



FEDERAL RESERVE BANK *of* NEW YORK

Discussion:
Social Media as a Bank Run Catalyst
Cookson, Fox, Gil-Bazo, Imbet & Schiller

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Disclaimer

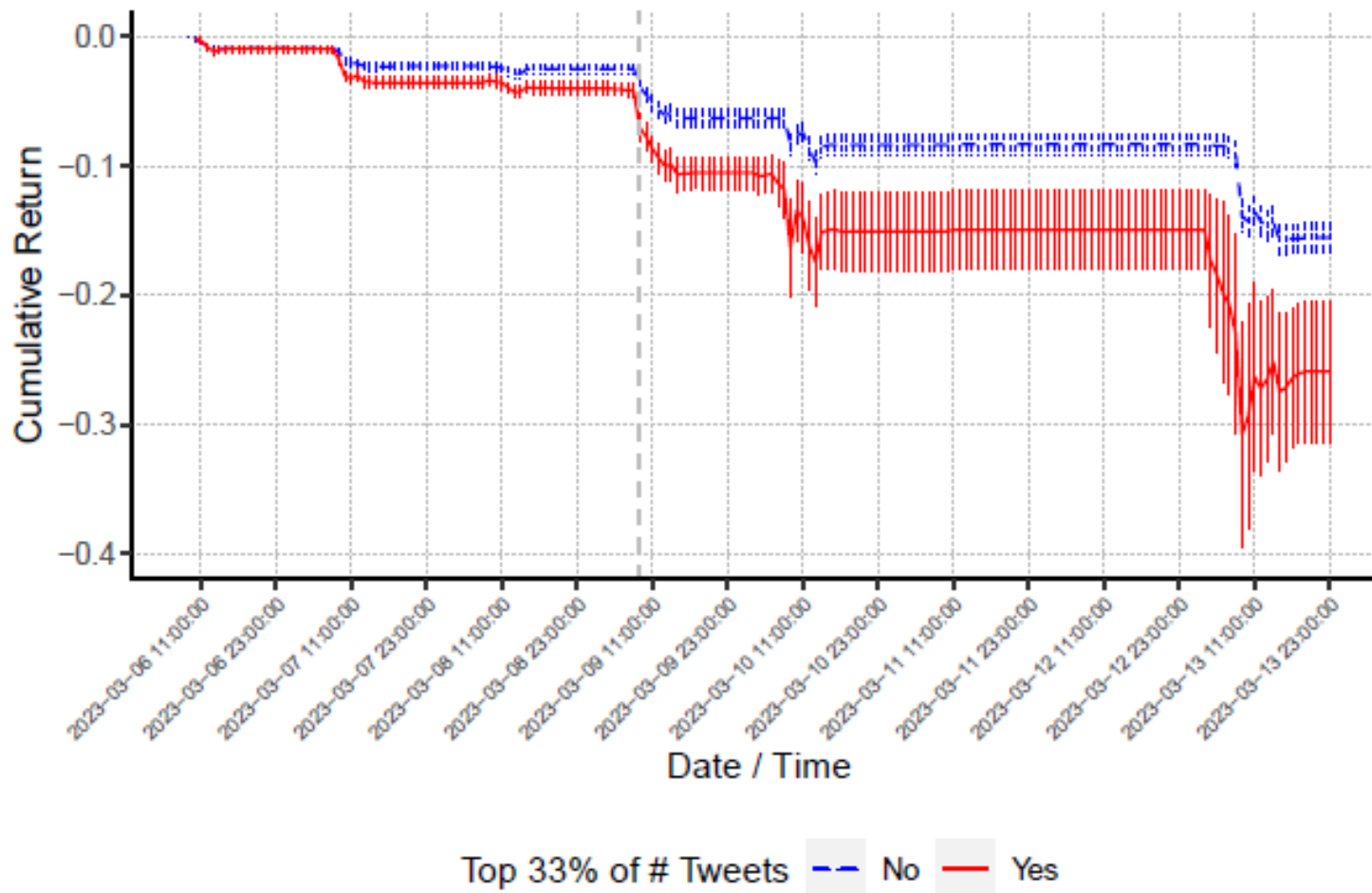
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Overview

