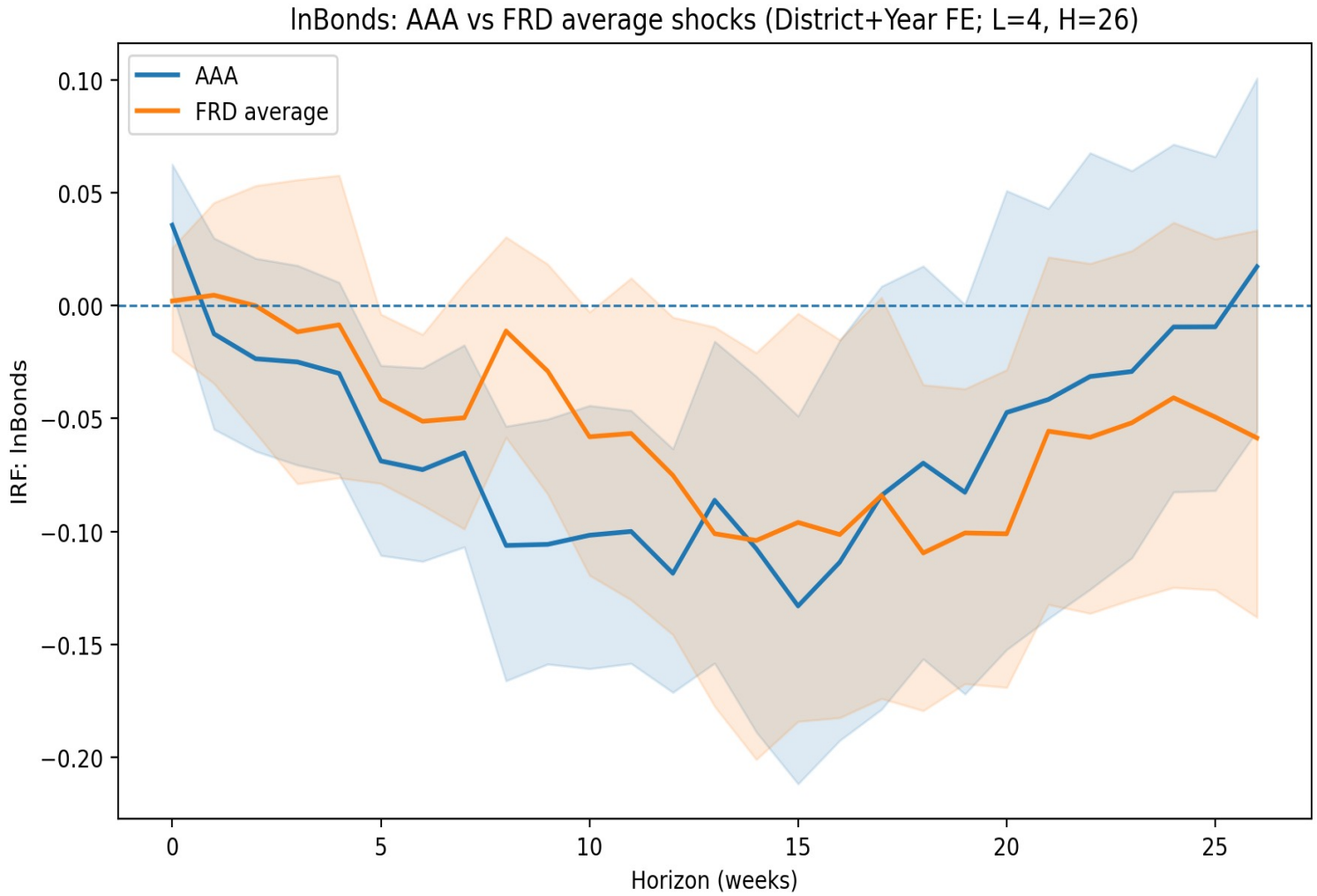
- Discount rates remain high through 1932 while Aaa yields begin to decline late in 1932

Estimate dynamic responses to MP shock with Local Projections Model (Jorda 2005)

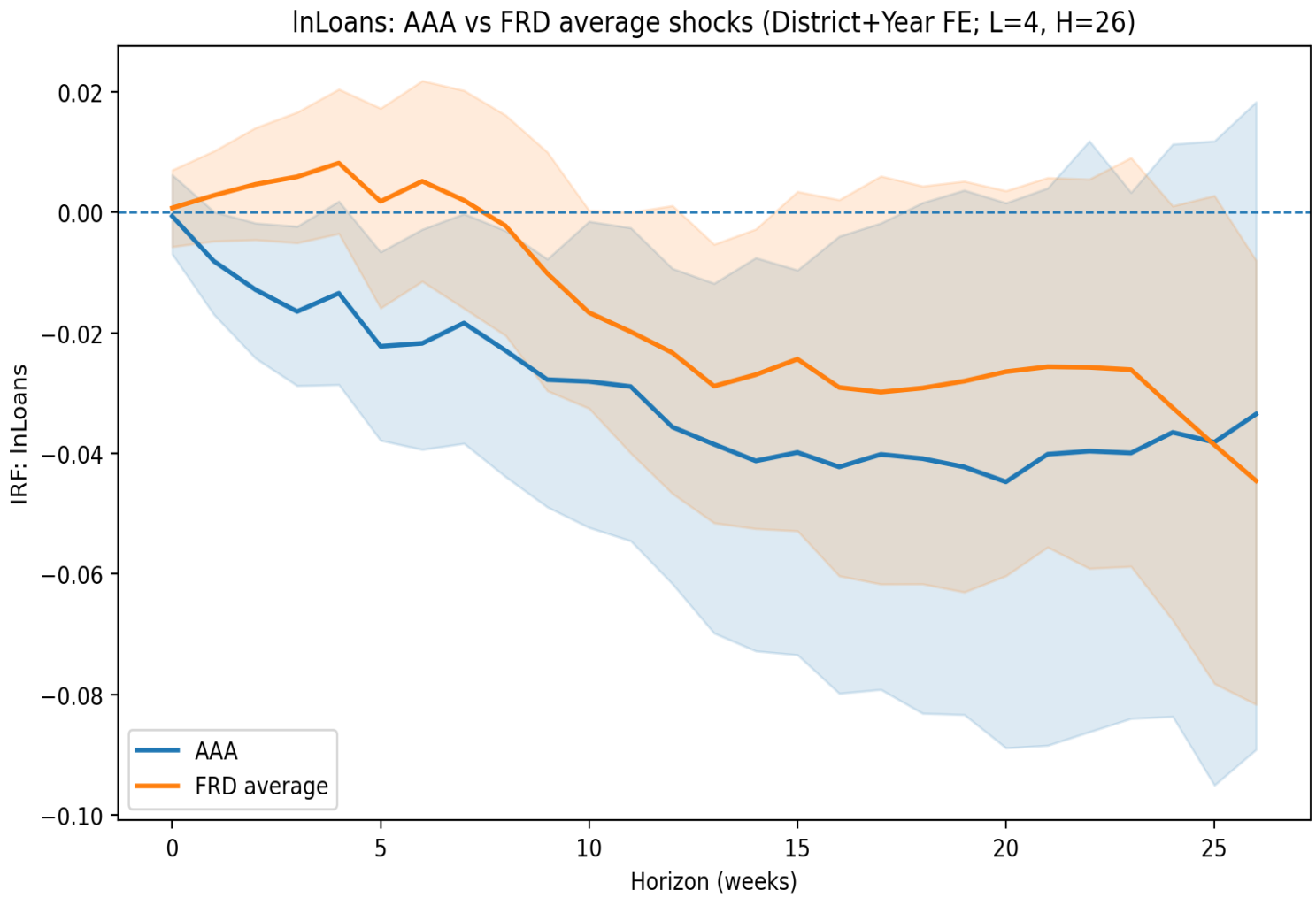
$$y_{i,t+h} = \alpha_h + \beta_h Rate_{i,t} + \sum_{l=1}^{L} \phi_{h,l}\, y_{i,t-l} + \sum_{l=1}^{L} \gamma_{h,l}\, Rate_{i,t-l} + \delta_i + \tau_{year(t)} + \varepsilon_{i,t+h}$$

- Spans Feb. 1930 – Dec. 1932
- 4 lags for weekly data and 2 lags for monthly data
- Horizons, h, 26 for weekly, 10 for monthly
- $Rate$ is either Aaa yield or Fed discount rate (district average)
- Unit (town, state, or Fed District) fixed effects to match aggregation, δ_i
- Year fixed effects, τ
- Wild cluster bootstrap at the time-level to calculate 95% confidence interval

