The Regulation of Private Money Production

Gary Gorton, Yale and NBER

Why bank regulation?

- The goal of bank regulation is to reduce the likelihood of a financial crisis, a bank run.

Financial Crisis

- A "financial crisis" is an event in which households and firms no longer believe that bank debt (private money) is worth par – instead they want cash en masse: A run on the banks.
- But, banks do not have the cash, so insolvent. So, the banking system is insolvent.

Financial crises are not rare

- Financial Crises:
  - Have occurred in all market economies throughout history;
  - Occur in advanced economies and in emerging markets;
  - Occur in economies with or without central banks;
  - Occur in economies with and without deposit insurance;
  - Occur with different forms of bank debt.

Financial crises not rare

- Since 1970 there have been 147 systemic events around the world.
  - Of the 147 events, about 65% involved bank runs.

- Modern crises may appear to be idiosyncratic. Agents' expectations cause them to wait for central bank or government intervention.

L.W. SCHWENK
EUROPY
$22

Banks

- The output of a bank is short-term debt.
  - Diamond and Dybvig (1983): debt for consumption smoothing.
  - Gorton and Pennacchi (1990): debt for transactions without adverse selection.

- But, such debt is vulnerable to runs: financial crisis.

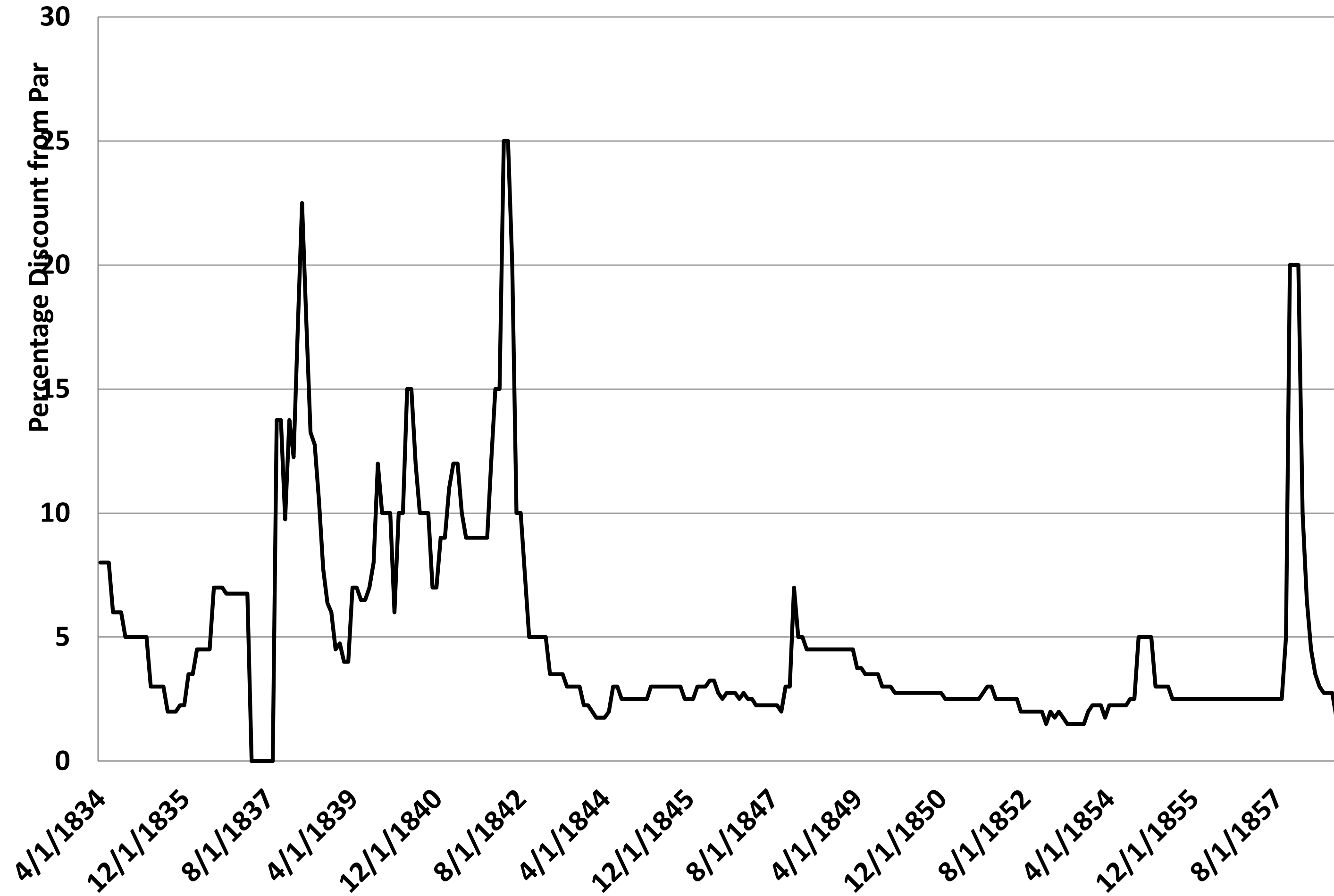
What is the problem with bank debt?

- Bank debt is produced to be information-insensitive.
  - It is not profitable for any agent to produce private information about the debt. And all agents know this.
  - In other words, <u>we do not want the price system to work</u>.

- When the price system works-→crisis.

- Why is this?

