

# THE EVOLUTION OF BANKING IN THE 21<sup>ST</sup> CENTURY: EVIDENCE AND REGULATORY IMPLICATIONS

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# Motivation

- 2023 crisis proved bank runs are not a thing of the past:
  - ▣ Worries about increased vulnerability to run risk due to:
    - Growth in uninsured deposits
    - Technology and social media → Bank runs more rapid than ever
- How to adapt regulation to address heightened run risk?
  1. Expand deposit insurance?
  2. Tighten liquidity and/or other regulations?
    - E.g., require flighty deposits to be backed with more liquid assets?
- This paper:
  1. Examine broad trends in banking industry over past 25 years
  2. Assess regulatory options in light of these trends

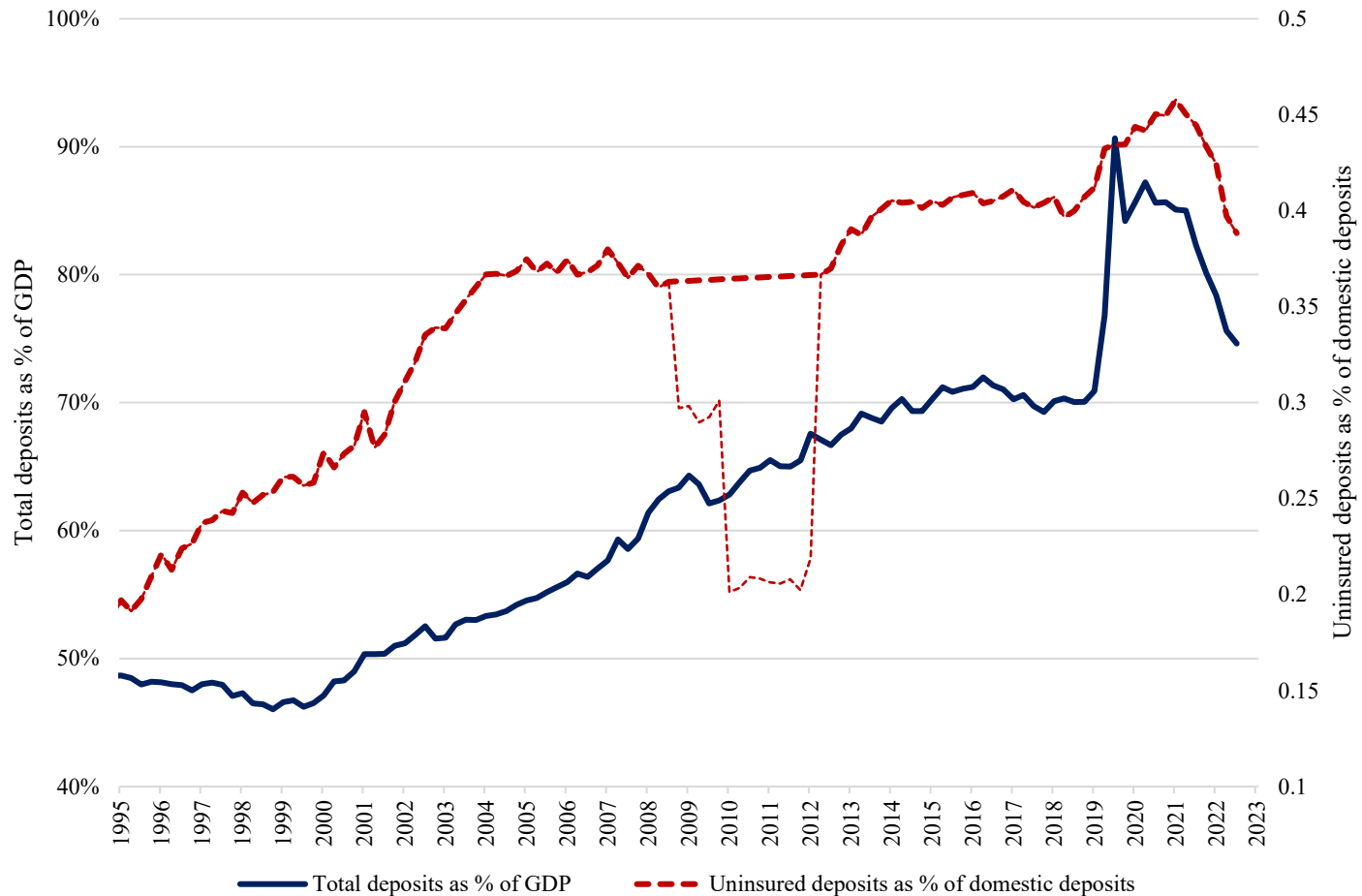
# Trends

- Two fundamental pillars of banks' business model:
  1. Lending: Making information-intensive loans to opaque borrowers
  2. Deposit-taking: Offering safe savings products + transaction services
  