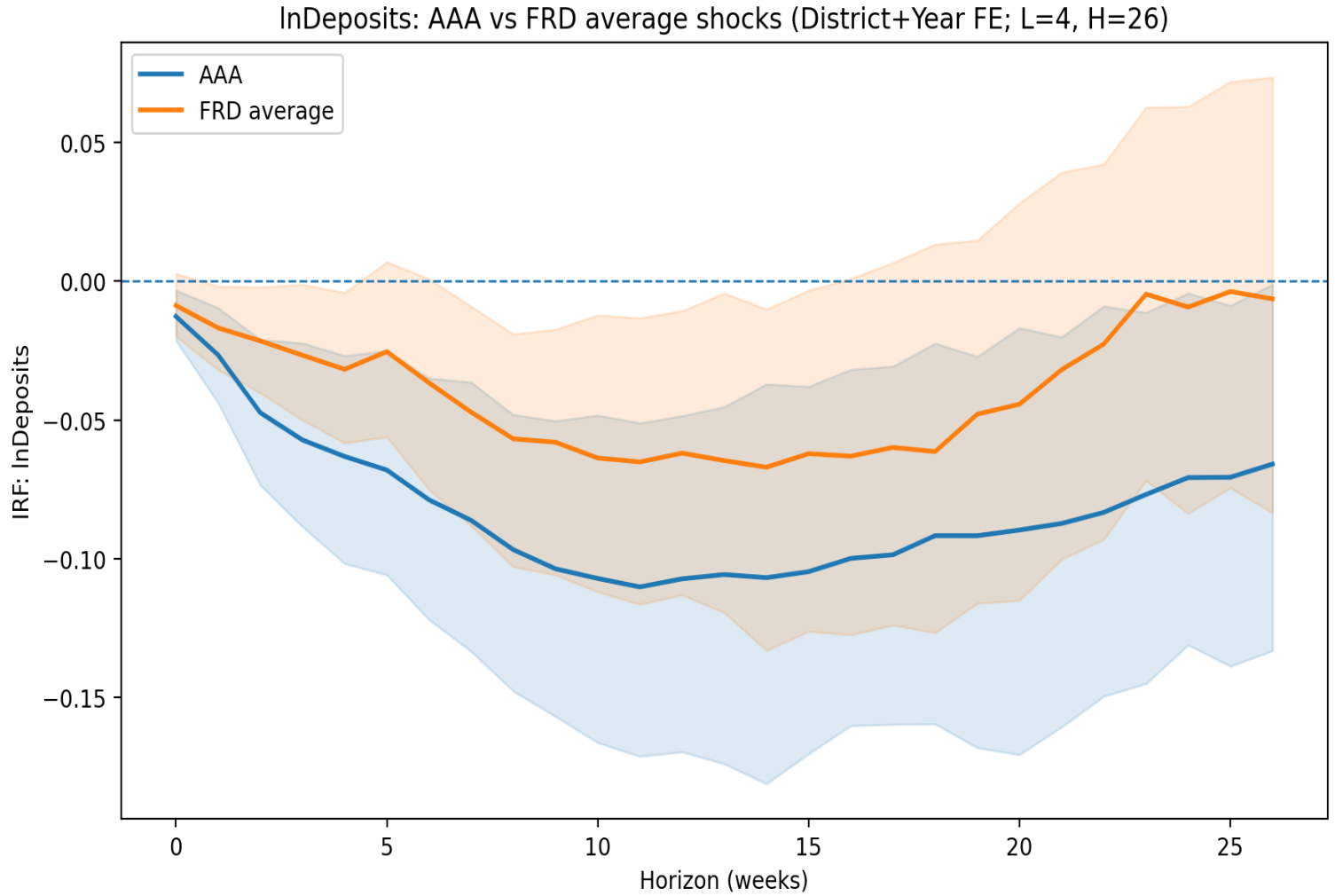
Impulse response for bonds due to 100 bps increase in either AAA or discount rate



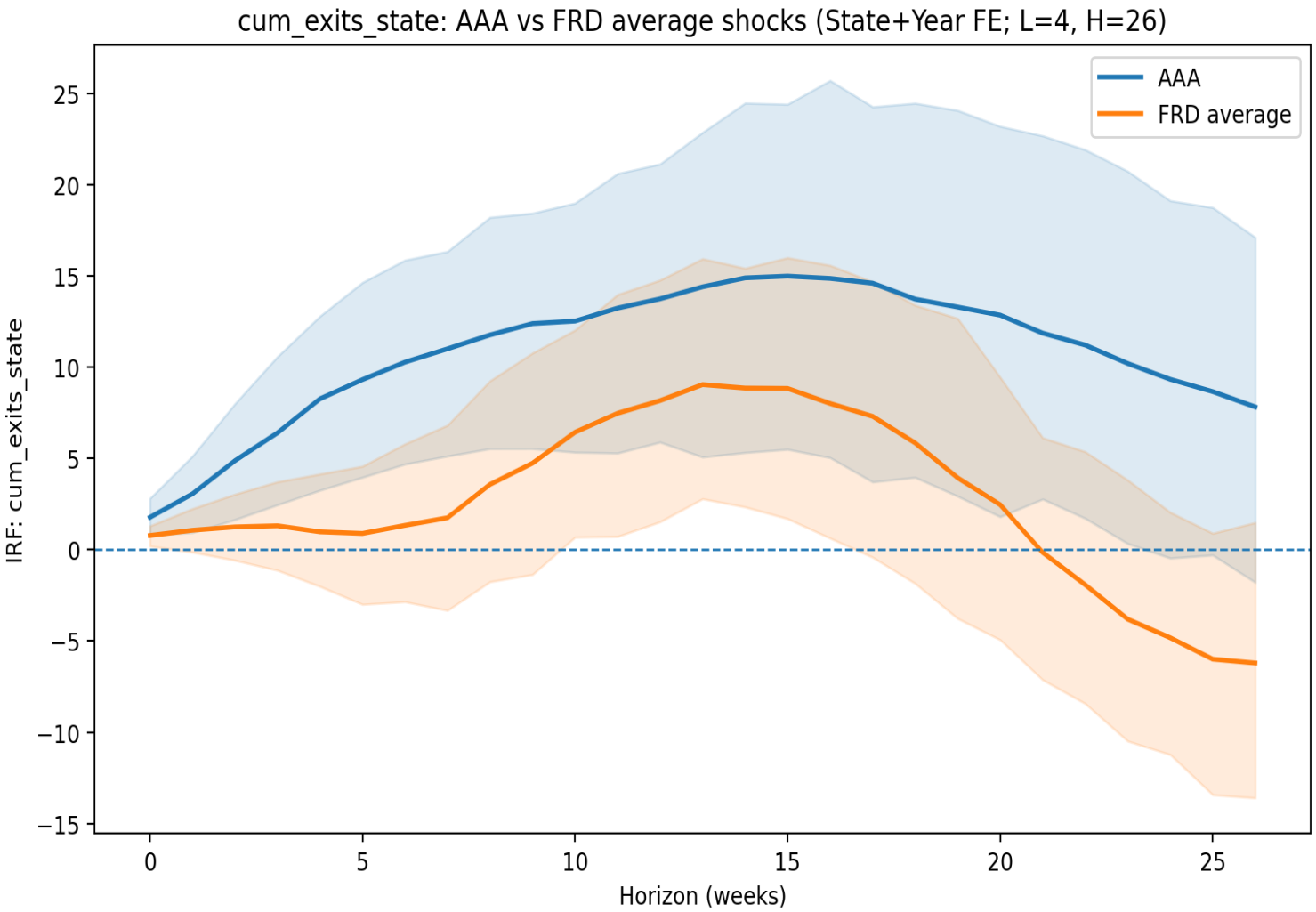
Balance-Sheet Channel: Impulse response for loans due to 100 bps increase rates



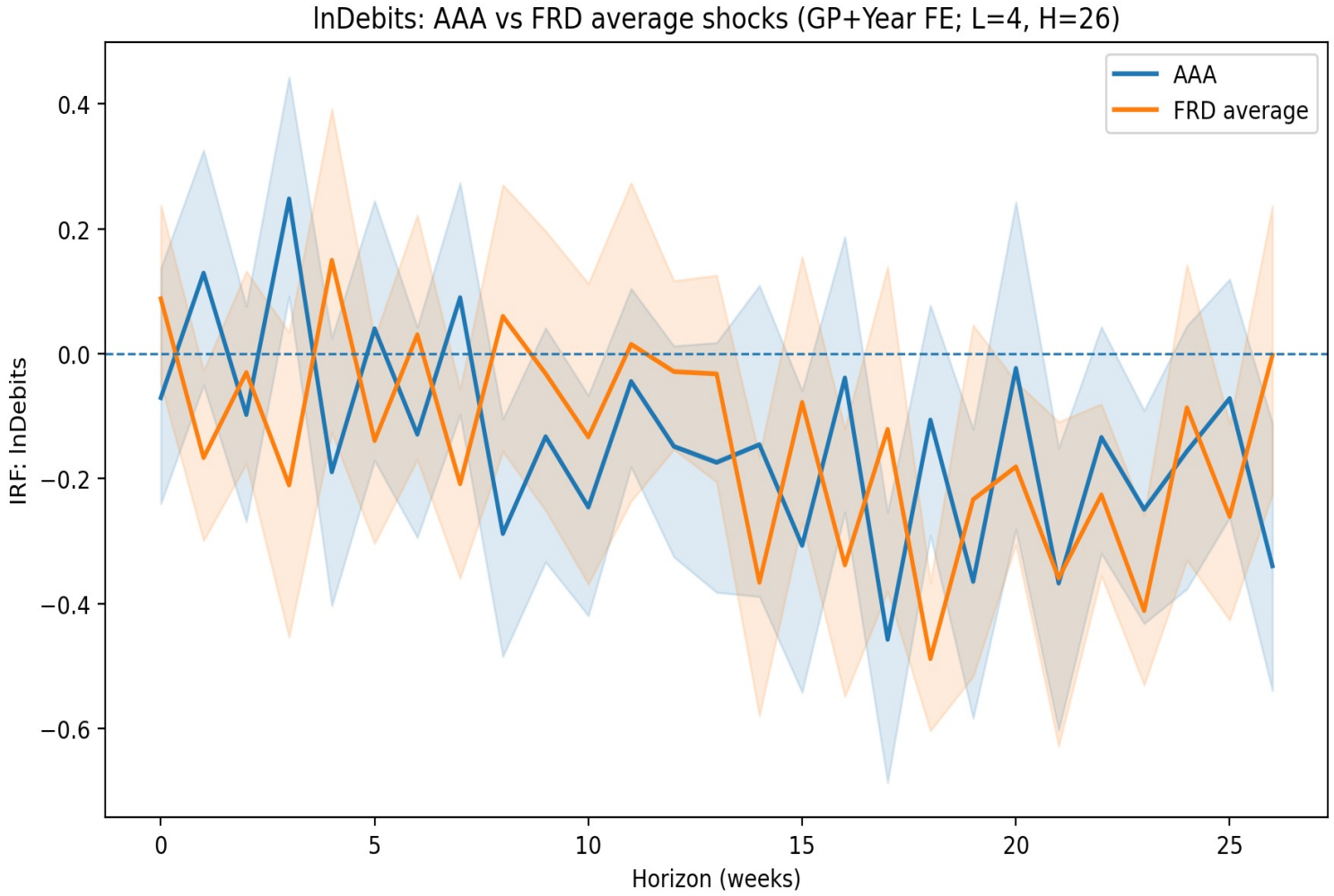
Impulse response for deposits due to 100 bps increase in either AAA or discount rate