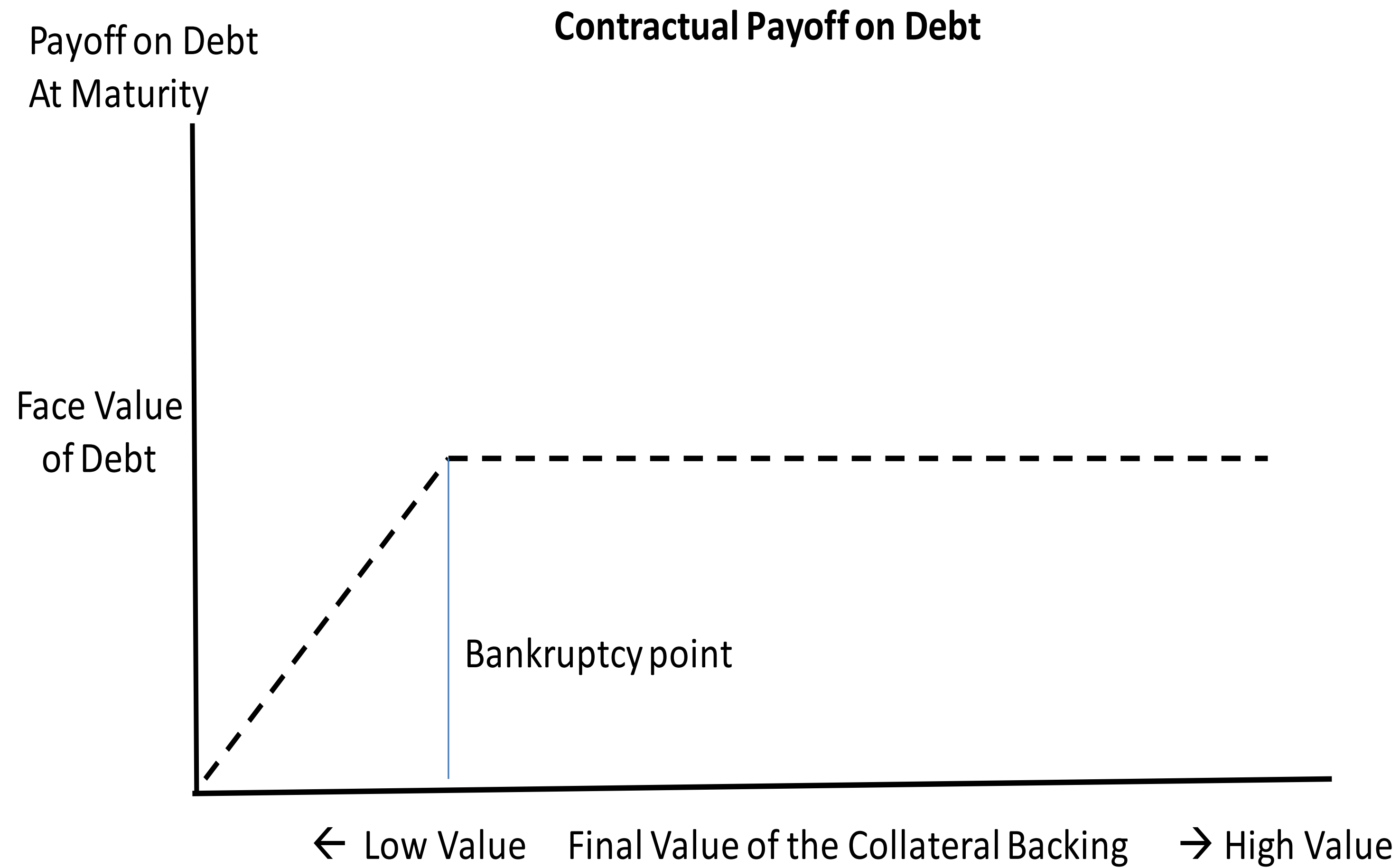
BULL'S HEAD BANK
NEW YORK
ONE
ONE
One
Dollar