- Key trends in banking in recent decades:
  - Steady growth of securities markets + lending by non-bank institutions  
→ Declining importance of information-intensive lending by banks
  - Deposit-taking seems as important as ever
    - Deposits rising relative to GDP, though stable relative to wealth
    - Growing share of bank deposits are uninsured
  - So, banks increasingly take deposits and invest in securities (e.g., long-term USTs and MBS) where they have no special edge
    - Banks becoming more like uninsured-deposit-financed bond funds

# Regulatory implications

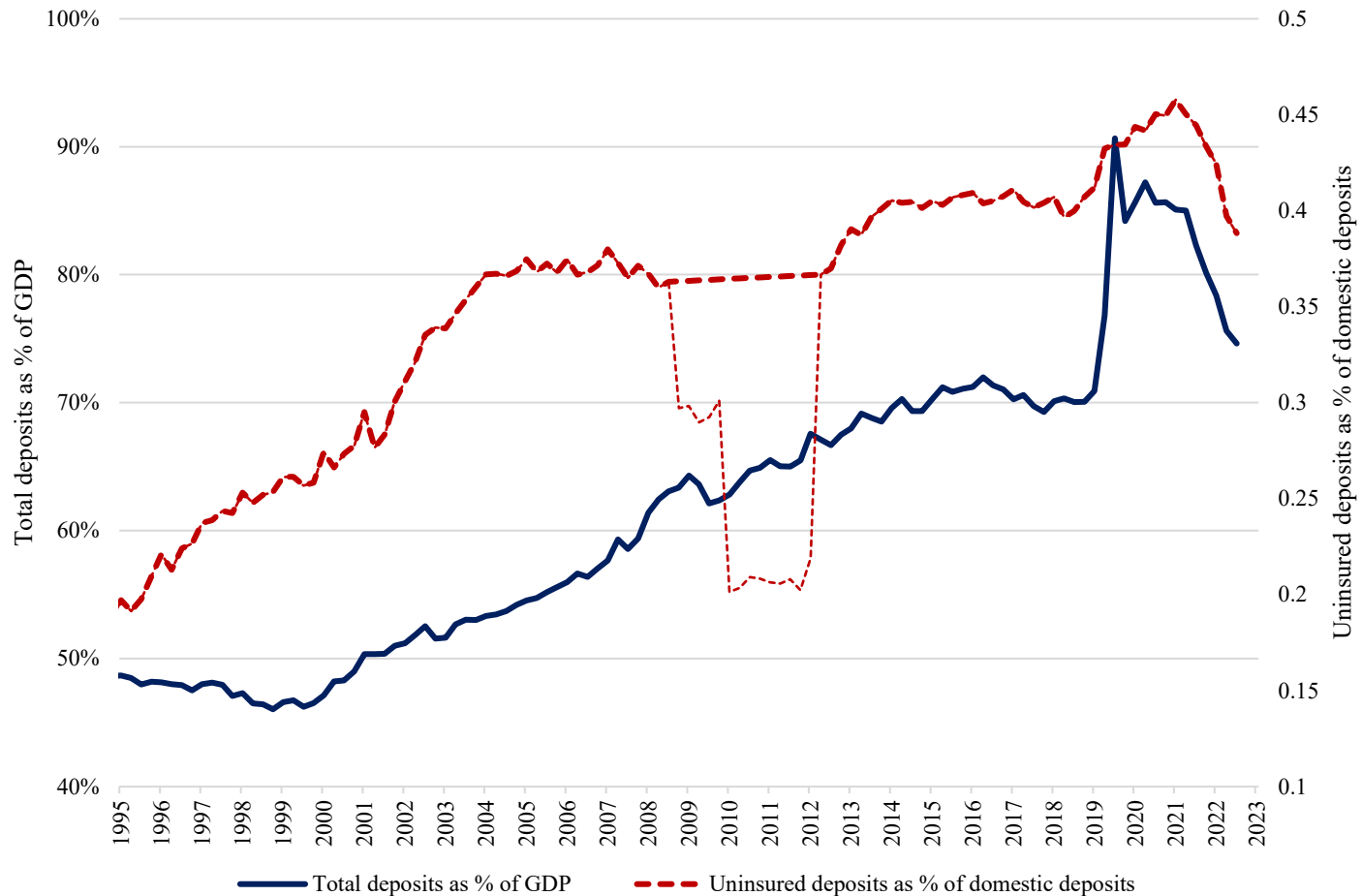
- How to address vulnerability to uninsured depositor runs?
  - ▣ Two broad categories of options, with different costs
    1. Expand deposit insurance coverage:
      - Might worsen moral hazard distortions and expose taxpayers to losses
    2. Tighten liquidity regulations:
      - Forcing banks to hold more liquid assets might crowd out information-intensive lending.
  - ▣ Banks' declining role in lending inclines us towards option #2.
- Implementation: modify Liquidity Coverage Ratio rule
  - ▣ Require large banks to pre-position enough collateral at Fed discount window to withstand an uninsured depositor run
  - ▣ Collateral should largely be *short-term* government securities

