

Monetary Policy Shocks and Financial Stability: Evidence from the Great Depression

MATTHEW JAREMSKI
Utah State University & NBER

KRIS JAMES MITCHENER
Santa Clara University & NBER

GARY RICHARDSON
University of California, Irvine & NBER

ANGELA VOSSMEYER
Claremont McKenna College & NBER

2026 NBER-DAE

Topic

Research Question: How does monetary tightening influence the stability of the financial system?

Monetary tightening debate:

- Lending channels
- Financial stability
- Empirically challenges

Our paper:

- We exploit a sudden and unexpected monetary policy shock to examine how monetary tightening affects commercial bank balance sheets, bank survival, and local economic activity.

Topic

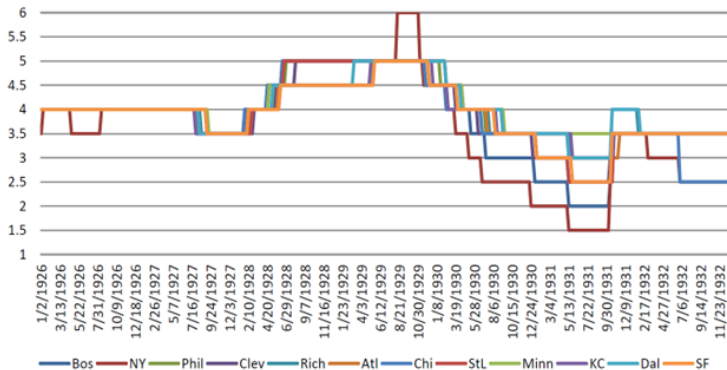
Britain Abandons the Gold Standard (September 21, 1931)

- Market participants uncertain how Fed will respond.
- NY Fed raises its discount rate by 200 basis points between Oct 9 and Oct 16. Other interest rates follow.

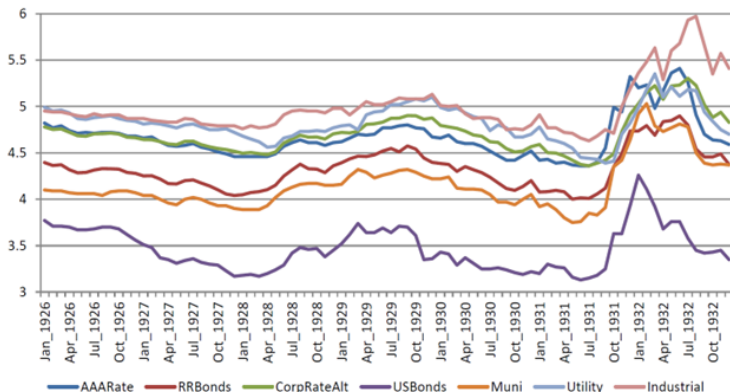
Our Analysis

- Weekly balance sheet information on U.S. commercial banks and measures of economic activity
- Detailed information on bank suspensions, including examiner reason and commentary
- Local projection and panel data methodological approaches to understand how the shock propagated to banks and local activity

Interest Rates



Interest Rates



Preview of Results

Within weeks of the shock:

- bank deposits and bond holdings fell by 10 and 12%, respectively
- loans fell more gradually over a longer horizon
- bank closures increased by about 1-2 banks per week per state
- meaningful declines in building permits and banks debits

Evidence supporting the mechanism:

- Low interest rates: bond ratio – associated with $\Pr(\text{Bank Closure})$
- High interest rates: bond ratio + associated with $\Pr(\text{Bank Closure})$

Contribution

SVB, interest rate risk:

- De Marzo et al. 2024; Drechsler et al. 2021; Jiang et al. 2024
- More competitive markets and low franchise value

Foreign MP shocks:

- Morais et al. 2019; Rey 2013; Miranda-Agrippino and Rey 2020; Kaminsky et al. 2004; Schnabl 2012
- Fed's exchange-rate defense in 1931 led to an unanticipated monetary policy reversal, which influenced financial markets

Financial stability in the 1930s:

- Too many good papers to cite :)

Historical Background

At home:

- The Fed had been steadily lowering interest rates since the start of the Depression.
- Banks responded to deteriorating economic conditions by shifting their portfolios toward government bonds and high-grade corporate securities, which they could liquidate due to deposit drains.

