

The macroeconomic effects of bank regulation: New evidence from a high-frequency approach

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- Tighter bank regulation
 - mitigates risk in the financial system
 - might constrain economic activity

⇒ important to study this tradeoff
- Difficult to study macroeconomic effects of bank regulation empirically
 - regulation does not occur randomly
 - tighter regulation follows crises, e.g. Dodd-Frank Act in 2010

This paper: high-frequency identification strategy

1. Market surprises in narrow windows around Fed speeches about banking system
 - Existing literature: speeches about monetary policy → surprise changes in yields
 - Our starting point: most Fed speeches about banking system
→ construct high-frequency impact on bank stock price index
2. Elicit variation in market surprises that contains news about banking regulation
 - Sign restriction approach: distinguish “regulation news” from “health news”
 - Narrative approach: hand-pick speeches about key regulatory changes

Preview of results

- News about tighter bank regulation
 - Lower bank stock prices (by design)
 - Lower bank CDS premia
 - Reduce bank lending
 - Increase unemployment
 - Reduce inflation
 - Increase credit spreads of nonfinancial firms
- Quantifying the tradeoff
 - 10 basis point (bp) decrease in CDS premium raises unemployment rate by 27.5 bp
 - 10 bp decrease corresponds to 18.75 bp lower annual probability of default

Contribution to the literature

- Macro impact of bank regulation widely studied with structural models
 - Eg [Corbae and D'Erasmus \(2021\)](#)
- Well-identified empirical estimates exist at the micro level
 - Eg [Jiménez, Ongena, Peydró, and Saurina \(2017\)](#)
- Empirical macro-level estimates typically based on cross-country analyses
 - Eg [Jordà, Richter, Schularick, and Taylor \(2021\)](#)
- We are the first to apply a high-frequency approach to the question
 - Contribution to the recent empirical macro literature: [Nakamura and Steinsson \(2018\)](#), [Känzig \(2021\)](#), [Jayawickrema and Swanson \(2023\)](#), [Hazell and Hobler \(2024\)](#), ...

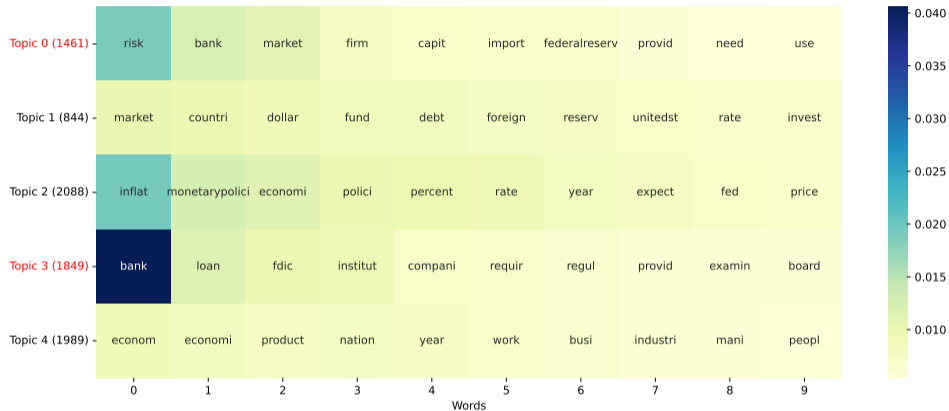
Data and methodology

- Nasdaq Bank Index: daily data available from 1971
- SPDR S&P Bank ETF: tick data available from 2005

Construction of speech data base

- Download all speeches and testimony from St. Louis Fed's FRASER data base
- Begin in 1971, where bank stock price index becomes available
- Use algorithm of [Hansen, McMahon, and Prat \(2018\)](#) to find “topics”
- Select speeches in which main topic is bank related

Results of NLP-based speech classification



- Our NLP based classification of monetary policy speeches turns out to be very similar to [Jayawickrema and Swanson \(2023\)](#)