# Growth in Bank Deposits



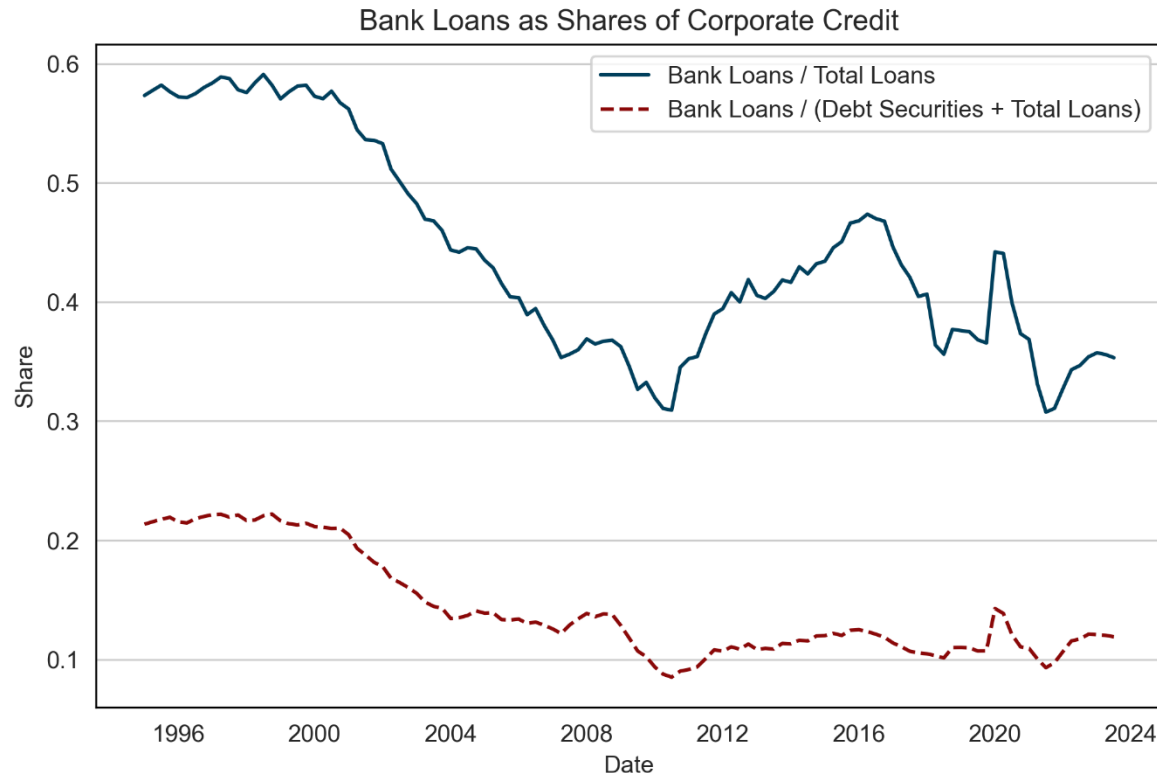
□ Bank deposits: 49% of GDP in 1995 to 75% today