Abroad:

- In May 1931, Credit-Anstalt suddenly failed, undermining confidence in Central European financial institutions, leading to problems in Germany and subsequently London banks.
- Bank of England responded by lowering its policy rate, supporting domestic banks, and abandoning gold peg on September 21, 1931.

Historical Background

At home after Britain abandoned gold:

- Investors repatriated funds from the U.S. to Europe due to fears that the U.S. might devalue the dollar in terms of gold and expectations that Britain's monetary expansion would initiate economic recovery
- Fed's supply of monetary gold, \$5 billion → \$4.2 billion within weeks

Fed choice:

- Maintain low-interest-rate policy → gold holdings fall below the statutory minimum for backing currency
- Raise the interest rate → commit to keeping the value of the dollar fixed in terms of gold

Historical Background

Market confusion, *CFC*, October 3, 1931:

- “Confusion prevailed everywhere”
- Anticipation of Fed action caused investors “anxiety”
- Fed may attempt “to offset the loss of gold by expansion of Federal Reserve notes in circulation,” raising concerns that it would embark upon “a new policy of inflation.” The Fed did the opposite.

October 9 and 16, 1931:

- NY Fed raised rates from 1.5% → 2.5% → 3.5%.
- Other districts followed. Rates remained higher through end-1932.
- Market rates increased (no evidence of anticipation).
- Flows of gold from the U.S. ceased.

Historical Background

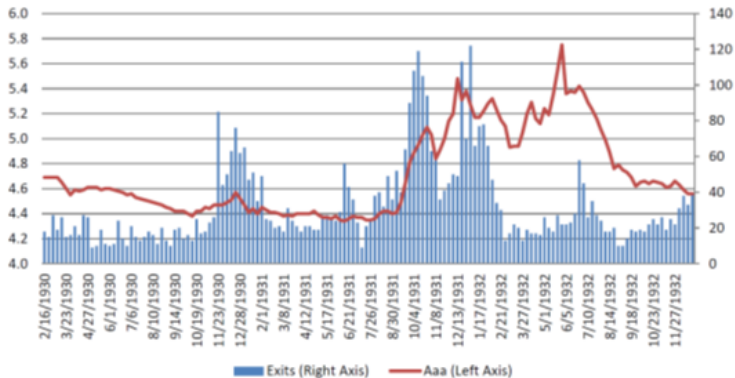
Interest rate risk:

- “More than half of the member banks in this district have depreciation on their bond accounts at present market prices sufficient to cause capital impairment. While the banks have some losses from other causes, their principal difficulty lies in bond depreciation” (NY Fed, Harrison, December 1931)

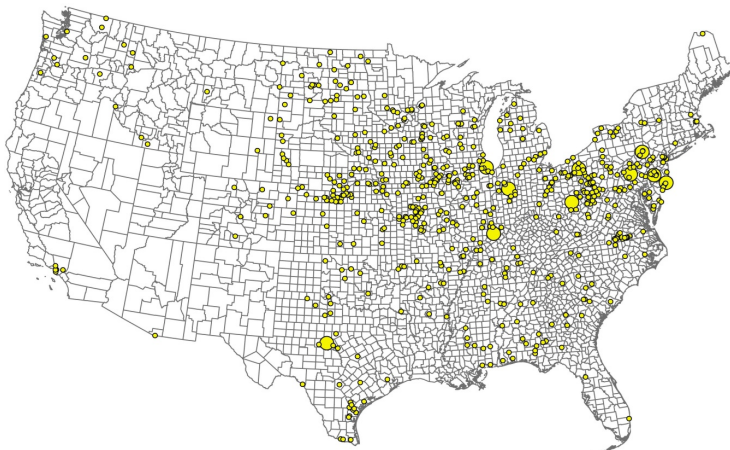
The banks:

- Deposit rates moved with discount rates. But, rate caps.
- Market values used when bonds posted as collateral with Fed or correspondents.