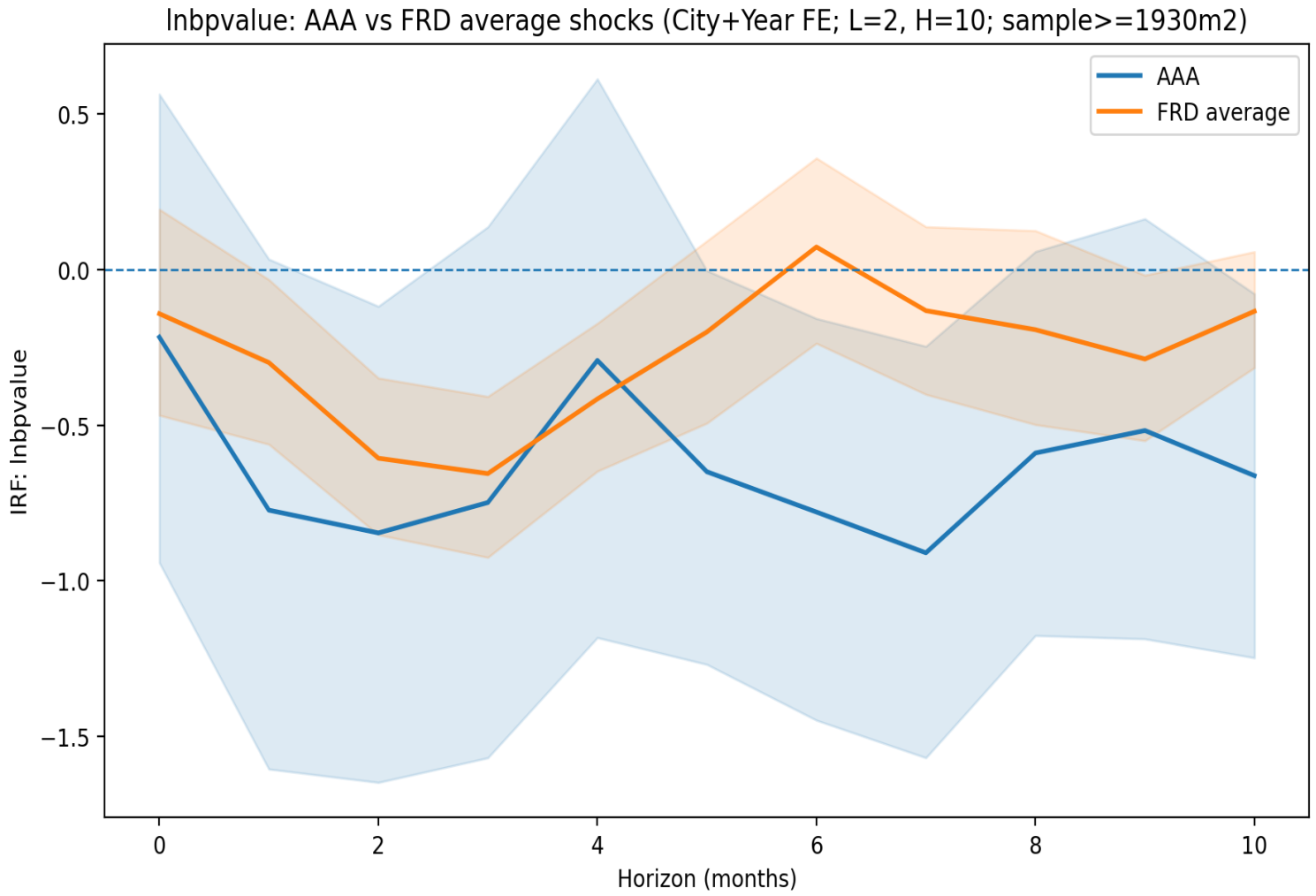
Impulse response cumulative closures due to 100 bps increase in rates



Impulse Response for bank debits due to 100 bps increase in either AAA or Discount Rate



Impulse Response for building permits due to 100 bps increase in rates



Robustness Checks

- Extend data back to July 1929 using average Fed discount rate or Fed District specific discount rates (instead of average)
- Drop financial centers of New York City and Chicago

Examining the Mechanism (Bank-level data)

- *Susceptibility of banks to a decline in bond values*
- High-frequency analysis shows that the policy shock had immediate effects on bonds and bank closures
- Examine whether banks closing in the wake of the MP shock had larger security portfolios
  - Collect all commercial bank balance sheets publication of *Rand McNally Bankers Directory:* 1928-1932 (annual, each July)
    - Novel data contribution
  - Utilize county-level demographic and economic information from Fishback et al. (2005), Haines (2008), and Haines et al. (2018)
  - To proxy for a bank's potential exposure to interest-rate risk, we use the securities-to-asset ratio
    - In our sample period, bond portfolios contain interest-rate risk

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200,000	101,760	742,380	1,070	204,820	597,500	25,510	217,380

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Panel Data Set and Analysis

- Quarterly bank-level panel from 1929:Q3 to 1932:Q4
  - In regressions, balance sheet ratios get updated as new data are available
- Predict whether bank closes in a quarter

$$Exit_{i,t} = a + Securities_{i,t}\beta_1 + (Securities_{i,t} * Rate_t)\beta_2 + BalanceSheet_{i,t}{}'\beta_3$$

$$+ OtherBanks_{i,t}{}'\beta_4 + County_i{}'\beta_5 + State_i{}'\beta_6 + Time_t{}'\beta_7 + \epsilon_{i,t}$$

- Coefficient of interest: Interaction of securities-to-assets ratio ($Securities_{it}$) with the interest rate for a given quarter
  - Quarter fixed effects capture effect of interest rates on all banks

Controls, fixed effects, and SEs

- Bank controls: (ln) assets; loans to assets; paid-in capital, surplus and undivided profits to assets; surplus and undivided profits to capital; (ln) bank age; lagged change in (ln)deposits (for capturing pre-trends in bank performance)
- Franchise value controls: HHI of county's bank deposits and bank's fraction of county deposits
- Other spatial controls: Ln(pop.), %urban, %illiterate, %non-white, farms per capita, mfg. estab. per capita, ln(retail sales)
- Clearinghouse, Reserve City, and Central Reserve City indicators
- State fixed effects
- Quarter fixed effects
- Standard errors clustered by county

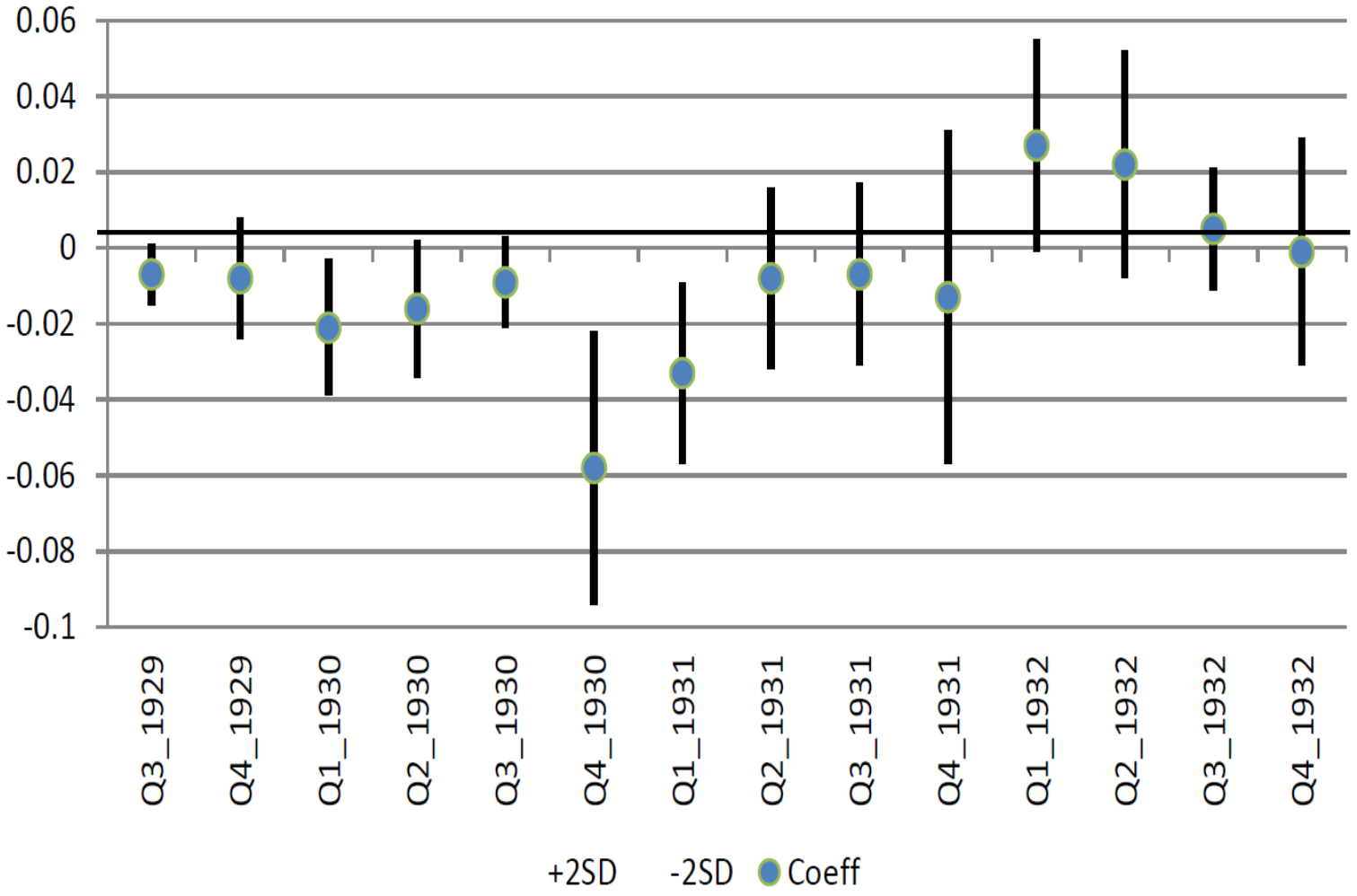
Effects of Securities holdings on probability of closure

	Closed During Quarter		
	(1)	(2)	(3)
Assets (log)	-0.001	-0.001	-0.001
	[0.000]	[0.000]	[0.000]
Securities/Assets	-0.009***	-0.102***	-0.042***
	[0.003]	[0.036]	[0.010]
Securities/Assets * Aaa Yield in Quarter		0.020**	
		[0.008]	
Securities/Assets * Avg. Fed Discount Rate in Quarter			0.009***
			[0.002]
Loans/Assets	0.025***	0.025***	0.025***
	[0.003]	[0.003]	[0.003]
Capital+Surplus/Assets	-0.030***	-0.029***	-0.030***
	[0.005]	[0.005]	[0.005]
Surplus/(Capital+Surplus)	-0.045***	-0.045***	-0.045***
	[0.002]	[0.002]	[0.002]
HHI of County Deposits	-0.001	-0.001	-0.001
	[0.004]	[0.004]	[0.004]
Fraction of County's Total Deposits	-0.003	-0.003	-0.004
	[0.003]	[0.003]	[0.003]
Lagged Change in (log) Deposits	-0.003***	-0.003***	-0.003***
	[0.000]	[0.000]	[0.000]
County Controls in 1930?	Yes	Yes	Yes
State Fixed Effects?	Yes	Yes	Yes
Quarter Fixed Effects?	Yes	Yes	Yes
Observations	267997	267997	267997