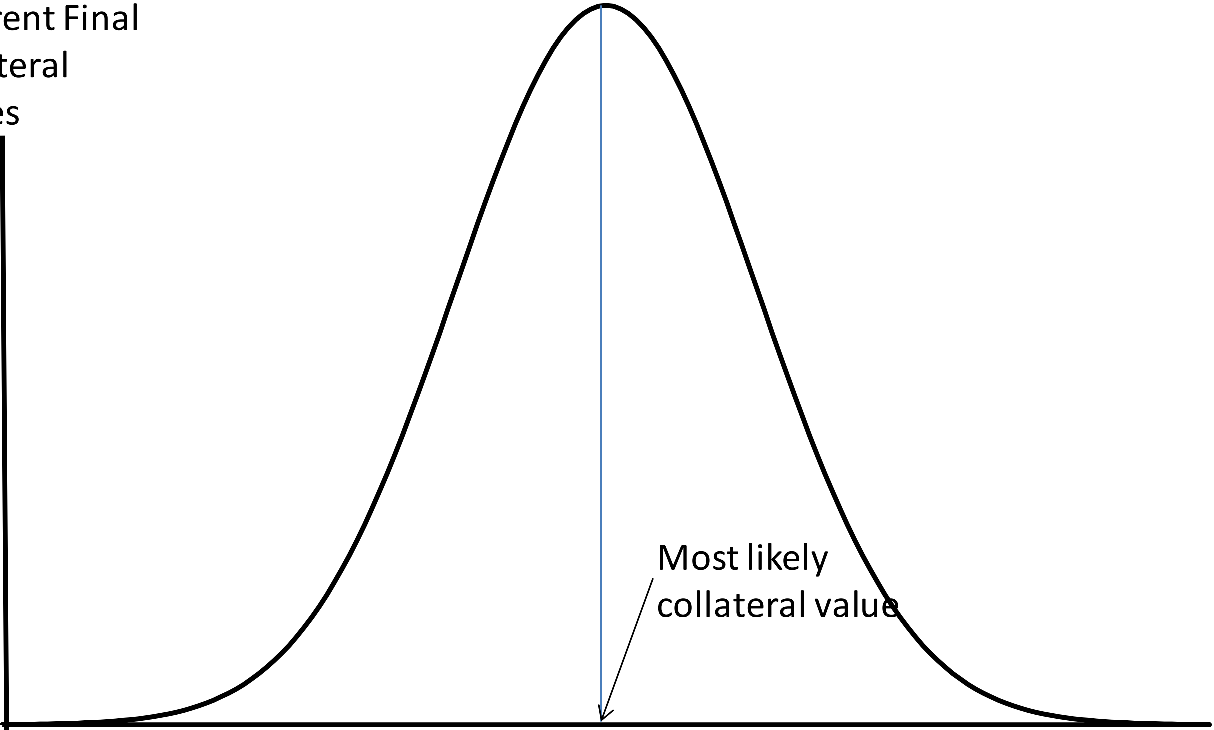


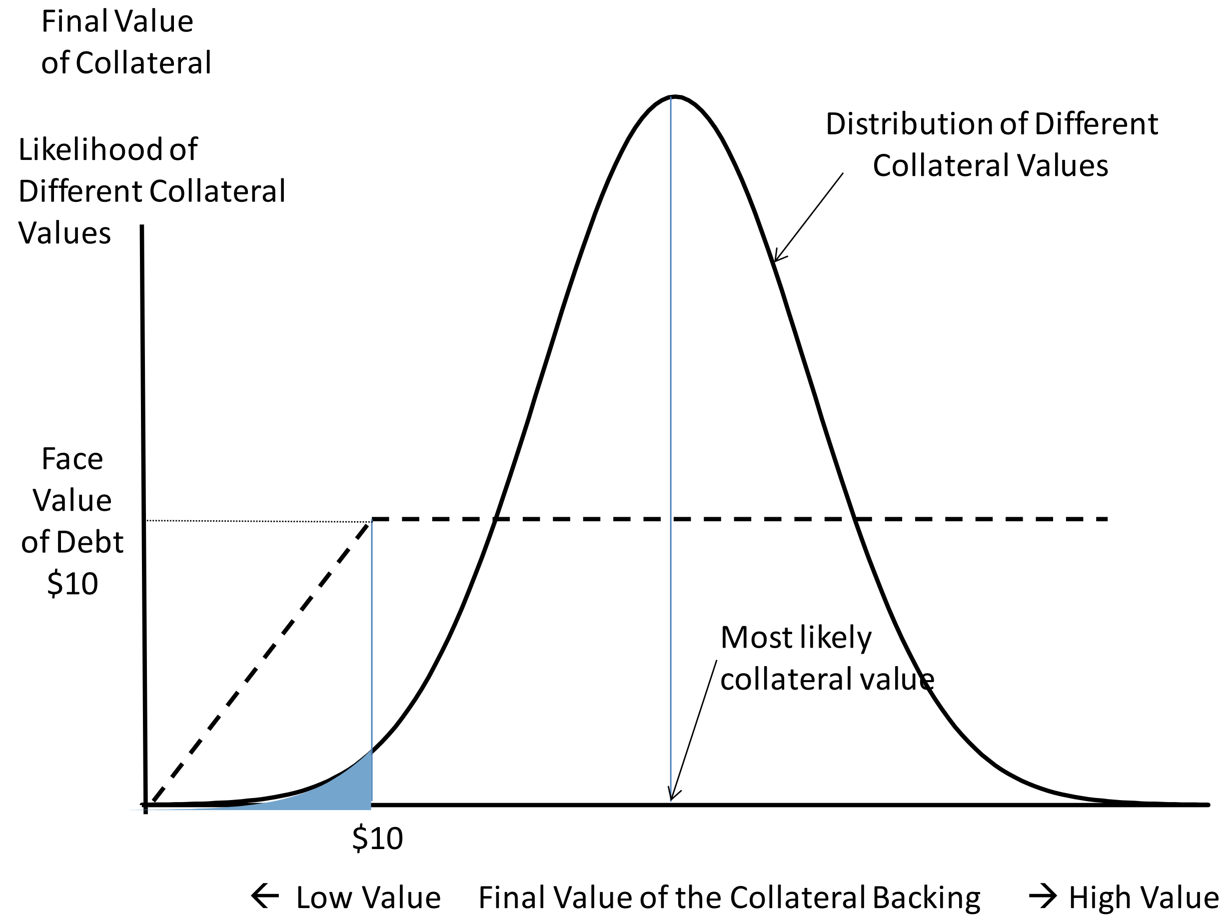
Source: Gorton and Weber.