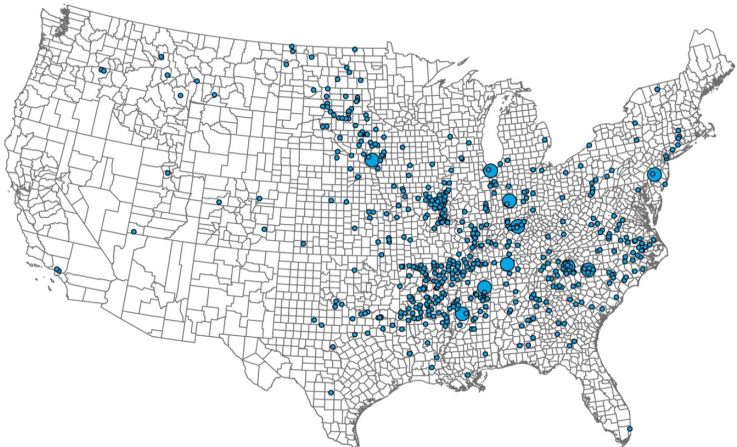
Bank Closures



Bank Closures - Oct/Nov 1931



Bank Closures - Nov/Dec 1930



Data

Bank Suspensions:

- Federal Reserve's Division of Bank Operations St. 6386 forms spanning July 1929 to March 1933 (Richardson 2007)
- The day of suspension, the nature of the suspension (e.g. temporary suspension, liquidation/receivership, a merger under duress), and regulators' conclusions about why each bank closed its doors to depositors

Balance sheets:

- Federal Reserve's weekly reporting banks (representative sample of banks in 100 cities)
- Aggregated to the district level

Data

Local economic activity:

- Weekly bank debits, 264 cities (Pedemonte, 2024)
- Monthly building permits, 229 cities (Cortes and Weidenmier, 2019)

Interest rates:

- Daily Aaa corporate bond yields (*CFC*)
- Discount rates (district-specific, average, NY Fed)

Data

4 Panel Datasets (February 1930 to December 1932):

1. Weekly panel at the Federal Reserve district level for balance sheets and closures
2. Weekly panel at the state level for closures
3. Weekly panel at the city level for bank debits
4. Monthly panel at the city level for building permits

Methodology

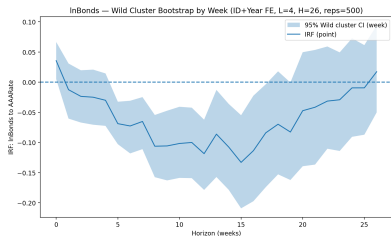
We estimate dynamic responses to the interest-rate shock with local projections (Jordà 2005).

$$y_{i,t+h} = \alpha_h + \delta_{i,h} + \tau_{year(t),h} + \beta_h R_{i,t} + \sum_{\ell=1}^L \phi_{h,\ell} y_{i,t-\ell} + \sum_{\ell=1}^L \psi_{h,\ell} R_{t-\ell} + \varepsilon_{i,t+h}$$

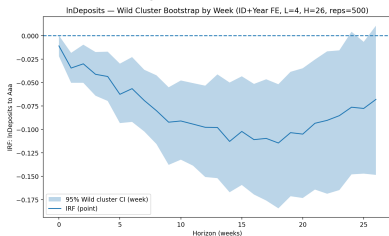
- Weekly panels: $H = 26$, $L = 4$
- Outcomes: $\ln(\text{bonds})$, $\ln(\text{deposits})$, $\ln(\text{loans})$, cumulative closures, $\ln(\text{debits})$, $\ln(\text{building permits})$
- Inference based on wild cluster bootstrap (clustered at the time level), 500 replications