- How does social media impact bank runs?
- Track extent to which banks were tweeted about on Twitter (now known as X) before SVB run
- Key findings:
 - Banks with more pre-SVB tweet volume have larger stock price decreases
 - And larger deposit outflows

The paper in a graph

- Even excluding SVB, companies who were tweeted about had lower returns (Figure 9 (b))



Context

- SVB sparked a run on empirical bank run papers, which generally look at bank stock prices to proxy for depositor runs (all papers are 2023)
 - Characteristics of banks that were run: Jiang et al, Flannery and Sorescu highlight *mark-to-market losses* and *uninsured depositors*, Choi et al Dreschler et al and Haddad et al add franchise value of deposits and potential runnability nonlinearities
 - Benmelech et al look at branch density and IT investment to highlight role of technology
- Luck et al use H8 data to show that banks replace deposit outflows with FHLB funding and that deposits from regional banks went to G-SIBs

Context II

- Theories of runs
 - Panic/sunspot runs (eg Diamond & Dybvig 1983) as a result of coordination problems among agents – Depositors run because they expect other depositors to withdraw
 - Fundamental runs (eg Allen & Gale 1998) – Depositors run because of information on fundamentals
- Empirical literature on social networks in bank runs (Calomiris & Mason 1997, Iyer & Puri 2012, Kelly & Grada 2000)
- Social media could be doing both – providing a common signal the depositors plan to withdraw and sharing information about bank fundamentals

Data

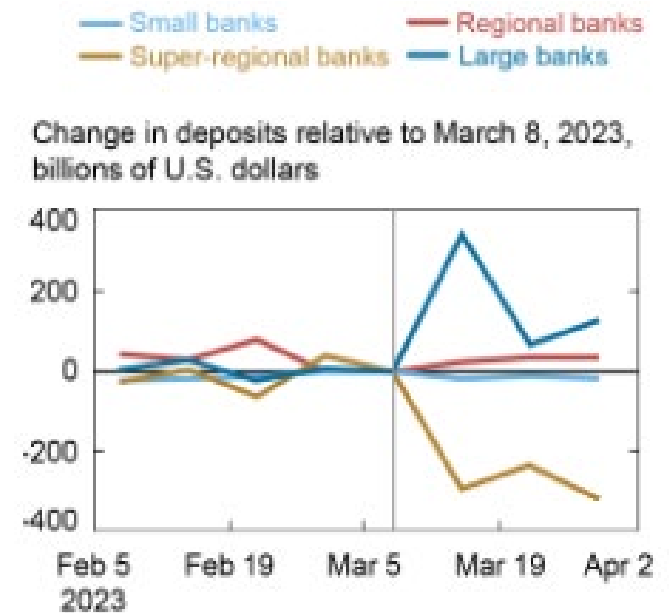
- Twitter Exposure: Tweets mentioning banks
 - VADER measure of sentiment
 - Content dictionaries “balance sheet” (MTM, HTM), “cryptocurrency”, “run behavior”, “contagion”
 - Characteristics of tweet authors – Start-up community
 - Tweets measured both January 1, 2023 to February 15, 2023 and intraday
- Bank characteristics
 - Like Jiang et al (2023), estimate MTM change between 2022:Q1 and 2023:Q1 based on changes in ETF and Treasury indices and bank balance sheet data, measure uninsured depositors as of 2022:Q4

Key findings

- More Twitter exposure → lost more stock value
 - Particularly high % uninsured and high MTM losses
- Who tweets matters – stock value impact is related to tweets from the startup community, even controlling for overall tweet activity during the period
 - Interpretation? tweets by depositors or by influencers
- More Twitter exposure → deposits fell by more from 2022:Q4 to 2023:Q1
 - Within uninsured depositors, deposits fell by more for only highly-tweeted banks with more MTM losses
- Intraday negative response of stock prices to tweets for banks with high % uninsured and high MTM losses

Key findings?