“In the use of money, everyone is a trader; those [who] are little suited to explore the mechanism of trade are obliged to make use of money, and are no way qualified to ascertain the solidity of different banks whose paper is in circulation; accordingly we find that . . . laborers, and mechanics of all descriptions, are often severe sufferers by the failure of country banks . . . “ Ricardo (1876, p. 409)

Intuition for Dang, Gorton, Holmström (2015)

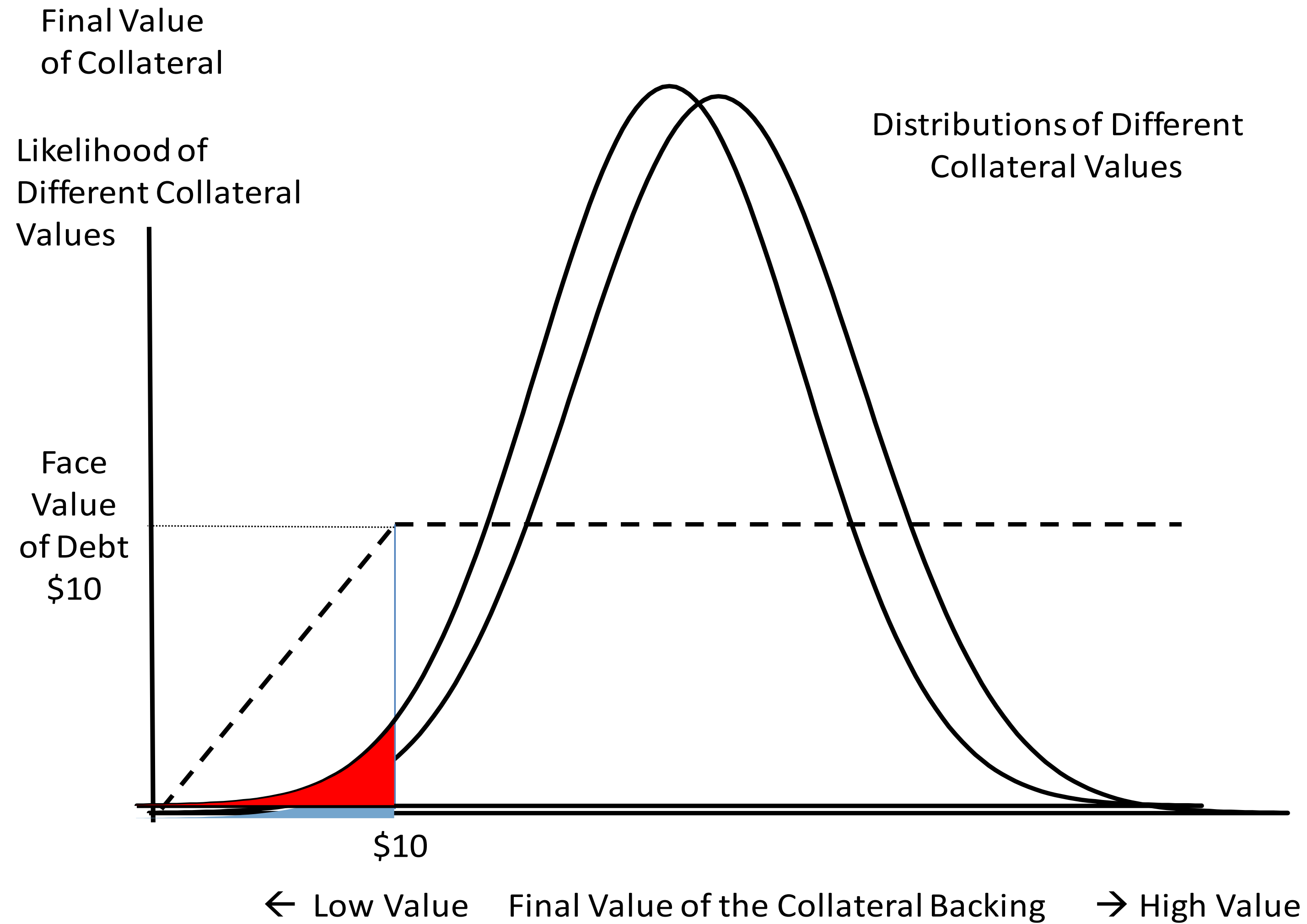


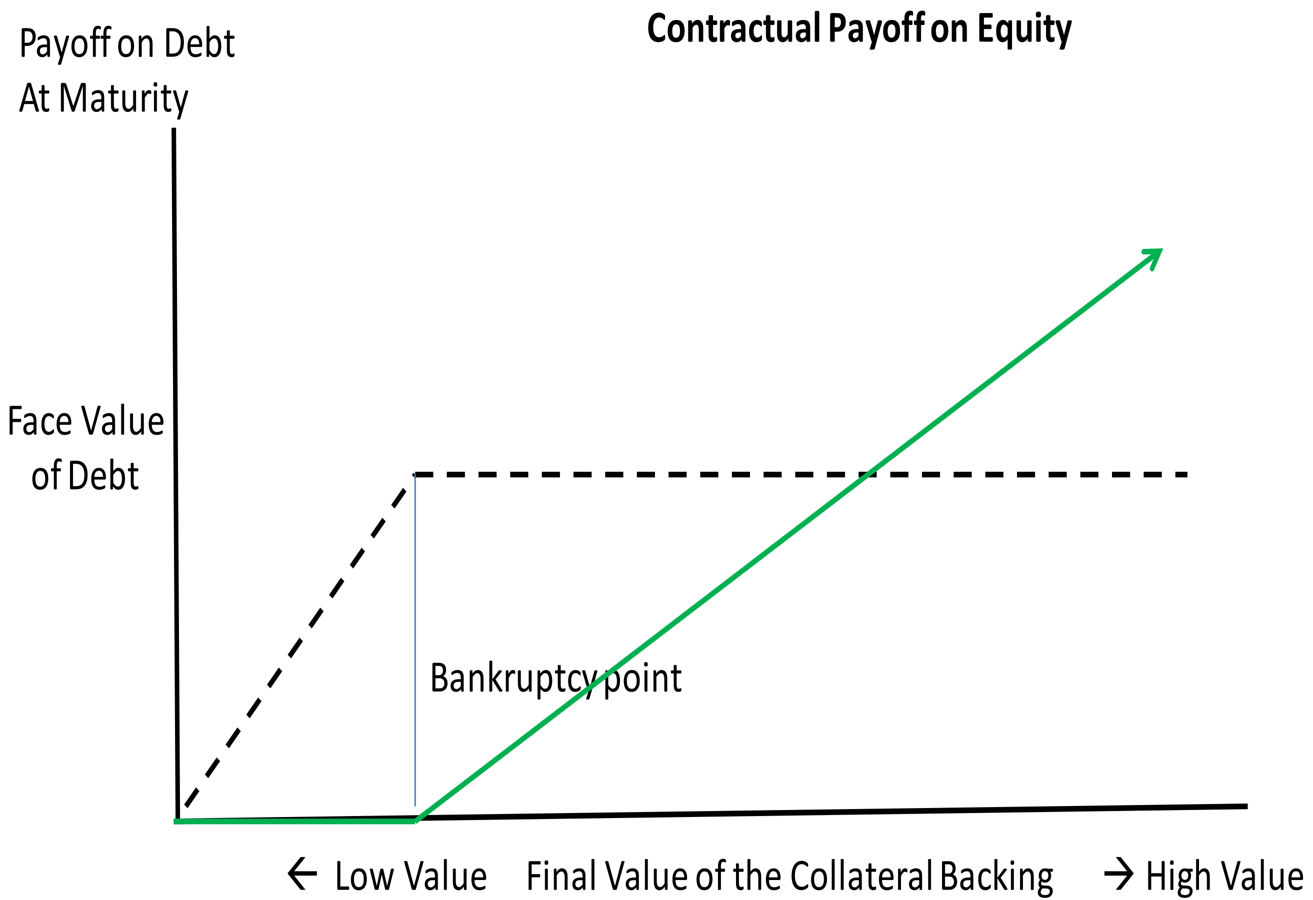

Distribution of Different
Collateral Values
Likelihood of
Different Final
Collateral
Values
Most likely
collateral value
← Low Value
Final Value of the Collateral Backing
→ High Value



Final Value
of Collateral
Likelihood of
Different Collateral
Values