Securities Exposure and Closures

- Holding securities reduced the likelihood of bank closures during periods of steady or declining interest rates, but this salutary effect was reversed during periods of elevated interest rates
- Depreciation of long-term bonds due to the monetary policy shock appears to have forced many banks to close
- Confirmatory evidence
  - Bond prices fell after first rate hike (10/9/1931)
  - Kuentze Brothers (prominent Wall St. bond dealer & broker) declares bankruptcy on 10/13/31
    - "The suspension has been brought about in the main by the extraordinary depreciation in prices of high-grade bonds on the Stock Exchange, the buying of such bonds and their sale to customers being the principal business of the firm." (*New York Times*, 10/14/31)
    - "Close students of money and United States Government bonds think to-day's selling of U.S. Government bonds was due to the increase of the rediscount rate here, indicating still plainer that the Federal Reserve authorities have been unsuccessful in their easy money policy, which is now a thing of the past." (*Financial Times*, 10/14/31)

Coefficients on Securities-to-Assets in Repeated Quarterly Cross-Sections



Robustness Checks

- Fed District level discount rates or other corporate bond rates
- Leads and lags of interest-rate timing (placebo)
- Dropping largest cities
- Using bank's 1929 securities ratio
- Controlling for cash ratios instead of loans/assets

Conclusion

- Balance sheets of banks appear responsive to monetary policy shocks, with tightening episodes potentially increasing the likelihood for bank closures and spillovers to the real economy
- Weekly local projections show that the MP shock of 1931 led to immediate declines in securities and deposits, in turn affecting banks' loan book
- Bank closures spiked and local economic activity declined thereafter, in proxies for local economic activity and forward-looking investment
- Mechanism: banks with larger bond portfolios were much more likely to close after the interest rate shock
  - Bond holdings associated with stability in all other periods

Empirical Setting & Competition

- When local banking markets are less competitive and the deposit-franchise value is high, monetary tightening may have little impact on banks' health, and the banking channel of MP transmission may be attenuated (De Marzo et al. 2024; Drechsler et al. 2021; Jiang et al. 2024).
- We examine a setting where competition for deposits kept franchise values low in most places
  - Over 25,000 unique banks operating in 1929
  - Competition and clearing houses establishing max rates that banks belonging to them could pay to depositors kept deposit rates near policy rates
  - Deposit rates moved almost 1-for-1 with the Fed's policy rate; banks, even the largest, had little ability to keep their deposit rates low when the policy rate increased
    - *Bankers Magazine* reported "deposit rates kept pace with the reduction of the [central] bank rate"
  - Hence, Fed's monetary tightening increased interest rates that commercial banks paid on time and demand deposits

Empirical Setting & the future?

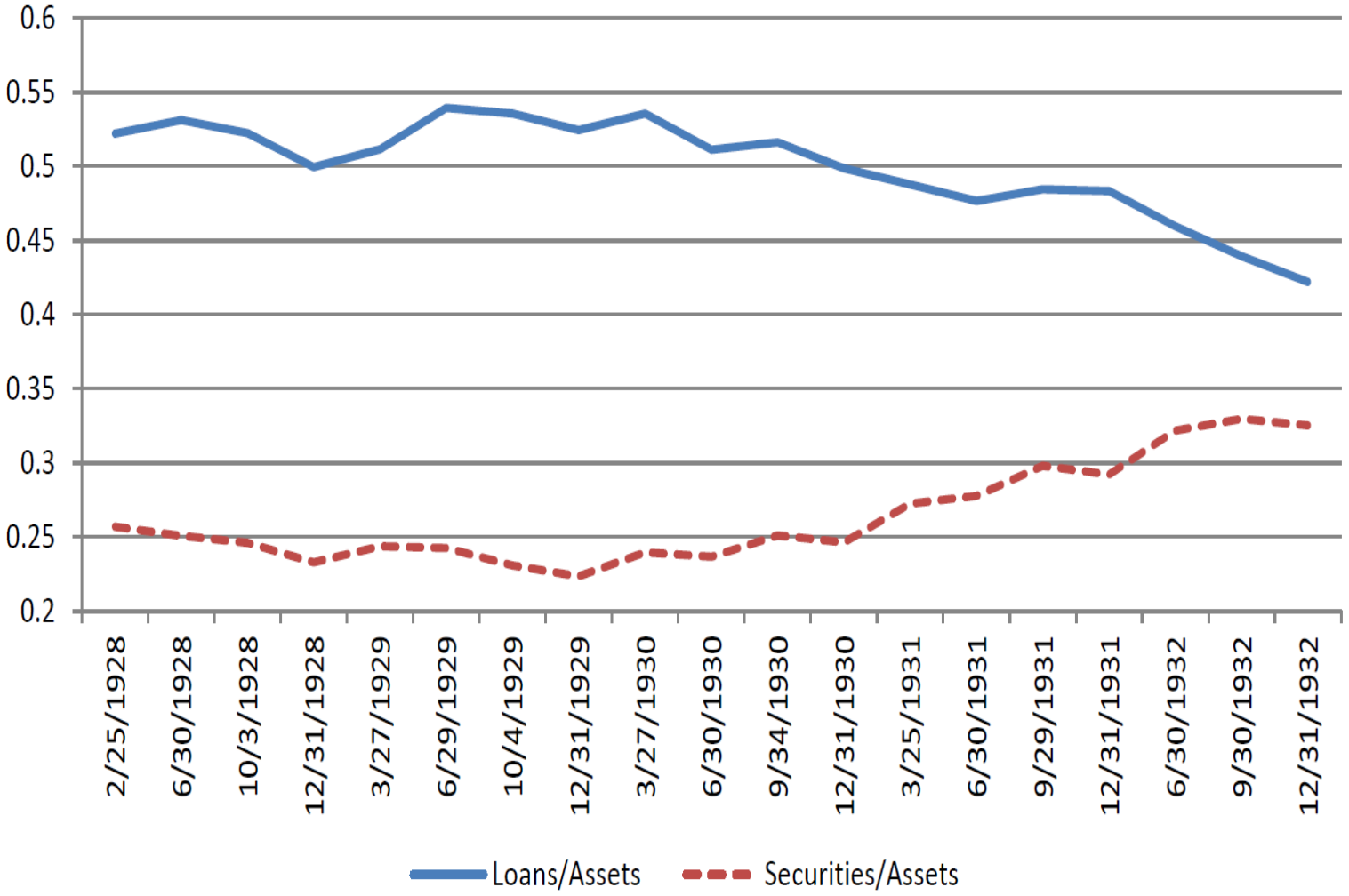
- Our setting resembles one that may become more prevalent in the near future as the fintech industry erodes bank market power and threatens the depositor base of commercial banks
- In this rapidly evolving landscape, our results suggest that monetary tightening can substantially impact commercial bank lending and health