Responses to Aaa Shock

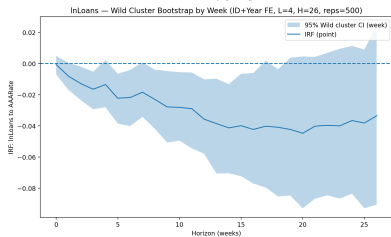
Bonds



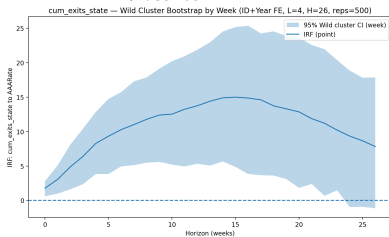
Deposits



Loans

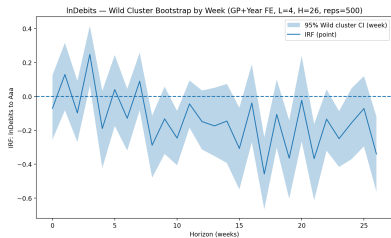


Closures

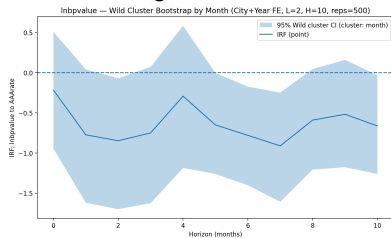


Responses to Aaa Shock

Debits



Building Permits



Results

Summary: interest rate shock quickly impacts securities and deposits, which then propagates to loan supply. Closures spike and then local economic activity declines (transactions then investment).

Robustness and additional results:

- NY Fed rate, district-specific rate, etc
- Omitting NY and IL
- Including more time effects
- Augmented model with lags of all variable
- Disaggregating deposits (demand, time, interbank) and loans (secured by stock and bonds, and other loans)

Individual Bank Outcomes

One would expect that the reversal in monetary policy disproportionately impacted banks with more bonds and hence more exposure to interest rate risk.

Data:

- Balance sheets for all commercial banks 1928-1932.
- Additional controls for bank age, county characteristics, and nearby banks

Method: Estimate the probability of bank closure where the key covariates are the security-to-asset ratio and the interaction of that ratio with the interest rate.

Predicting Quarterly Bank Closure

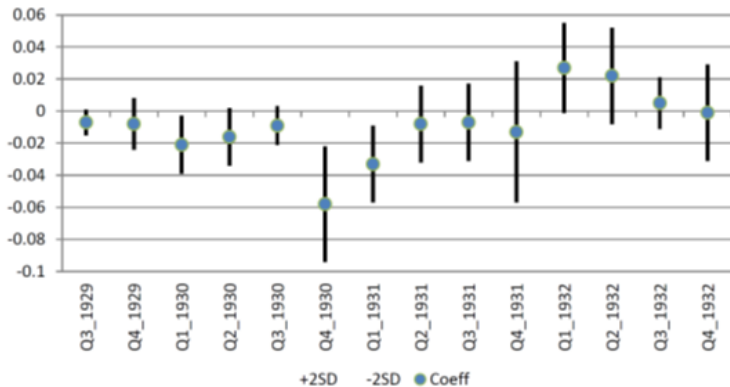
Variable	Estimate
Securities Ratio	-0.102 (0.036)
Securities Ratio * Aaa Yield	0.020 (0.008)

Interpretation:

- A one-SD change in the securities ratio (17 pp), evaluated at the December 1931 Aaa yield, raises quarterly closure probability by about 8 percent of the baseline rate
- Pre-monetary tightening, the ratio is negatively associated with closure. Post-tightening, it is positively associated.