Distribution of Different
Collateral Values
Face
Value
of Debt
$10
Most likely
collateral value
$10
← Low Value
Final Value of the Collateral Backing
→ High Value

A Financial Crisis: Loss of Confidence




Contractual Payoff on Equity
Payoff on Debt
At Maturity
Face Value
of Debt
Bankruptcy point
← Low Value
Final Value of the Collateral Backing
→ High Value

Debt and Info

- Cut cash flows by seniority—
- →cuts information!
- That’s the point of debt.

Two different systems

Stock markets

- risk sharing

- Price discovery
- Transparent
- Information sensitive
- Exchange trading
- Volatile volume

Expensive, risky liquidity

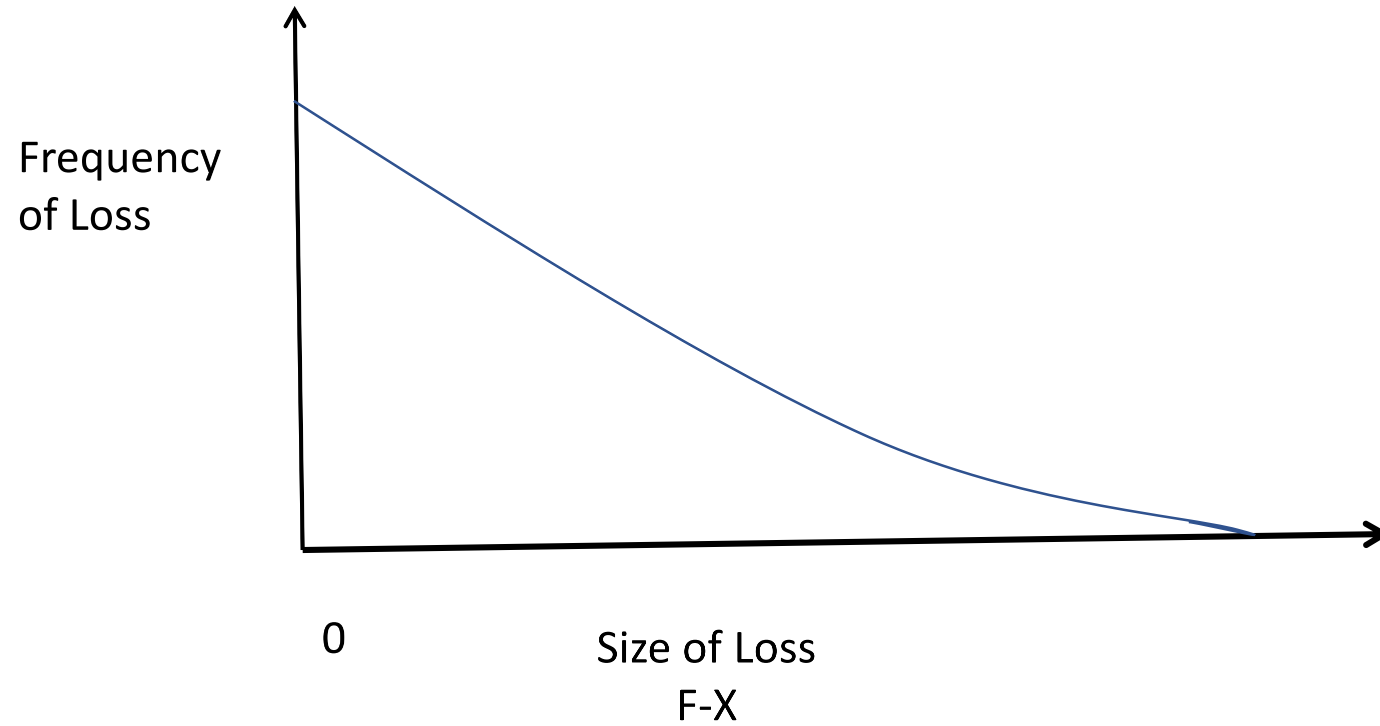
Money markets

- liquidity provision

- No price discovery
- Opaque
- Information insensitive
- Bilateral trading
- Constant volume