Bonus Slides

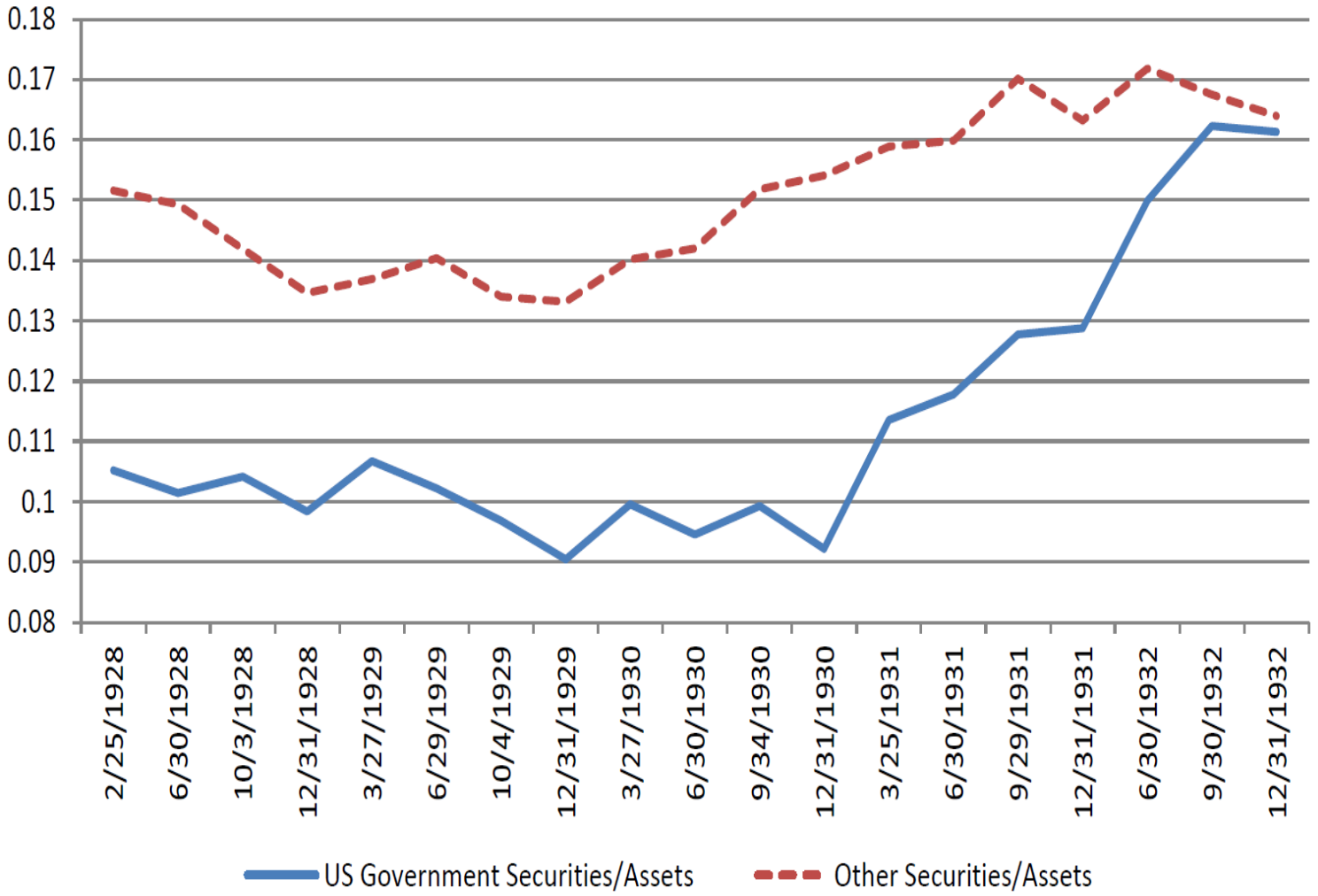
Related Literatures

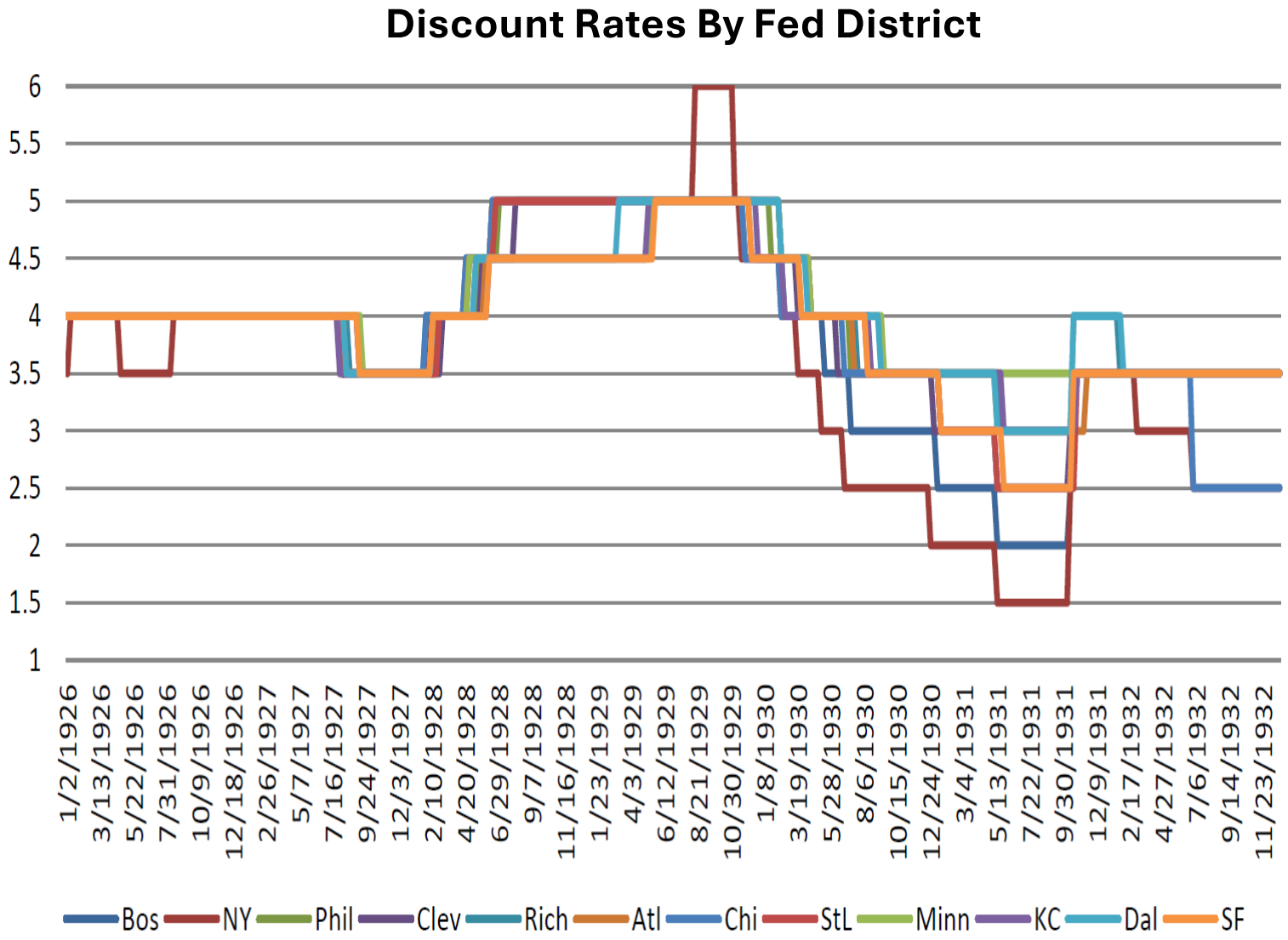
- Tightening's effect on financial stability
  - Haddad et al. 2023; De Marzo et al. 2024; Drechsler et al. 2021; Jiang et al. 2023; Gomez et al. 2021; English et al. 2018
- Tightening's effect on lending
  - Romer and Romer 1990; Bernanke and Blinder 1992; Kashyap and Stein 1995, 2000; Oliner and Rudebusch 1995; Ashcraft 2006
- Modern deposit betas
  - Hoffmann et al. 2019; Luck et al. 2023; Greenwald et al. 2023; Bolton et al. 2023; Metrick 2024
- Financial instability in Great Depression
  - Friedman and Schwartz 1963; Temin 1993; Romer 1993; Calomiris and Mason (2003a, 2003b); Richardson and Troost 2009; Wicker 2009

