Banking and Financial Fragility

Introduction

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Financial Intermediation

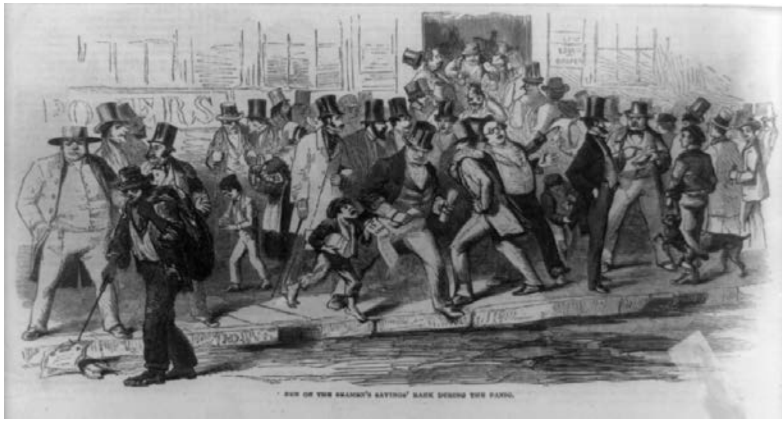
- Banks and other financial intermediaries appear to play an important role in the economy
  - commercial banks alone in the U.S. have $15 trillion in assets (plus money market mutual funds, etc.)
  - it seems important to understand the features of this activity
- In addition …

Financial Fragility

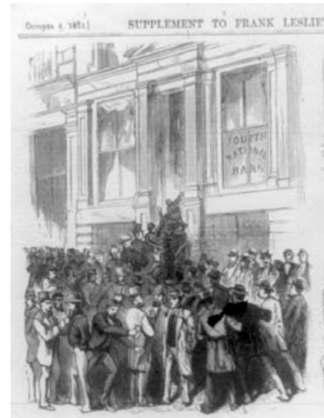
- Crisis of 2007-8 highlighted the *fragility* of the global financial system
  - a seemingly small shock (losses on US subprime mortgages)…
  - led to a major financial crisis and the near-failure of many of the world's largest financial institutions …
  - followed by a deep recession in many countries
- Much discussion has focused on the causes of the shock
  - poor lending standards, distorted incentives, lax supervision
- But the losses on subprime mortgages were not so large
  - "puzzle of disproportionate cause and effect" (Bernanke, 2012)

- This crisis was unique in its size and global reach
  - but similar events have occurred with some regularity
- Recent examples of banking/financial crises:
  - Nordic countries 1991-3
  - Mexico 1994-5
  - East Asia 1997-8
  - Argentina 2001-2
- Triggers differ, but the puzzle of disproportionate cause and effect is a common feature
- Looking further back …

Financial panics are nothing new



1857



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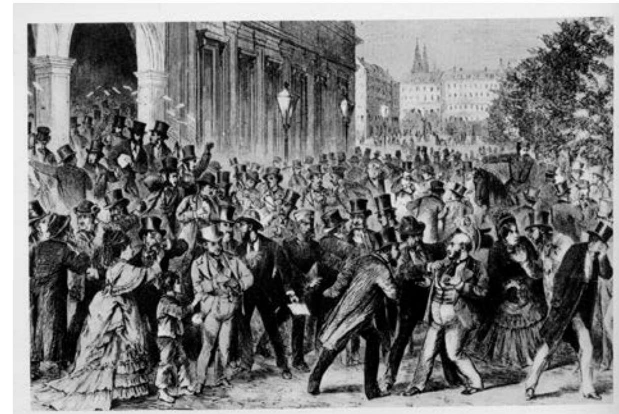
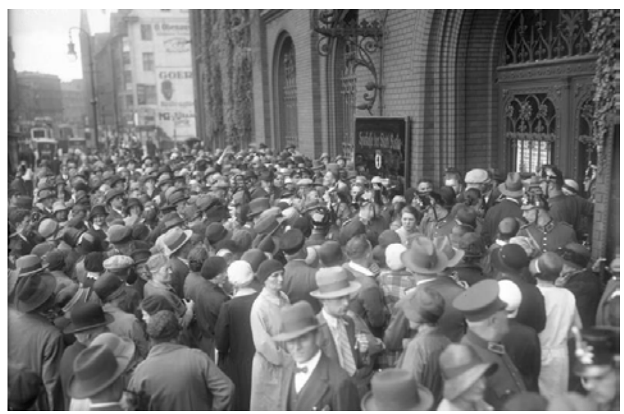


1893

1907



1931

1933

- How did a moderate event turn into a full-blown crisis?

- According to Bernanke (2012):
  - "To a significant extent, the crisis is best understood as a classic financial panic – differing in details but fundamentally similar to [historical] panics."
  - also called a 'banking panic' or 'bank run'

- Others agree:
  - "The events of 2007 are essentially a repeat of the problem of the 19th century bank runs" [but this time] "the 'bank run' was invisible to almost everyone because it was a run by banks and firms on other banks."

Gary Gorton, *Slapped by the Invisible Hand: The Panic of 2007*.