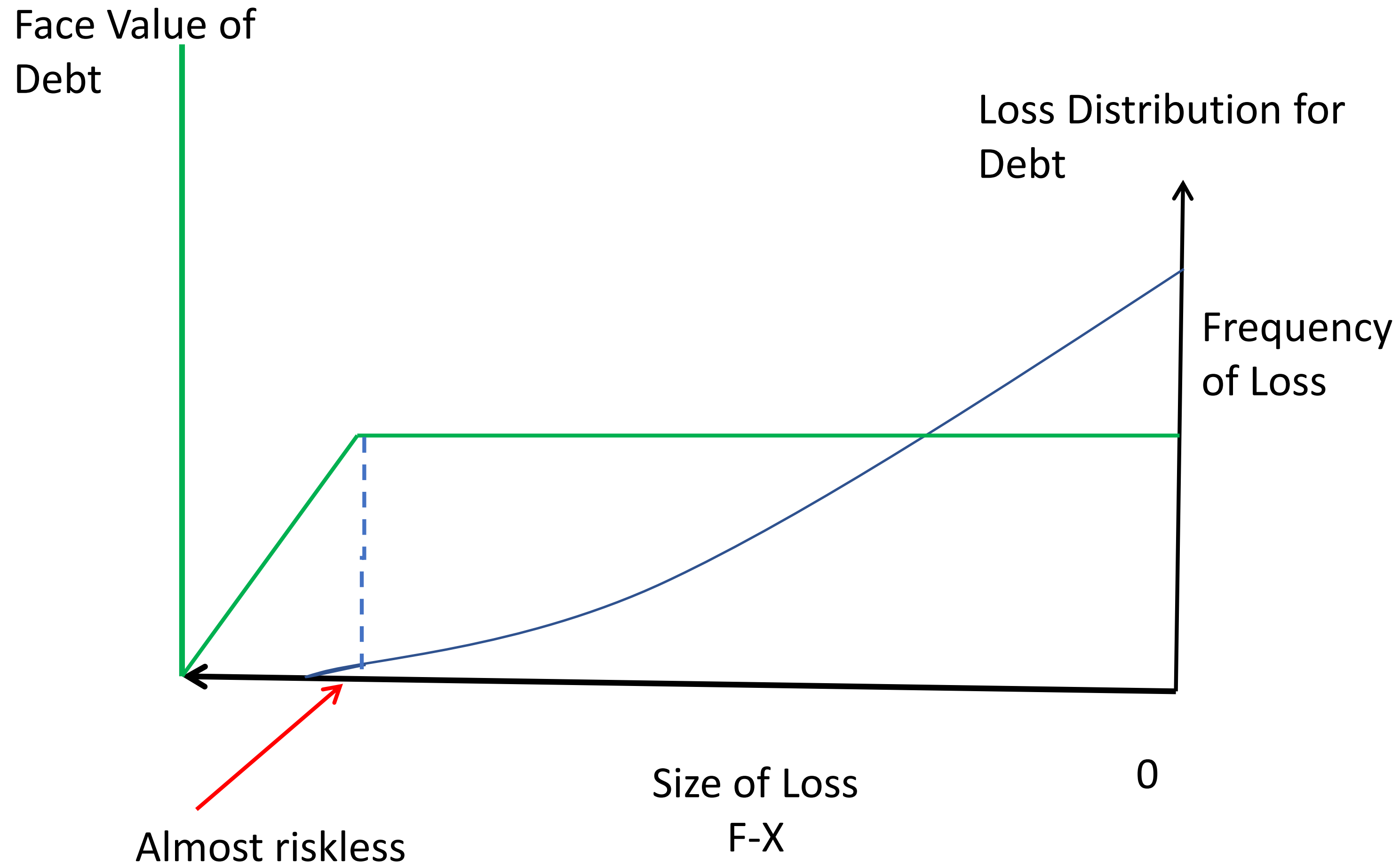
Cheap, stable liquidity

Loss Distribution for Debt



Frequency
of Loss
Size of Loss
F-X
0

Maximal Info-Insensitivity: Debt-on-Debt



Implications: Bank Secrecy

- Banks are surrounded by secrecy (Dang, Gorton, Holmström, Ordoñez (2017)).
  - High cost to produce info.
  - Bank assets hard to value, e.g., home mortgages , small business loans.
- ABS/MBS opaque.

Regulation

- Two approaches:
  - Require high-quality collateral (don’t worry about the short-term debt).
  - Insure the short-term debt (don’t worry about the collateral).

Collateral

- UK Peel's Act 1844: back (most) BoE notes backed with gold.
- US free bank notes (1837-1863): had to be backed by state bonds
  - State bonds risky; still had panics
- US national bank notes (1863-1914): backed by U.S. Treasuries
  - Under-issuance of national bank notes; deposits grew; panics now with respect to deposits
- BIS Liquidity Coverage Ratio

- Basic problem: Uses up long-term safe debt.