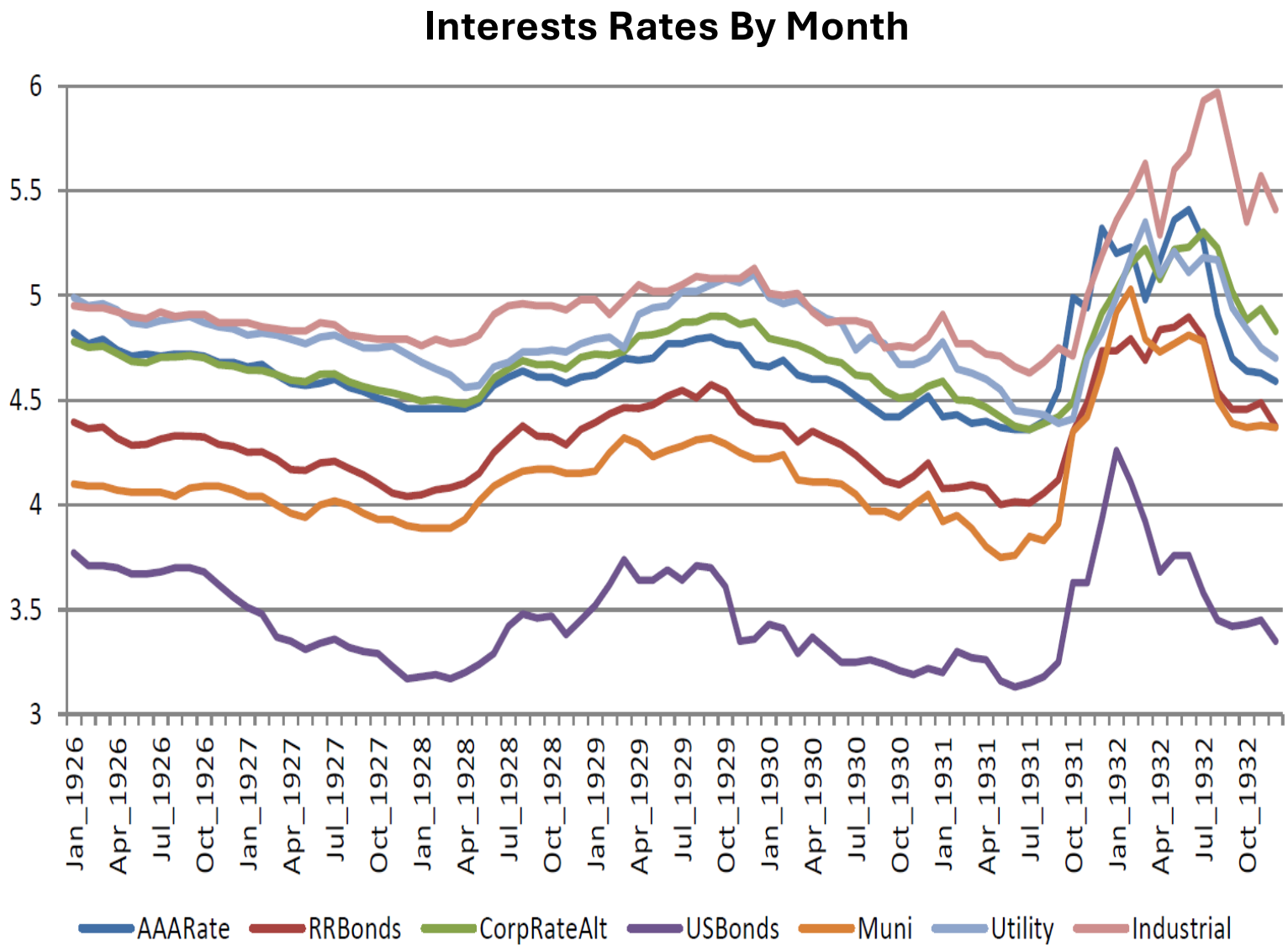
Bank Investment Ratios: 1928-1932



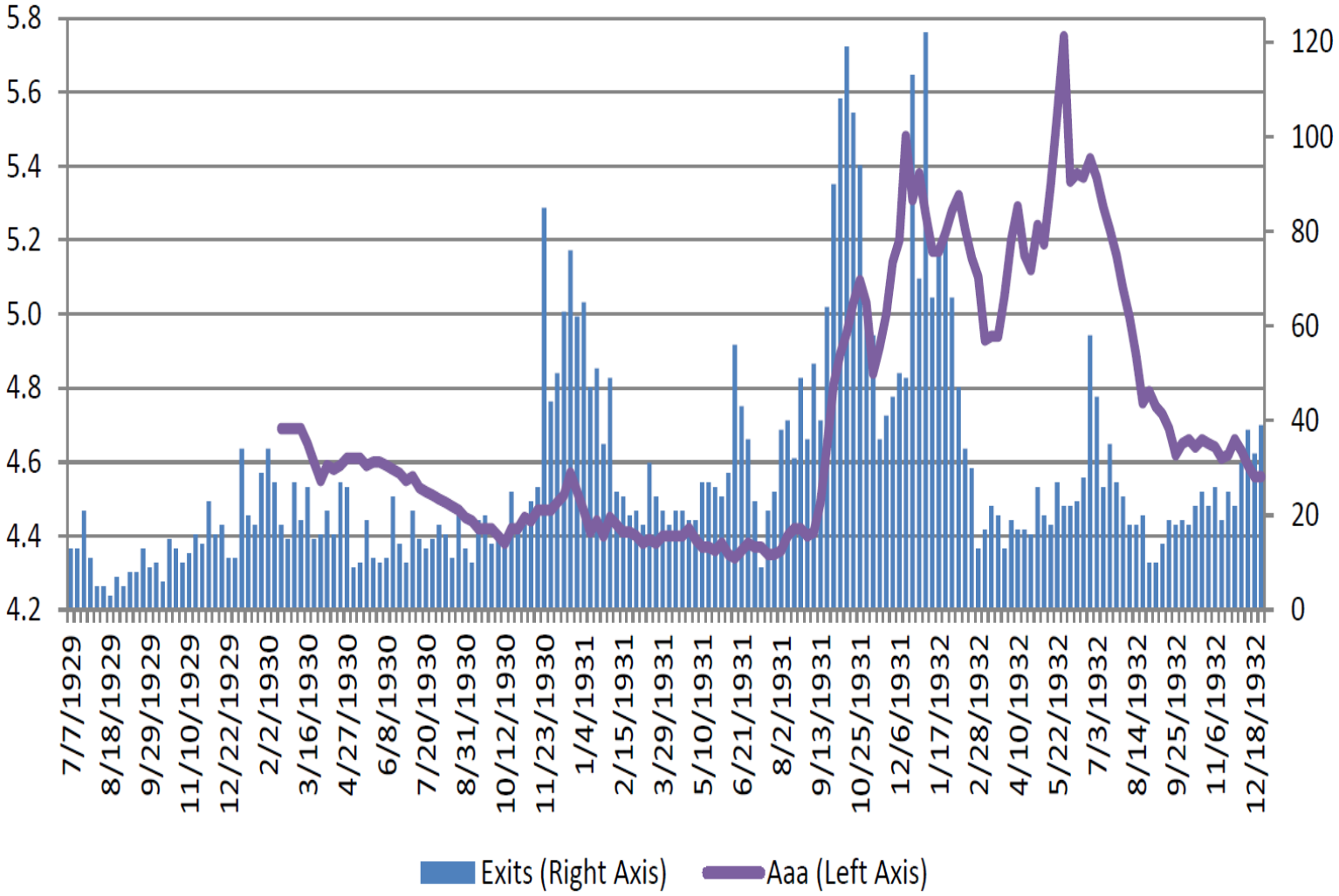
Security Ratios By Type: 1928-1932



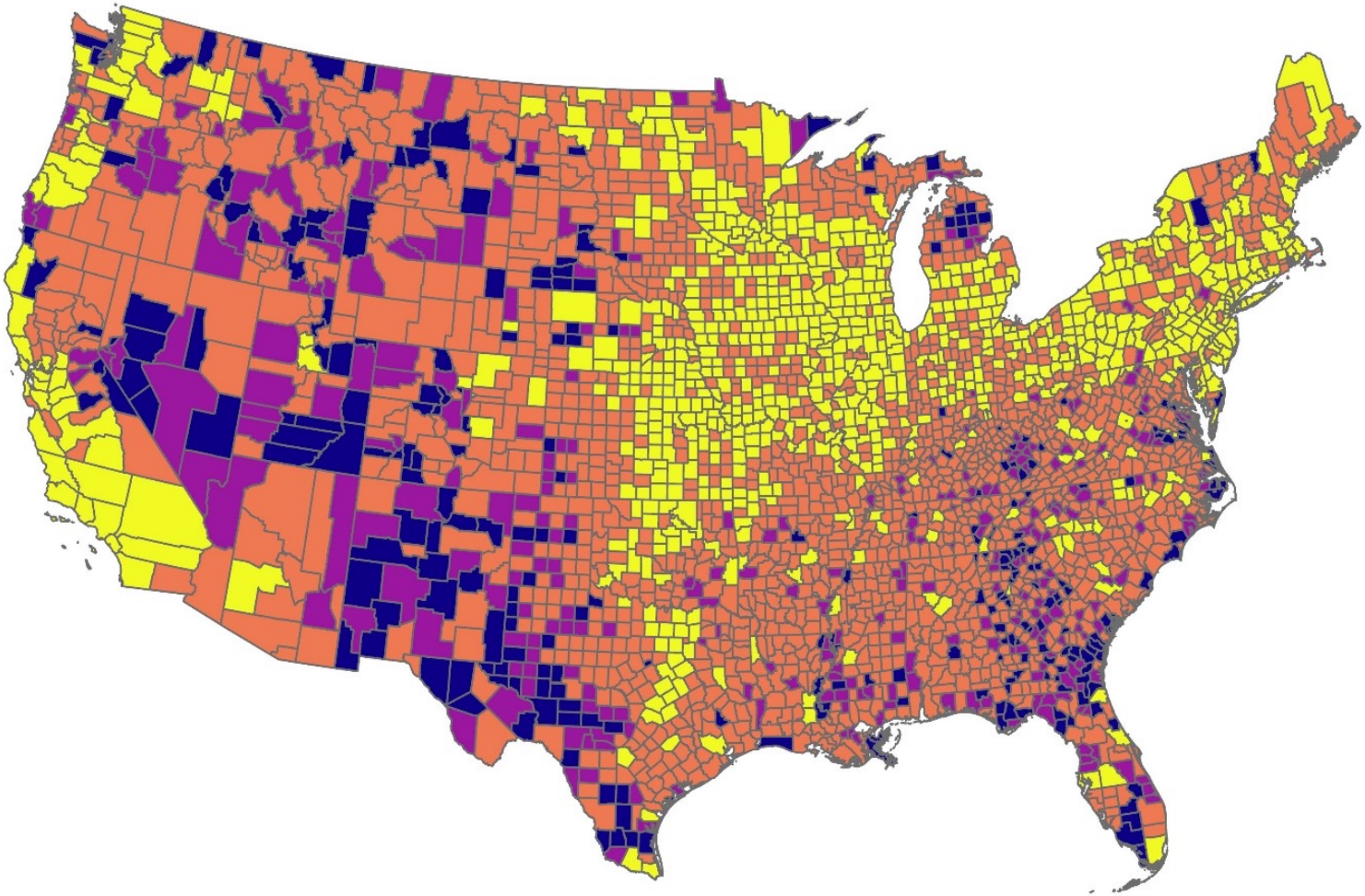

Discount Rates By Fed District
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
1/2/1926
3/13/1926
5/22/1926
7/31/1926
10/9/1926
12/18/1926
2/26/1927
5/7/1927
7/16/1927
9/24/1927
12/3/1927
2/10/1928
4/20/1928
6/29/1928
9/7/1928
11/16/1928
1/23/1929
4/3/1929
6/12/1929
8/21/1929
10/30/1929
1/8/1930
3/19/1930
5/28/1930
8/6/1930
10/15/1930
12/24/1930
3/4/1931
5/13/1931
7/22/1931
9/30/1931
12/9/1931
2/17/1932
4/27/1932
7/6/1932
9/14/1932
11/23/1932
Bos
NY
Phil
Clev
Rich
Atl
Chi
StL
Minn
KC
Dal
SF


Interests Rates By Month
6
5.5
5
4.5
4
3.5
3
Jan_1926
Apr_1926
Jul_1926
Oct_1926
Jan_1927
Apr_1927
Jul_1927
Oct_1927
Jan_1928
Apr_1928
Jul_1928
Oct_1928
Jan_1929
Apr_1929
Jul_1929
Oct_1929
Jan_1930
Apr_1930
Jul_1930
Oct_1930
Jan_1931
Apr_1931
Jul_1931
Oct_1931
Jan_1932
Apr_1932
Jul_1932
Oct_1932
AAARate
RRBonds
CorpRateAlt
USBonds
Muni
Utility
Industrial

Bank Closures and Aaa Bond Yield By Week

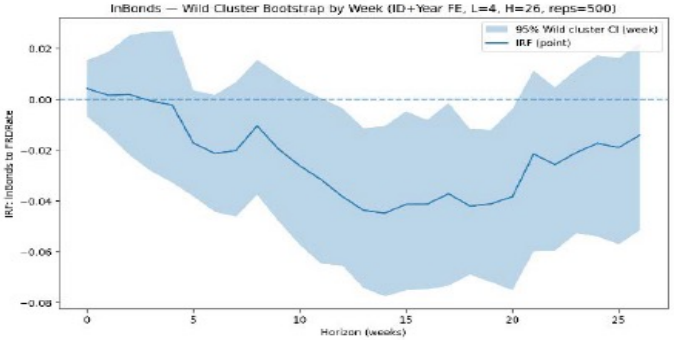


of Banks By County in 1929

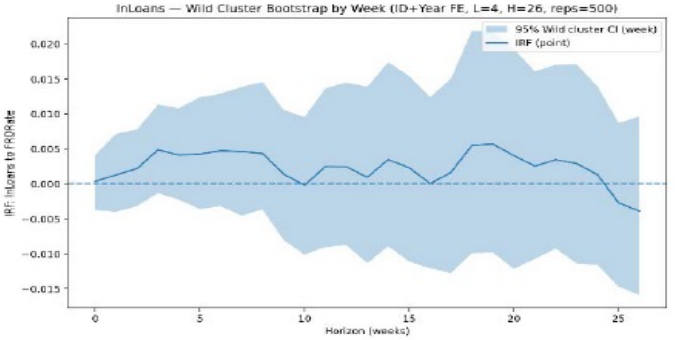


Violet = 1 bank, Purple = 2 banks, Orange = 3-10 banks, Yellow = 10+ banks

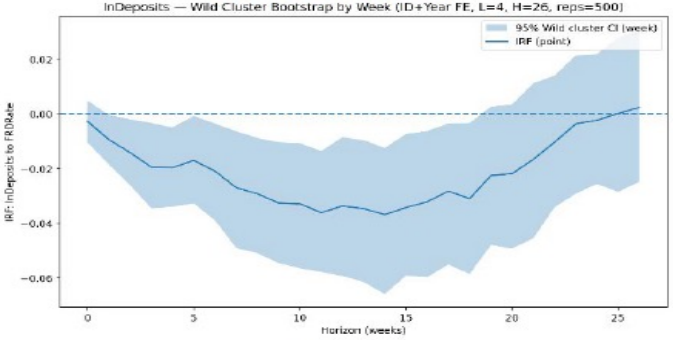
Panel A: ln(bonds)