# Growth in Bank Deposits



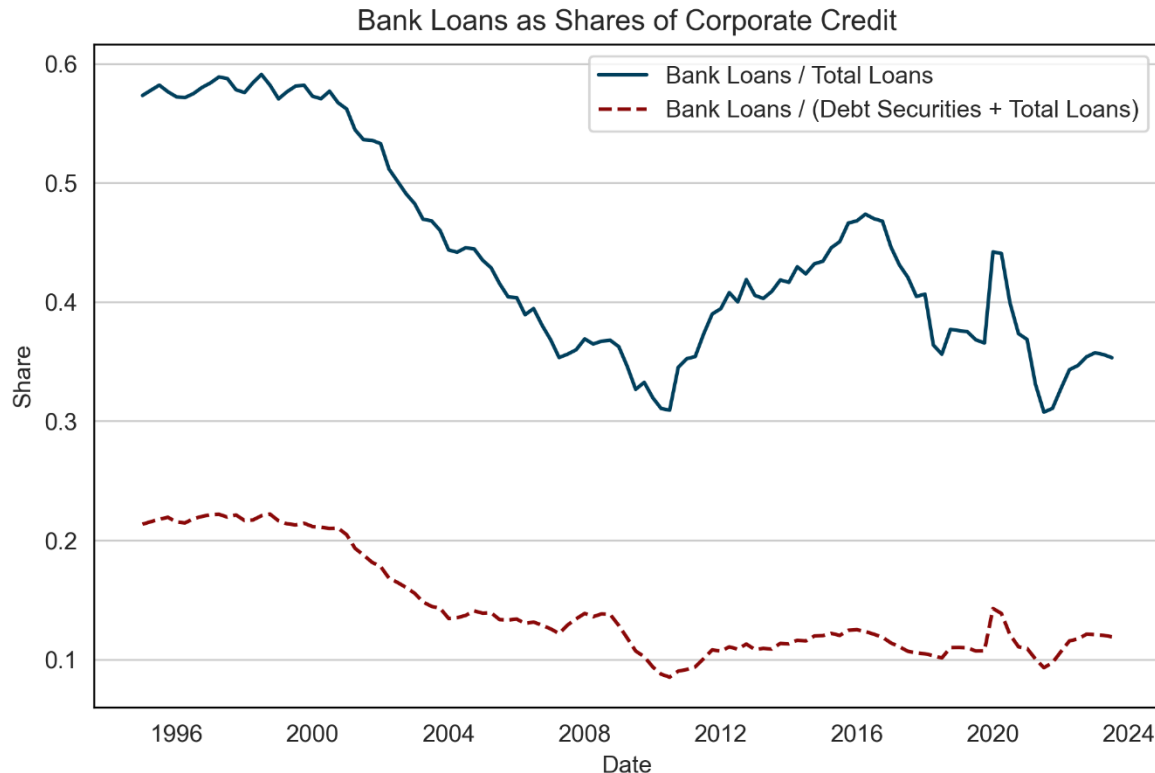
□ **Uninsured share of deposits: 20% in 1995 to 39% today**

# Bank Lending to Corporations



- In 2000, bank loans represent 57% of total corporate loans and 23% of total credit to nonfinancial corporations
- In 2023, represent 35% of total loans and 13% of total credit