Insurance

- NY Safety Fund (1829): Collapsed in the Panic of 1837.
- Five other states adopted insurance prior to the Civil War. Not successful.
- Following the Panic of 1907, eight states adopted insurance, but all eventually collapsed.
- In the U.S. insurance from the Banking Act of 1933 was successful----but form of banks and short-term debt changed.

Insurance

- Since WWII many countries have adopted deposit insurance.
- Results from panel data: insurance increases the probability of crisis.

- But these results depend on the “events method” for dating crises.
- Boyd et al using different dating find that the prob of crisis is not predicted by the presence of insurance.

Charter value and Entry Restrictions

- Charter value is essential for banks to not exit banking.
- Charter value creates an incentive for banks to follow the rules.

- Charter value created by:
  - Entry into banking limited; and nonbanks legally prevented from issuing short-term debt.

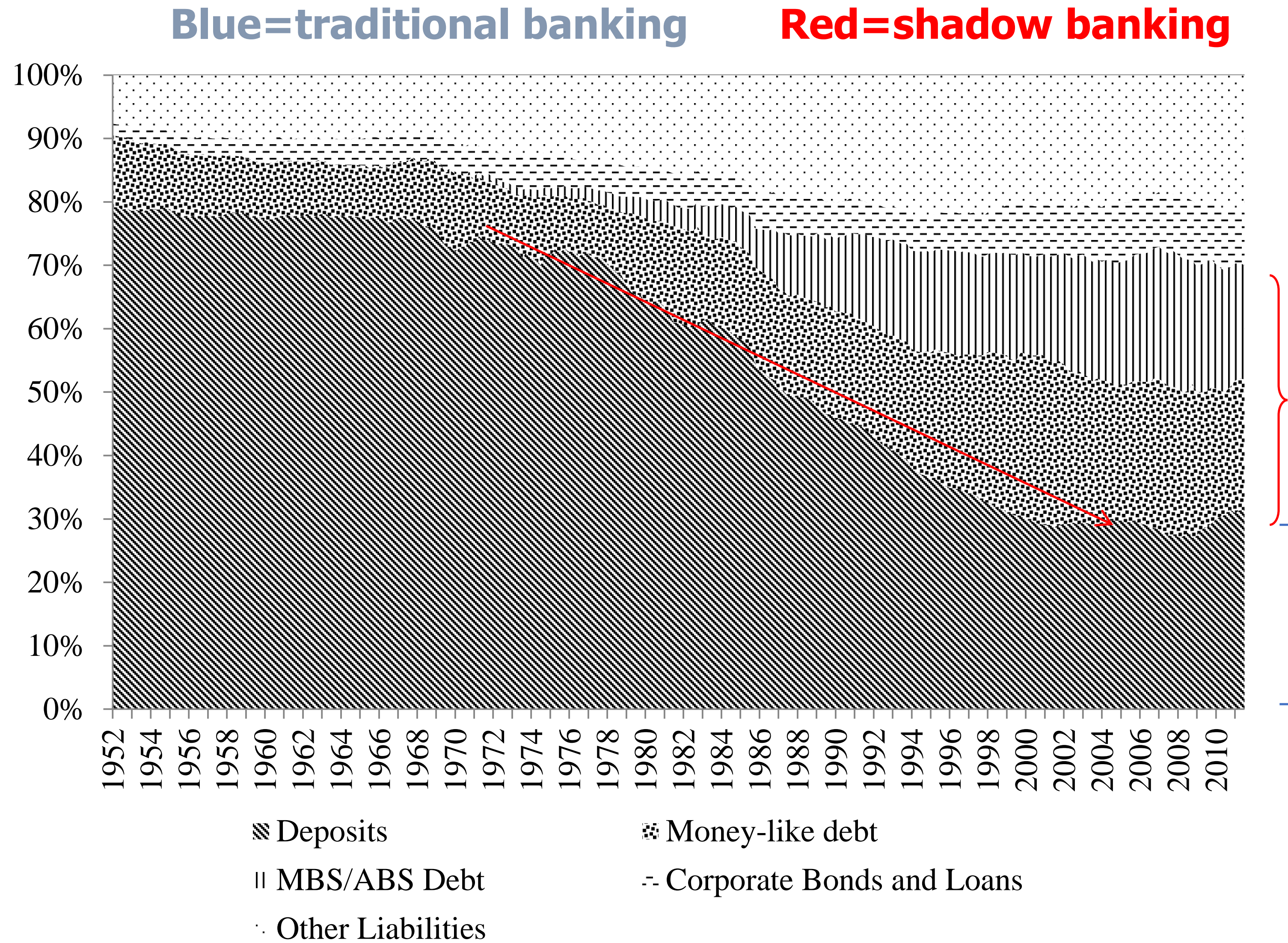
- Entry restrictions create charter value, the PV of monopoly rents.

Demand Deposits not Understood

- Bray Hammond (1957), in his Pulitzer Prize-winning book Banks and Politics in America, wrote: “. . . the importance of deposits was not realized by most American economists . . . till after 1900” (p. 80).