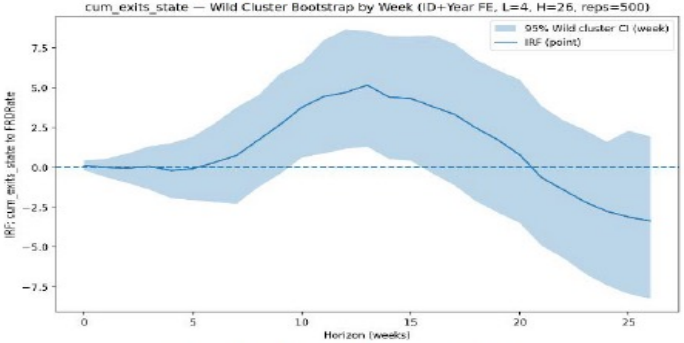
Panel B: ln(loans)



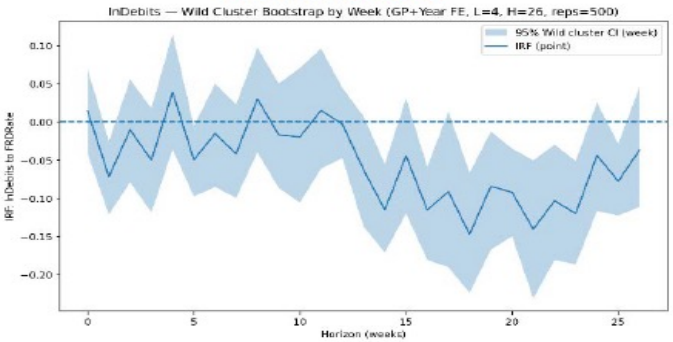
Panel C: ln(deposits)



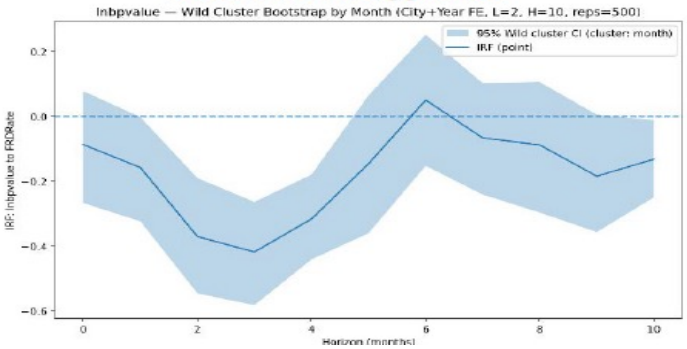
Panel D: Cumulative exits



Panel E: ln(debits)



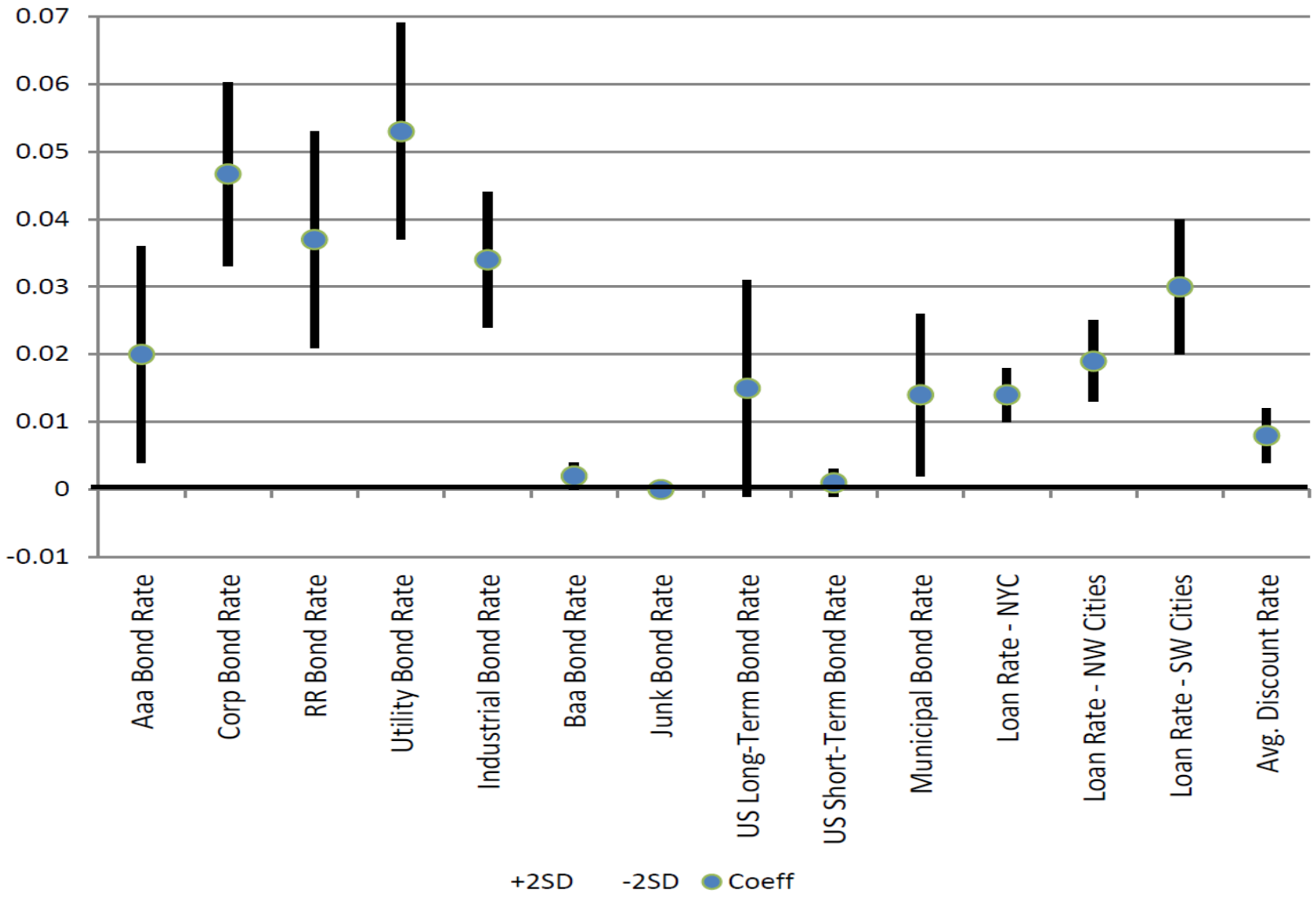
Panel F: ln(building permits)



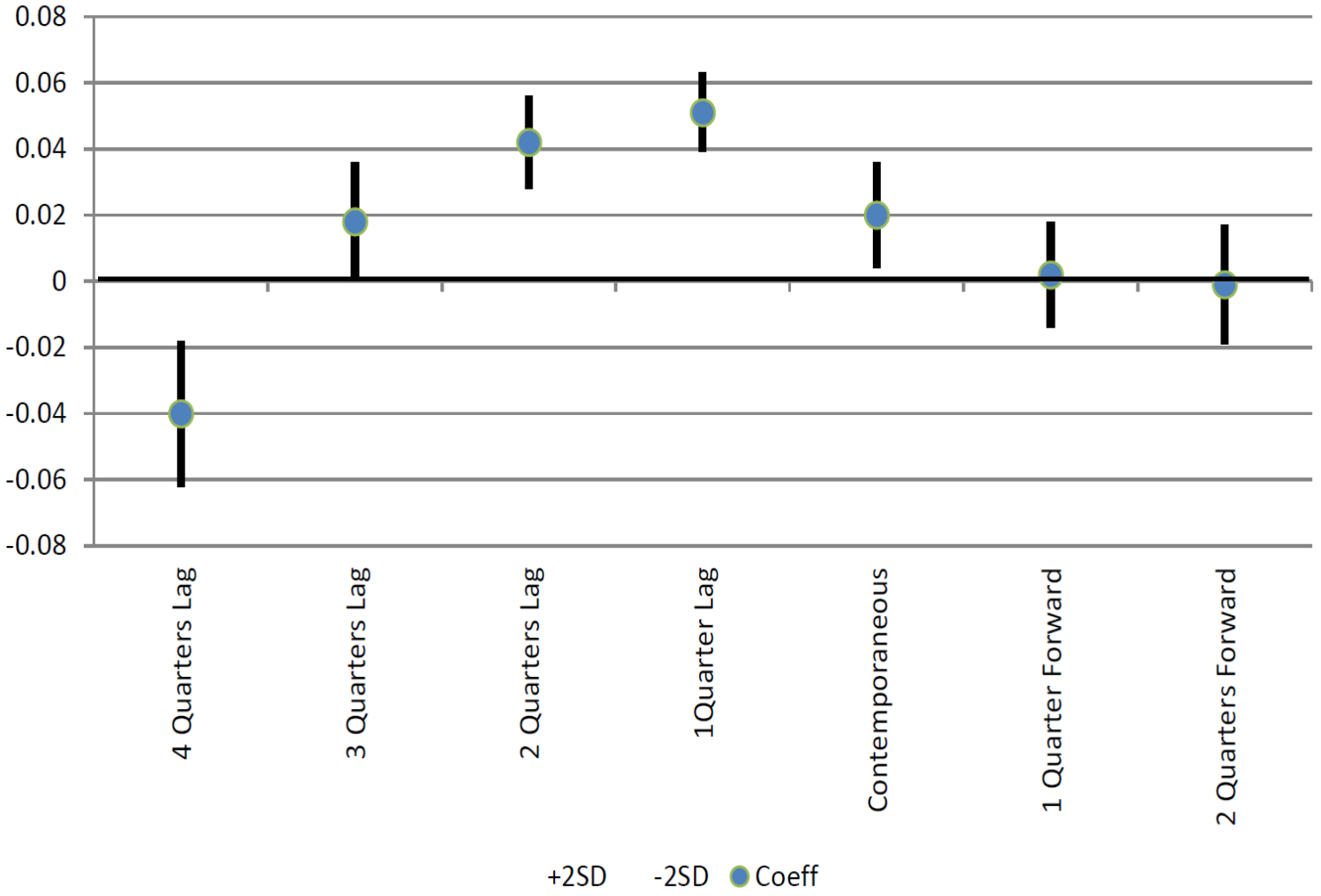
Magnitude of Interest Rate Effects

- Average quarterly closure rate is 1.8%
- A bank with an average securities to assets ratio would be:
  - 0.33 pp. less likely to close in the interest rate environment of August 1931
  - 0.13 pp. more likely to close in the interest rate environment of December 1932
- Effect is magnified when comparing banks with different security to assets ratios
  - Bank with 75th percentile of ratio would be 0.20 pp. more likely to close in December 1932