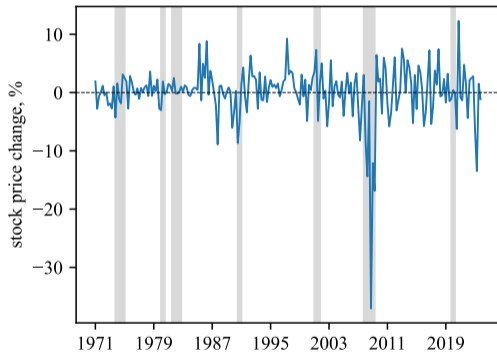
Construction of high-frequency surprises

$$s_i = \log p_{t_i, h_i + \Delta_i} - \log p_{t_i, h_i} \quad (1)$$

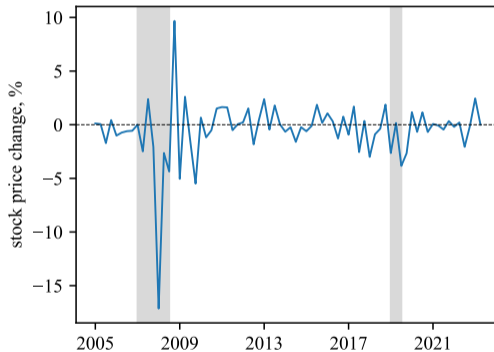
- p : bank stock price index
- t_i : date of a bank-related Fed speech
- h_i : time stamp of speech - 15 minutes
- Δ_i : 2h for speeches, 3h for testimony (Jayawickrema and Swanson, 2023)

“Raw” market surprises

Daily surprises



High frequency surprises



price changes

irfs

Identifying news about bank regulation

Identification challenge

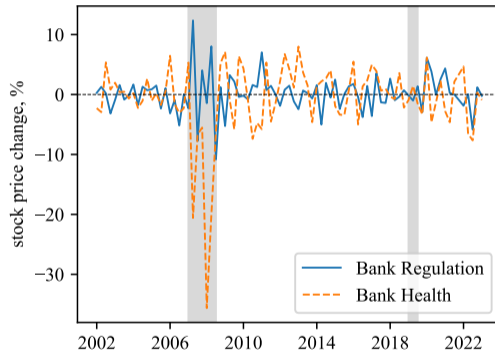
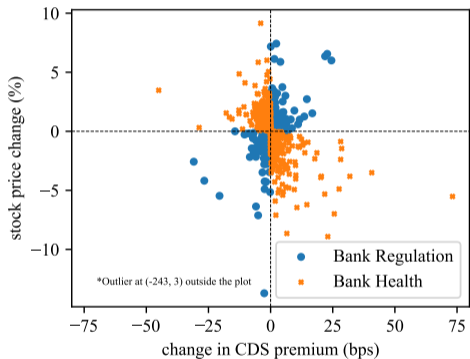
- HF approach excludes other news about the economy
- But a market surprise is not a structural shock
- Fed speech could reveal
 - News about bank regulation
 - News about health of banking system

Solution 1 - sign restrictions

	Bank stock prices	Bank CDS premium
Bank regulation shock	—	—
Bank health shock	—	+

- Idea is similar to [Jarocinski and Karadi \(2020\)](#) in monetary literature

Sign restriction-based shocks



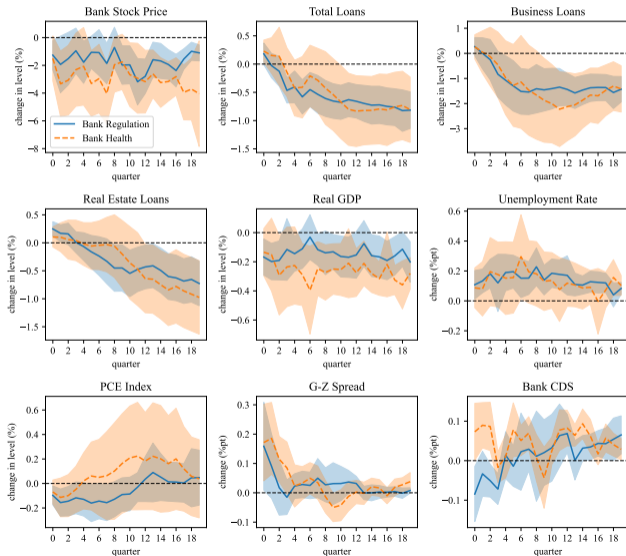
Solution 2 - narrative approach

Act	Date	Speech Date
The Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA)	3/31/1980	7/26/1978
The Garn–St Germain Depository Institutions Act of 1982	10/15/1982	11/14/1980
The Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA)	8/9/1989	11/19/1987
The Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA)	12/19/1991	7/12/1990
The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994	9/13/1994	9/15/1992
The Gramm-Leach-Bliley Act of 1999	11/12/1999	4/19/1998
The Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010	7/21/2010	7/24/2008
The Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA)	5/24/2018	9/28/2016