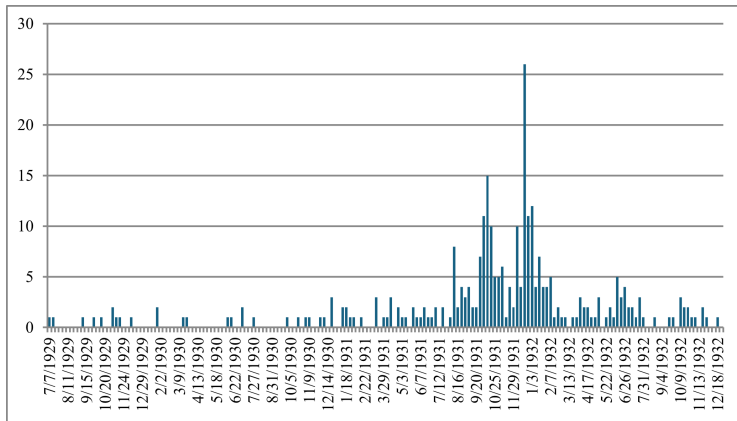
Predicting Quarterly Bank Closure

Repeated cross-section at each quarter to give visualization:



Examiner Commentary

Frequency of examiner reports noting bond depreciation as a reason for closure



Concluding Remarks

Balance sheets of banks appear responsive to monetary policy shocks, with tightening episodes associated with the probability of 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.

Concluding Remarks

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.

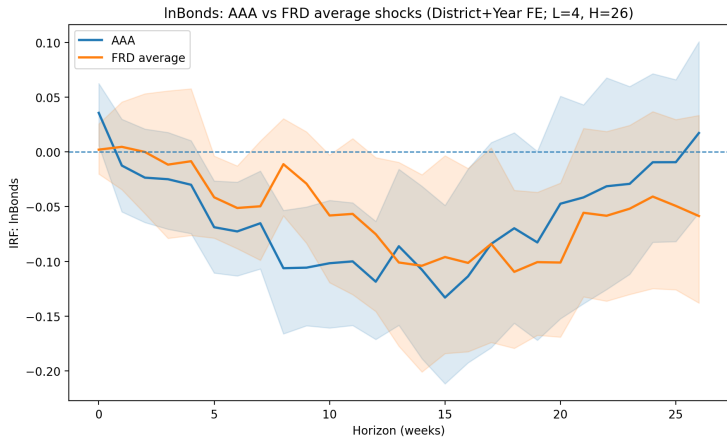
We examine a setting where competition for deposits kept franchise values low in most places. Our results suggest that monetary tightening can substantially impact commercial bank lending and health.

Thank You

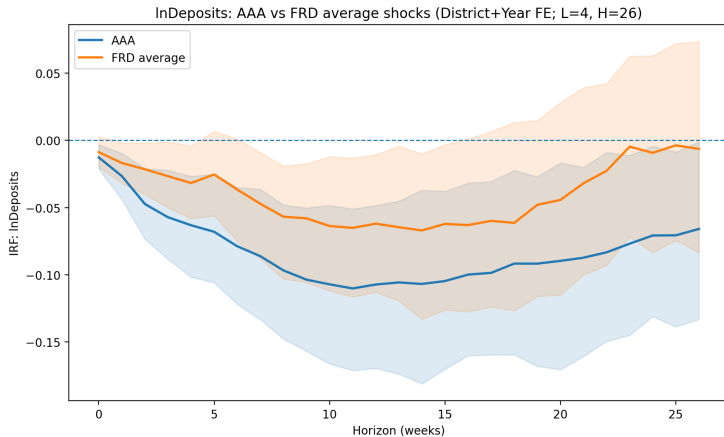
Feel free to contact me with any questions or comments.