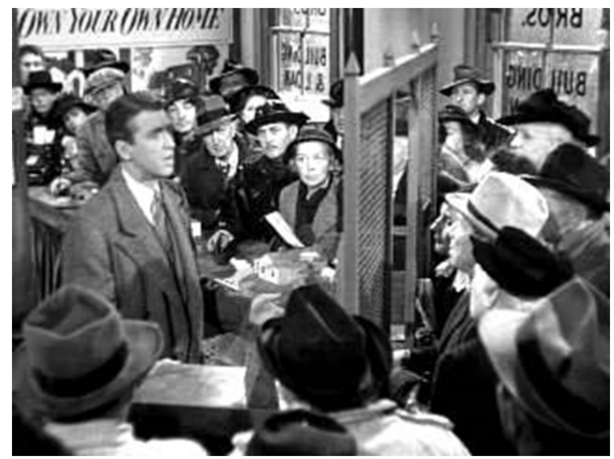
Why do panics occur?

- More from Bernanke (2012)
  - "[A] panic is possible in any situation in which longer-term, illiquid assets are financed by shorter-term, liquid liabilities …
  - … and in which providers of short-term funding either lose confidence in the borrower or become worried that other short-term lenders will lose confidence."
- Easiest way to see what this means:
  - think about a 'classic' (historical) run on a bank

The basic problem

- A (simple, old-fashioned) bank collects deposits
  - consumers can withdraw these deposits on demand
- Lends the money to businesses, home buyers
  - borrowers are not able to repay on short notice
- If many depositors ask for their money bank at once
  - … the bank cannot meet its obligations, fails

⇒ The loss of confidence is rational (i.e., self-fulfilling)



Jimmy Stewart in “It’s a Wonderful Life”

- Loss of confidence could be triggered by many things
  - losses on bank's investments, suspicion of fraud, etc.
- But the panic substantially amplifies the triggers

  "I believed then and I believe now that the severity of the panic itself – as much or more so than … subprime mortgage lending and the house price bubble – was responsible for the enormous financial and economic costs of the crisis.

  Ben Bernanke, *The Courage to Act* (2015)

- Standard policy response: Deposit insurance
  - together with close regulation/supervision
- However …

Shadow Banking

- Much modern "banking" takes place outside of regulated commercial banks
- Examples:
  - money market mutual funds, investment banking, repurchase agreements, asset-backed commercial paper and many more (see Yorulmazer, 2014)
- In each case, short-term borrowing is used to finance longer-term assets
- Each experienced significant disruption during the crisis
  - "[T]he emergence of run-like phenomena in a variety of contexts helps explain the remarkably sharp and sudden intensification of the financial crisis [and] its rapid global spread" (Bernanke, 2012)

What should policy makers do?

- While it is easy to see the basic problem, determining the right solution is very difficult
  - many proposals have been put forward
  - how should we choose which ones to adopt?

Examples:

- Should we prohibit maturity transformation?
  - could require maturity of liabilities = maturity of assets
  - to make 5-year loan, banks could issue 5-year certificates of deposit
  - and 100% reserve requirement on demandable deposits

- Does suspending depositors' ability to withdraw in times of crisis help prevent panics?
  - or does it fuel them?
- Should the government provide more guarantees (extended deposit insurance)?
  - to money market mutual funds, repurchase agreements
  - or fewer?
- Should the government announce explicit rules for how it will deal with a future crisis?
  - or maintain flexibility to react as events unfold?
- What should a central bank do during a panic?

- Answering these questions requires a *model*
  - a systematic way of studying how banks and investors respond to incentives and policy
- Want a framework that helps us understand:
  - why banks operate the way they do
  - why financial panics spread so quickly
  - the costs/benefits of different policy reforms
- Bernanke (2012):
  - "The classic theoretical analysis of 'pure' banking panics is in Diamond and Dybvig (JPE, 1983)"

Plan for these lectures

- Study these issues through the lens of the Diamond-Dybvig model
  - focus is on *fragility* rather than specific triggers
  - want to understand what makes a financial system more/less vulnerable to a panic
- Start with a baseline version of the Diamond-Dybvig model
  - see references at end of each lecture for specific readings
  - the Allen and Gale book is particularly useful
    - but the approach and notation here will differ from theirs

References and further reading

Franklin Allen and Douglas Gale (2007) *Understanding Financial Crises*, Oxford University Press.

- see especially Chapters 1 and 2 for background

Bernake, Ben S. (2012) "Some Reflections on the Crisis and the Policy Response."

Bernanke, Ben S. (2015), *The Courage to Act*, Norton.

Brunnermeier, Markus (2009) "Deciphering the Liquidity and Credit Crunch 2007-8," *Journal of Economic Perspectives* 23:77-100.

Diamond, Douglas W. and Phillip H. Dybvig (1983) "Bank Runs, Deposit Insurance, and Liquidity," *Journal of Political Economy* 91: 401-419.

Gorton, Gary B. (2010) *Slapped by the Invisible Hand: The Panic of 2007*, Oxford University Press.

Yorulmazer, Tanju (2014) "Case Studies on Disruptions During the Crisis," Federal Reserve Bank of New York *Economic Policy Review*, 20, 17-28.