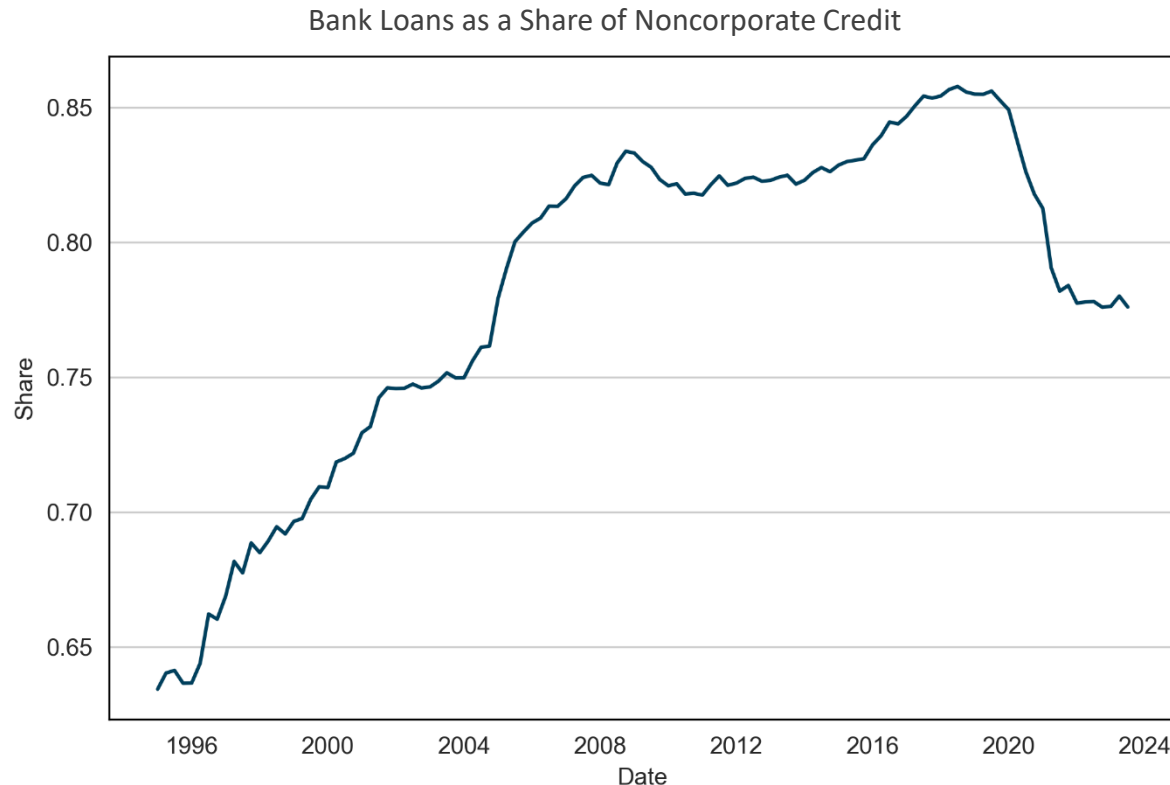
# Bank Lending to Corporations



- Trend reflects increasing competition from non-bank lenders
  - ▣ Since 2000, rise of **leveraged loan** market in which non-banks lend to firms
  - ▣ Over past decade, rapid growth of **BDCs** and **private credit funds**



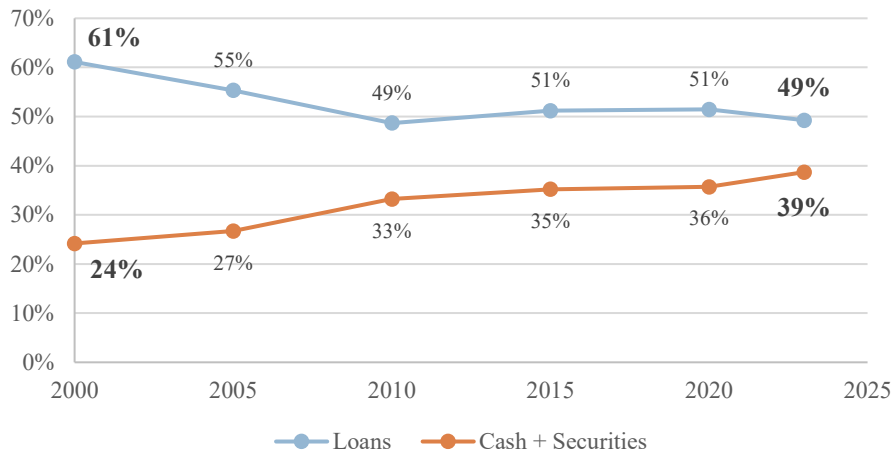
# Bank Lending to Noncorporate Firms



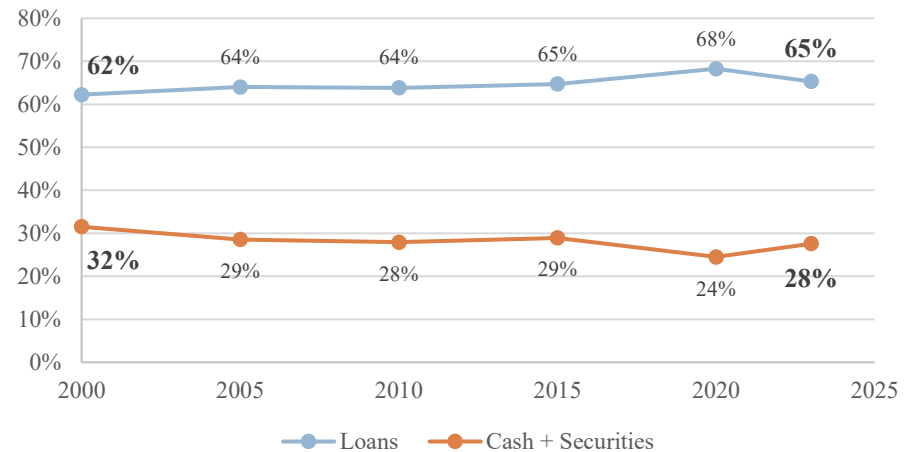
- By contrast, banks are still the dominant lenders to smaller noncorporate firms. So smaller banks are less affected.