Privately-Produced Safe Debt as % of Total Privately-Produced Safe Debt

Shadow Banking Not identified

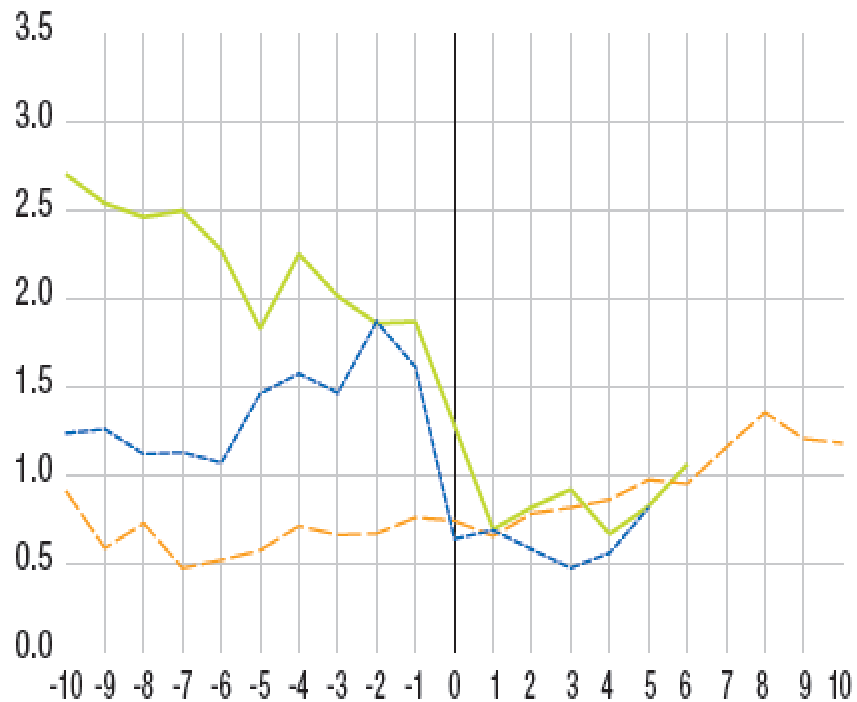


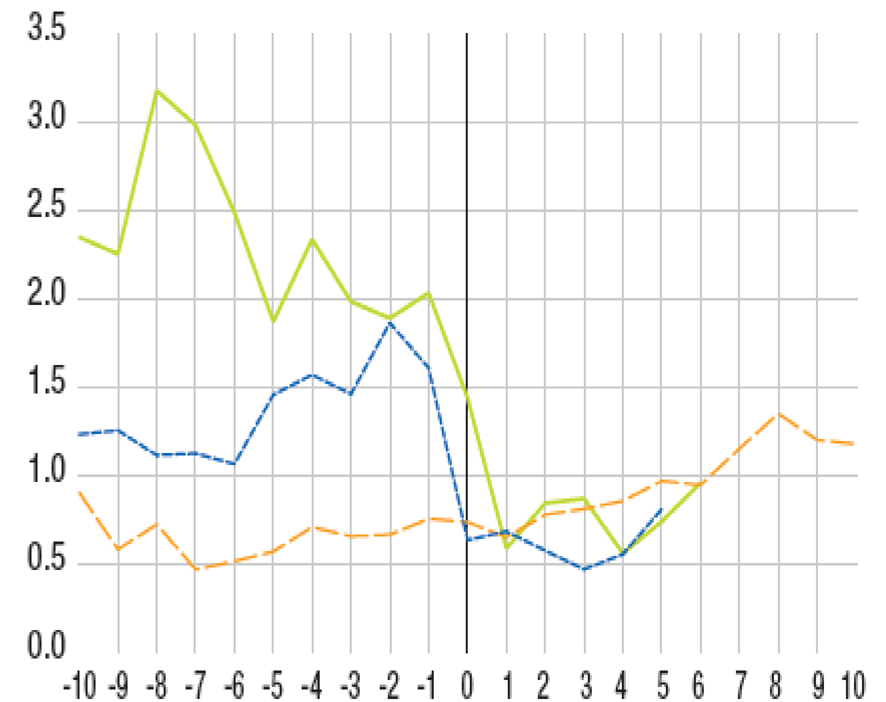
Gorton, Lewellen, Metrick (2012)

How is bank charter value doing?

C2 Evolution of Q-ratios – Ten years prior to and after the crisis

(X axis: time from crisis; Y axis: Q-ratio)





United States, 2007 crisis — Euro, 2008 crisis — Advanced crisis

This is a snapshot of the top 10 lenders in 2011 and in 2016. Overall, the top three big banks (JPMorgan Chase, Bank of America and Wells Fargo) went from providing nearly 50 percent of all new loans in 2011 to about 21 percent of all new loans in 2016. Also in 2016, six of the top 10 lenders were non-banks. The share of non-bank loans among the top 10 lenders went from 10.9 percent in 2011 to 17.11 percent in 2016.

2011 market share

Wells Fargo	24.20%
Bank of America	10.58%
JPMorgan Chase	9.95%
U.S. Bank Home Mortgage	4.38%
Citigroup	4.29%
Ally-GMAC	**3.81%**
PHH Mortgage	**3.51%**
Quicken Loans	**2.03%**
Flagstar Bancorp	1.80%
MetLife	**1.60%**

2016 market share

Wells Fargo	12.55%
JPMorgan Chase	5.95%
Quicken Loans	**4.90%**
U.S. Bank Home Mortgage	4.12%
Bank of America	4.07%
PennyMac Financial Services	**3.37%**
Freedom Mortgage	**2.90%**
PHH Mortgage	**2.01%**
Caliber Home Loans	**2.00%**
loanDepot	**1.89%**

Source: Mortgage Daily

iStockphoto

Nonbank Lending

- Migration of lending to nonbanks is revealed preference that regulation is constraining/costly.

- Regulators can only determine where the banking system is. If regulations are reducing profits, new “banks” enter.

Final Thoughts

- History suggests that financial crises are inevitable because the system is constantly transforming, with new forms of short-term debt.

- The Panic of 2007-2008 showed how the system can morph. But, over a longer time horizon than we usually consider.

- Policies derived from stock markets backfire.