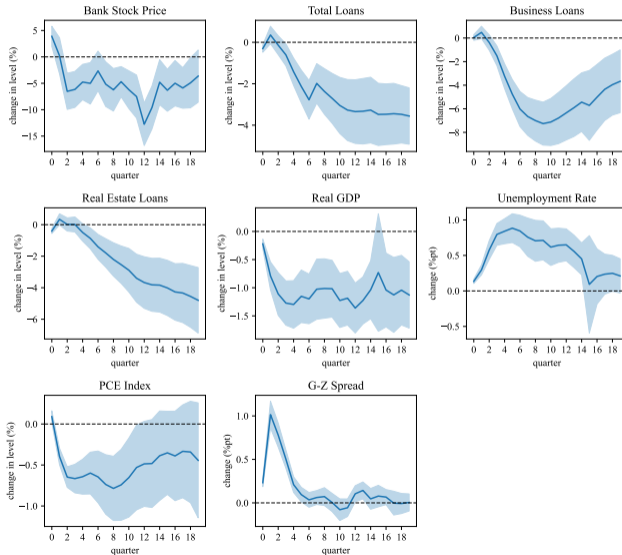
- Hand-select speeches with the *first mention* of key legislative changes

Main results

Sign restriction-based IRFs



Narrative-based IRFs



Quantifying the tradeoff

- 10 bp decrease in CDS premium raises unemployment rate by 27.5 bp
- 10 bp decrease corresponds to 18.75 bp lower annual probability of default
- The average annual probability of default is around 1.5% (std. dev. is 1.2 pp)
 - Excluding the GFC, average is 1.2% (std. dev. is 0.36 pp)
- Relative to the literature, our estimate of the economic cost of regulation is high

Additional results

- Mechanism
 - Banks respond to news about regulation by tightening lending standards today [more](#)
 - Banks cost of equity increases because of the news about regulation
- Effects on long-run activity? [more](#)
- Bank surprises vs. monetary policy surprises [more](#)

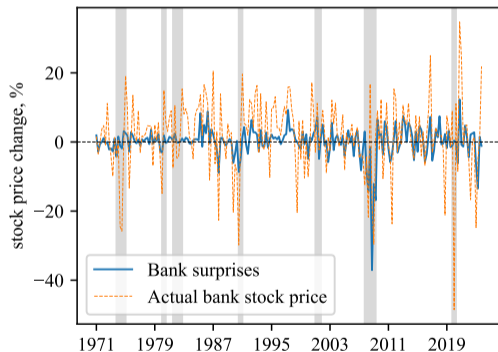
Conclusion

- Important to understand costs and benefits of bank regulation
- We use a high-frequency identification approach
- We study news about bank regulation revealed by Fed speeches
- While mitigating risk, news about bank regulation slows activity quite strongly