# Bank Balance Sheet Shares

Banks > \$100 billion



Banks < \$100 billion



- Increasingly, banks take deposits and invest in securities where they have no special edge
  - ▣ Trend driven by larger banks (assets > \$100 billion)
  - ▣ By contrast, balance sheet shares of smaller banks have been stable
- In cross-section of large banks, faster deposit growth is correlated with slower loan growth and faster growth of cash and securities.

# Regulatory Implications

- How to adapt regulation to address heightened run risk?
  1. Expand deposit insurance?
  2. Tighten liquidity regulation?
    - Require flighty deposits to be backed with more liquid assets
  
- Develop a simple model to clarify the key issues

# Regulatory Implications

- Representative bank with the following initial balance sheet:

<u>ASSETS</u>		<u>LIABILITIES + EQUITY</u>	
$L$	Information-intensive loans (risky and illiquid)	$D_R$	Retail deposits (insured)
$S$	Long-term securities (somewhat risky, but liquid)	$D_W$	Wholesale deposits (uninsured)
$B$	Short-term, very low-risk securities (liquid “T-bills”)	$E$	Equity

- Information-intensive loans  $L$  are positive NPV and create social surplus
- Liquid securities,  $S + B$ , are zero NPV and create no surplus
  - Can be easily intermediated outside of the banking system
- Size of balance sheet ( $D_R + D_W + E$ ) and capital structure are fixed
  - Implicitly, savers want deposits, so deposits create social surplus
  - And, costly to require bank to use more equity financing

# Regulatory Implications

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- If there is bad news about bank solvency:
  - There is a run by uninsured wholesale depositors
  - Bank repays withdrawing deposits ( $D_W$ ) in full by liquidating assets
  - If value of banks’ liquid securities are insufficient to meet withdrawals:
    - Bank must sell some of its illiquid loans at a fire-sale price
    - Fire-sales have negative externalities on financial system and economy

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- If banks are left to their own devices:
  - ▣ Will hold a buffer of liquid securities against their run-prone uninsured deposits due to fire-sale discount on illiquid loans
  - ▣ However, buffer is too small since banks don’t internalize financial stability externalities that arise when they sell illiquid assets

# Regulatory Implications

- How to respond if vulnerability to uninsured depositor runs rises?
  - Contrast two simple policies
  - Both will eliminate financial stability threat posed by bank runs;
  - So same benefits but different costs
- 1. Expand deposit insurance—e.g., insure all deposits
  - Costly due to additional moral hazard distortions and fiscal costs.
  - E.g., with all insured deposits and regulatory forbearance, get zombie banks.
- 2. Tighten liquidity regulation—e.g., require uninsured deposits to be more fully backed by liquid assets.
  - Costly because this larger liquidity buffer crowds out some valuable information-intensive lending
- Banks' declining role in lending suggests that costs of 2. are relatively small, inclining us towards tighter liquidity regulation
  - In more general model, would make sense to adjust along multiple margins

# Regulatory Implications

- Implement by modifying Liquidity Coverage Ratio which currently requires large banks to have:
  - ▣ High Quality Liquid Assets  $\geq$  Cash outflows over 30-day stress period
- Relative to current LCR, argue that modified LCR should:
  - ▣ Assume much higher cash outflows for uninsured deposits
  - ▣ Because their prices may fall in run state (SVB), long-term securities should not count as much towards HQLA as short-term securities.
  - ▣ Require banks to pre-position collateral at Fed's discount window
  - ▣ With sufficiently conservative haircuts, could allow some loans that are pre-positioned at discount window to count towards HQLA.



# Conclusion

- Key trends in banking:
  - ▣ Banks are playing a less vital role in lending to opaque firms
  - ▣ Deposit-taking important as ever + Rising share of uninsured deposits
  - ▣ Banks becoming more like uninsured-deposit-financed bond funds
  - ▣ True for larger banks, not so much for smaller community banks.
  
- How to adapt regulation to address heightened run risk?
  - ▣ Tighten liquidity regulations on large banks by modifying current Liquidity Coverage Ratio rules.
  
- Other policy ideas:
  - ▣ Capital: remove AOCI filter and consider ex ante capital charge for interest-rate risk.
  - ▣ Mergers: business model of regional banks is under significant stress: need to be open to mergers to consolidate and remove excess capacity.