- Top 12 retweeted tweets in March 2023 includes Bank of America tweet about information in January...
- ... but there is no run on Bank of America
- What do we learn from this?
 - Twitter is about fundamentals?
 - Twitter can spread misinformation?
- *My interpretation – social media not necessarily making sunspot runs more likely*



Source: Luck, Plosser & Younger May 2023

1. stock investors \neq depositors

- Approach uses Twitter use of \$cashtag (with a stock ticker)
- Does this miss tweets with content about the banks that does not target stock investors (i.e. depositors)?
 - banks with fickle stock investors are more likely to have falling stock prices and lots of tweets?
- What is impact of other technology that communicates issues like DownDetector?
- Sample has 280 banks. There are 700+ public banks and 4000+ banks in the US.
 - Presumably, a lot of public banks with 0 Twitter cashtags?

1. stock investors \neq depositors (cont'd)

- FRBNY work in progress using payments data finds not all banks with runs are public
 - Banks with public equity are more likely to have a run
 - Banks based in California are more likely to have a run
- Alternative hypothesis: In California and in banks with public equity, depositors are on Twitter.
- No first mover advantage in selling equity
- General caution about drawing strong conclusions about deposit runs from behavior of equity holders

2. Generalizability

- Other than very big banks, banks with a lot of twitter activity (SVB, First Republic, Silvergate, Signature Bank) had a lot of social media using depositors and a lot of HTM losses
- These depositors and their banks thus particularly likely to see contagion through social media, but doesn't mean social media *creates* contagion for banks with different depositors
- Using “Crypto” in the Twitter analysis seems particularly vulnerable to this concern
 - Root cause is correlated crypto deposits

3. Is Twitter sharing fundamentals or runs?

A. Can the paper do more to study misinformation?

- BAC tweet was an example of misinformation, but are there more examples where sunspot runs do not happen?
 - How many high Twitter banks see prices fall without having large MTM losses / uninsured depositors?
- Sunspots: Coefficient on high twitter X high uninsured deposits (3.2789) with twitter X high MTM losses (0.866) (Table 4)
 - Maybe interesting to do more to measure solvency risk – MTM vs capital
- Is there reversion in high twitter stock prices once there is no run?

3. Is Twitter sharing fundamentals or runs?

- B. Evidence for vicious cycles? Do MTM, %uninsured and stock price declines drive tweets?
- C. Expand analysis on types of tweeters – other than the startup tweeters, which tweets matter?
 - Informed vs noninformed (assuming you could define these) E.g. professional investors vs influencer?
 - What matters in influential tweets?
- Do tweets about high MTM banks get shared more or less than low MTM banks?

4. Robustness

- Given all the papers on this topic, you will probably be asked to do a lot of variations on your measures.
- My top ones:
 1. Separate balance sheet risk (runnable depositors) from MTM losses in addition to specification that include the interaction
 2. Interact terciles/quartiles of the risk rather than continuous: Otherwise you risk a bank with an extreme on these effectively with a limited run risk
 3. Control for bank asset size in your specifications

5. What does this mean for financial stability?

- Social media presents an additional way in which depositors can receive public signals that allow for coordination and thus may increase risk of runs
 - Should supervisors monitor X? Facebook? Have more of a presence to counteract misinformation?
- How much can learn about the speed of runs without information from deposits?
 - High Twitter banks also have: Technology to withdraw/ move funds, correlated depositors, exposure to crypto deposits
- Does this mean more risk of sunspot runs, or do you need weak fundamentals?
 - MTM without being interacted with uninsured depositors is unclear
- Can you predict deposit betas with higher tweets?

Key questions

- Is social media different from other ways in which social networks lead to bank runs?
- If so, what should policy makers do about it?
- Takeaway: Social media fans the flames of runs
 - Harder to say this is a social media induced run

Conclusion

- Clear evidence that banks with more tweets in early 2023 were more likely to lose deposits and experience falling stock prices
- Neglected risks are highlighted more quickly in companies with Twitter followings
- Clear financial stability risk when correlated depositors have shared public information sources
 - Need to understand connections among depositors
- Well executed paper – Thanks for the opportunity to read!