Angela Vossmeier
Claremont McKenna College
angela.vossmeier@cmc.edu

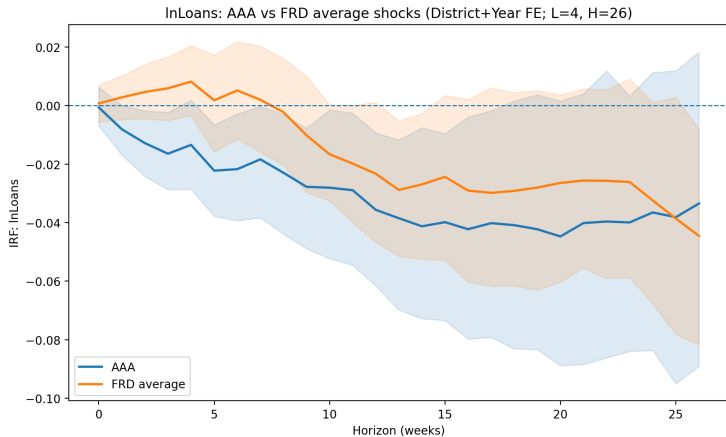
Extras



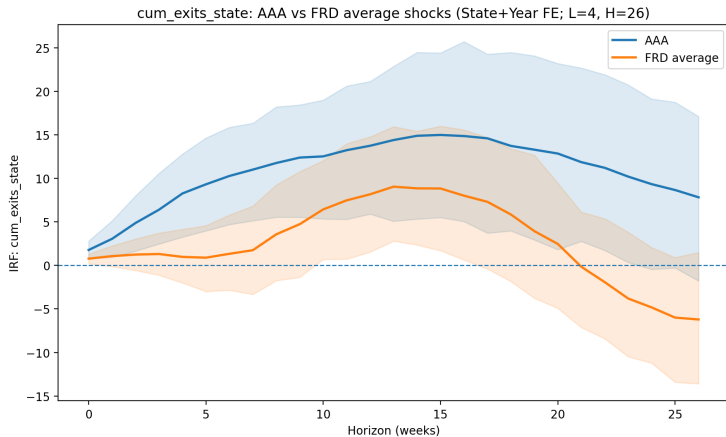
Extras



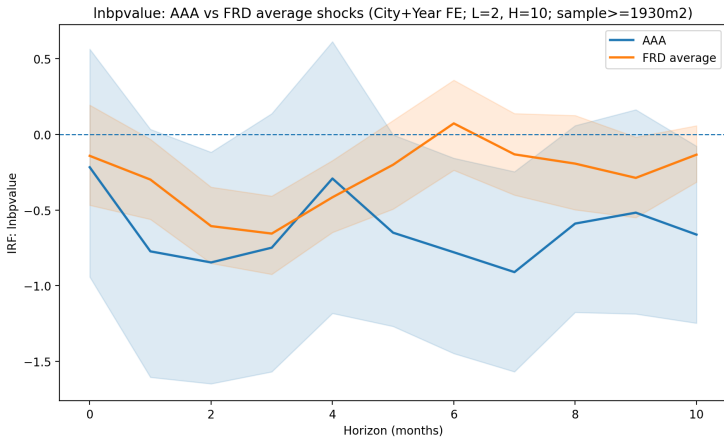
Extras



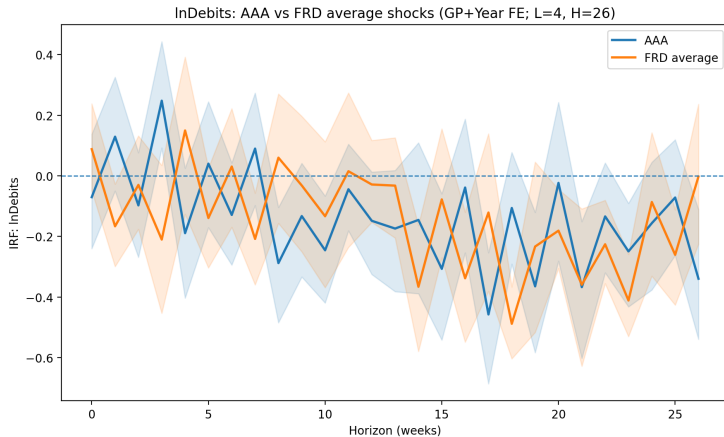
Extras



Extras

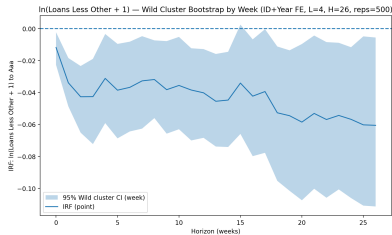


Extras



Extras

Loans Secured



Loans Other