Coefficient on Securities to Assets * Other Interest Rates



Coefficient on Securities to Assets * Lagged or Forward AAA Rates



Probability of closure using average Fed discount rates

	Closed During Quarter		
	(1)	(2)	(3)
Assets (log)	-0.001	-0.001	-0.001
	[0.001]	[0.001]	[0.001]
Securities/Assets	-0.009***	-0.022**	-0.027***
	[0.003]	[0.009]	[0.009]
Fed Discount Rate in Quarter	0.001	-0.001	
	[0.001]	[0.002]	
Securities/Assets * Fed Discount Rate in Quarter		0.003*	0.005**
		[0.002]	[0.002]
Loans/Assets	0.025***	0.025***	0.025***
	[0.003]	[0.003]	[0.003]
Capital+Surplus/Assets	-0.030***	-0.030***	-0.028***
	[0.005]	[0.005]	[0.005]
Surplus/(Capital+Surplus)	-0.045***	-0.045***	-0.046***
	[0.002]	[0.002]	[0.002]
HHI of County Deposits	-0.001	-0.001	-0.001
	[0.004]	[0.004]	[0.004]
Fraction of County's Total Deposits	-0.003	-0.004	-0.002
	[0.003]	[0.003]	[0.003]
Lagged Change in (log) Deposits	-0.003***	-0.003***	-0.003***
	[0.001]	[0.001]	[0.001]
County Controls in 1930?	Yes	Yes	Yes
State Fixed Effects?	Yes	Yes	Yes
Quarter Fixed Effects?	Yes	Yes	Yes
State X Quarter Fixed Effects?	No	No	Yes
Observations	267997	267997	267997

	Closed During Quarter							
	Dropping RC and CRC Cities		Using 1929 Securities Ratio		Dropping Voluntary or Temporary Closures		Dropping Involuntary Closures or Mergers	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Assets (log)	-0.000	-0.000	-0.001	-0.001	-0.000	-0.000	-0.000	-0.000
	[0.001]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Securities/Assets	-0.093***	-0.048***	-0.093***	-0.040***	-0.079**	-0.035***	-0.025*	-0.009**
	[0.035]	[0.009]	[0.033]	[0.009]	[0.033]	[0.009]	[0.014]	[0.004]
Securities/Assets * Aaa Yield in Quarter	0.017**		0.018**		0.015**		0.005	
	[0.007]		[0.007]		[0.007]		[0.003]	
Securities/Assets * Avg Fed Discount Rate in Quarter		0.010***		0.009***		0.008***		0.002**
		[0.002]		[0.002]		[0.002]		[0.001]
Loans/Assets	0.026***	0.025***	0.027***	0.028***	0.024***	0.024***	0.002	0.002
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.002]	[0.002]
Capital+Surplus/Assets	-0.035***	-0.036***	-0.030***	-0.031***	-0.029***	-0.030***	-0.001	-0.001
	[0.005]	[0.005]	[0.005]	[0.005]	[0.004]	[0.004]	[0.002]	[0.002]
Surplus/(Capital+Surplus)	-0.045***	-0.045***	-0.045***	-0.046***	-0.040***	-0.041***	-0.006***	-0.006***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.001]	[0.001]
HHI of County Deposits	0.001	0.001	-0.001	-0.001	-0.000	-0.000	-0.000	-0.000
	[0.004]	[0.004]	[0.004]	[0.004]	[0.003]	[0.003]	[0.002]	[0.002]
Fraction of County's Total Deposits	-0.007**	-0.007**	-0.003	-0.004	-0.003	-0.003	-0.001	-0.001
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.001]	[0.001]
Lagged Change in (log) Deposits	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.002***	-0.000***	-0.000***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
County Controls in 1930?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	253652	253652	263131	263131	266038	266038	257935	257935

BACK

Table A3: Predicting Quarterly Bank Closures Panel - Other Balance Sheet Controls

	Closed During Quarter							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Assets (log)	-0.001	-0.001	-0.001	-0.001	-0.001***	-0.001***	-0.001**	-0.001**
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Securities/Assets	-0.102***	-0.042***	-0.121***	-0.064***	-0.132***	-0.067***	-0.130***	-0.067***
	[0.036]	[0.010]	[0.035]	[0.009]	[0.036]	[0.009]	[0.036]	[0.009]
Securities/Assets *	0.020**		0.019**		0.020***		0.020***	
Aaa Yield in Quarter	[0.008]		[0.008]		[0.008]		[0.008]	
Securities/Assets *		0.009***		0.009***		0.008***		0.008***
Avg Fed Discount Rate in Quarter		[0.002]		[0.002]		[0.002]		[0.002]
Loans/Assets	0.025***	0.025***						
	[0.003]	[0.003]						
Cash/Assets					-0.073***	-0.073***		
					[0.004]	[0.004]		
Cash/Deposits							-0.050***	-0.049***
							[0.003]	[0.003]
Capital+Surplus/Assets	-0.029***	-0.030***	-0.030***	-0.030***	-0.038***	-0.039***	-0.018***	-0.019***
	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.006]	[0.006]
Surplus/(Capital+Surplus)	-0.045***	-0.045***	-0.044***	-0.044***	-0.042***	-0.043***	-0.043***	-0.043***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
HHI of County Deposits	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.000	-0.000
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
Fraction of County's Total Deposits	-0.003	-0.004	-0.004	-0.004	-0.002	-0.002	-0.003	-0.003
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Lagged Change in(log) Deposits	-0.003***	-0.003***	-0.003***	-0.003***	-0.002***	-0.002***	-0.003***	-0.003***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
County Controls in 1930?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	267997	267997	267997	267997	267997	267997	267844	267844

Event-Study Evidence (from Goetzmann)

- Three asset classes, two event days, same two-hour news window
- Hike 1 (Fri 9 Oct): DJI –1.3 % | Bonds +0.7 % | Bank stocks +11 %
- Hike 2 (Fri 16 Oct): DJI +3.8 % | Bonds –0.4 % | Bank stocks +3 %
- None of this is what a surprise contractionary shock predicts. The daily evidence refines the interpretation.
- The RATE change was partially anticipated → visible in the 13–14 Oct bond sell-off
- The BALANCE-SHEET CHANNEL was NOT anticipated → bank equity rallied +11 %

Commercial & Financial Chronicle
October 17, 1931

- “The suspension of the firm of Kountze Brothers was brought about in the main by the extraordinary depreciation in the prices for high-grade bonds on the Exchange. The buying of such bonds and their sale to Customers was the principal business of the firm. The depreciation brought about a cash position which made it improbable that the current withdrawals could be met, and the partners felt that their duty to their depositors and creditors compelled them to consent to the appointment of a receiver, so that the firm's assets might be conserved for their benefit.”

Table A1: Correlations Between Monthly Bond and Interest Rate Series

	Aaa bond yield	Corp Bond Yield	RR Bond Yield	Utility Bond Yield	Industrial Bond Yield	Baa Bond Yield	Junk Bond Yield	US Long-Term Bond Yield	US Short-Term Bond Yield	Municipal Bond Yield	Loan Rate - NYC	Loan Rate - NW Cities	Loan Rate - SW Cities	Avg. Discount Rate
Aaa Bond yield	1.000													
Corp Bond Yield	0.845	1.000												
RR Bond Yield	0.956	0.941	1.000											
Utility Bond Yield	0.696	0.897	0.828	1.000										
Industrial Bond Yield	0.710	0.931	0.803	0.715	1.000									
Baa Bond Yield	0.734	0.544	0.620	0.185	0.632	1.000								
Junk Bond Yield	0.395	0.317	0.306	-0.072	0.529	0.890	1.000							
US Long-Term Bond Yield	0.888	0.762	0.878	0.668	0.603	0.563	0.254	1.000						
US Short-Term Bond Yield	0.101	0.084	0.180	0.416	-0.227	-0.535	-0.759	0.296	1.000					
Municipal Bond Yield	0.891	0.901	0.915	0.718	0.851	0.719	0.526	0.869	-0.002	1.000				
Loan Rate - NYC	0.278	0.379	0.414	0.632	0.113	-0.327	-0.557	0.363	0.886	0.221	1.000			
Loan Rate - NW Cities	0.316	0.499	0.485	0.705	0.279	-0.244	-0.435	0.369	0.781	0.326	0.975	1.000		
Loan Rate - SW Cities	0.228	0.432	0.406	0.677	0.208	-0.359	-0.536	0.272	0.803	0.236	0.969	0.986	1.000	
Avg. Discount Rate	0.206	0.357	0.369	0.622	0.103	-0.409	-0.595	0.278	0.873	0.187	0.976	0.966	0.986	1.000

Notes: Table provides the correlation coefficients for the various bond and loan rates from July 1929 through December 1932.

Table A2: Source and Description of Monthly Interest Rate Series

Series	Source	Description
Aaa Bond yield	NBER Macrohistory	U.S. Yields On Corporate Bonds, Highest Rating
Baa Bond Yield	NBER Macrohistory	U.S. Yields On Corporate Bonds, Lowest Rating
Loan Rate - NYC	NBER Macrohistory	U.S. Rates On Customer Loans, New York City
Loan Rate - NW Cities	NBER Macrohistory	U.S. Rates On Customers' Loans, Northern and Western Cities
Loan Rate - SW Cities	NBER Macrohistory	U.S. Bank Rates On Customers' Loans, Southern and Western Cities
RR Bond Yield	NBER Macrohistory	U.S. American Railroad Bond Yields, High Grade
Corp Bond Yield	NBER Macrohistory	Unweighted average of Utility, Industrial, and RR bond yields
US Long-Term Bond Yield	NBER Macrohistory	U.S. Yield On Long-Term United States Bonds
US Short-Term Bond Yield	NBER Macrohistory	U.S. Yields On Short-Term United States Securities, Three-Six Month Treasury Notes and Certificates, Three Month Treasury
Municipal Bond Yield	NBER Macrohistory	U.S. Index of Yields Of High Grade Municipal Bonds
Utility Bond Yield	NBER Macrohistory	U.S. Index of Yields Of High Grade Public Utility Bonds
Industrial Bond Yield	NBER Macrohistory	U.S. Yield On High Grade Industrial Bonds, Aaa Rating
Avg. Discount Rate	Federal Reserve Bank	Unweighted average of monthly discount rates in each district
Junk Bond Yield	Basile et al. (2025)	Yields of Junk Bonds

Notes: Table provides the source of each of the monthly interest rate series used in the paper.