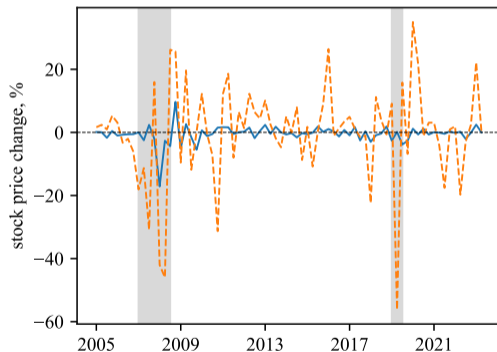
Appendix

“Raw” market surprises and actual stock price changes

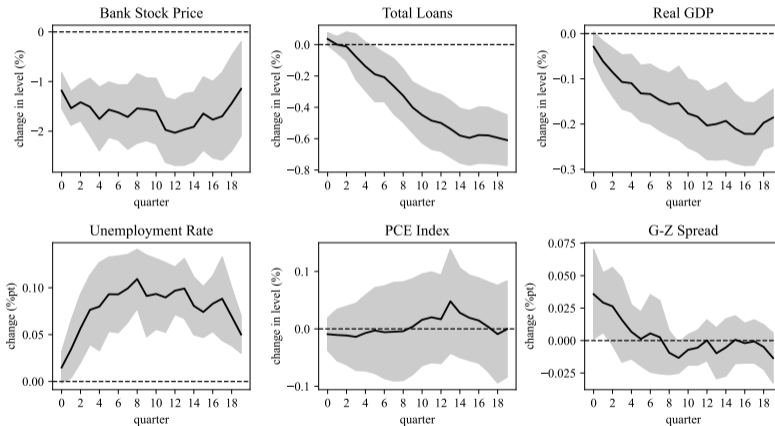
Daily surprises



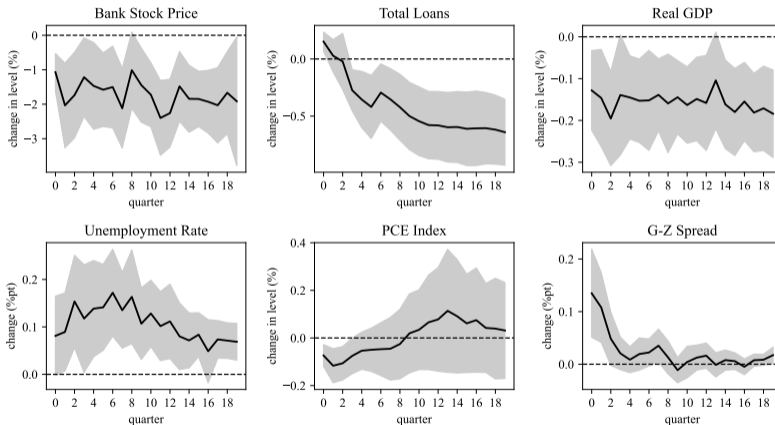
High frequency surprises



IRFs to “raw” surprises - daily version

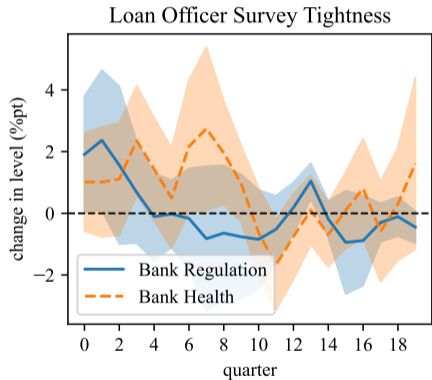


IRFs to “raw” surprises - high-frequency version

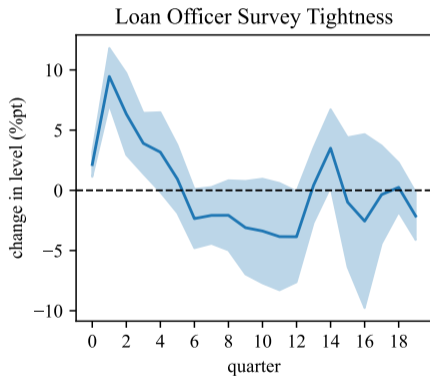


Lending standard IRF

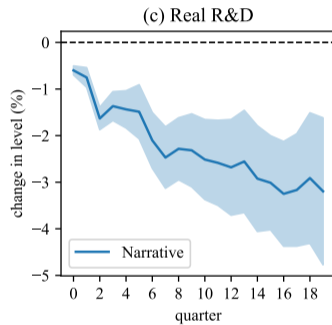
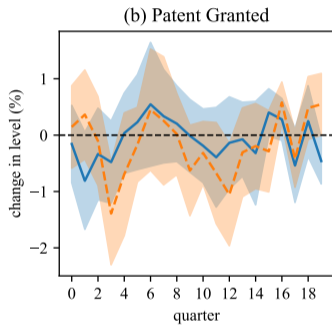
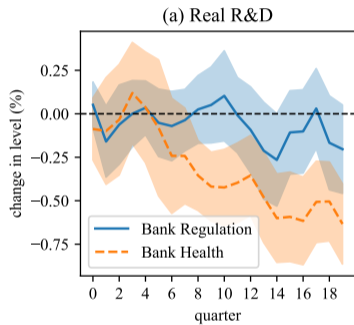
(a) Sign-restriction approach



(b) Narrative approach

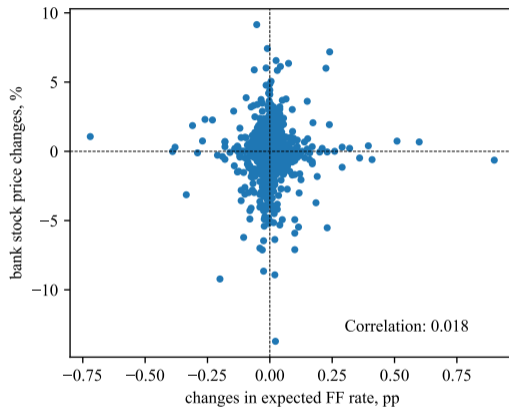


Long-run effects



back

Bank regulation vs. monetary policy surprises



back

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