Financial Crises

This lecture begins by examining the features of a financial crisis. It then describes the causes and consequences of the 2008 financial crisis and the resulting changes in financial regulations.

A financial crisis is a major disruption in which financial markets cease to provide an efficient flow of funds from savers to productive investment opportunities. As a result, investment craters, which causes output to decline significantly.

Stages of a Financial Crisis

A. Stage 1: The initial phase

    1. Credit boom and bust

        a. A credit boom occurs when financial institutions go on a lending spree.

b. Financial innovation and/or financial liberalization (the elimination of restrictions on financial markets) can cause financial firms to go on a credit boom because they cannot or do not appropriately assess the risk.

c. Eventually, loan losses rise, which reduces a bank's equity and its leverage ratio. To raise its leverage ratio, the bank cuts back on its lending (i.e., deleveraging).

2. Asset-price boom and bust

a. Credit booms can fuel a rise in asset prices above their economic fundamentals (i.e., an asset-price bubble).

b. When an asset-price bubble bursts, the value of collateral that companies can pledge falls, so financial institutions are less likely to lend to them.

c. An asset-price bust also reduces the value of a bank's assets, which incentivizes the bank to deleverage.

3. A financial crisis usually begins during a period of high uncertainty like just after an asset-price bust or immediately after a failure of a major financial institution.

B. Stage 2: Banking crisis

1. Deteriorating balance sheets and a weaker economy push some financial institutions into insolvency.
2. If these effects impact enough financial institutions, a bank panic can occur because depositors cannot determine which banks are strong and which are near insolvency.
3. A bank panic leads to a large withdrawal of deposits, which forces banks to sell off assets quickly. A fire sale of assets can cause asset prices to decline so much that it could push more banks into insolvency.

C. Stage 3: Debt deflation

1. If the decline in output is strong enough to push down the price level, an economic recovery can be interrupted.
2. The resulting deflation also increases the real value of a bank's liabilities (most debt contracts are in nominal terms), which causes a bank's equity position to further erode and raises the probability the bank will become insolvent.

The Great Depression

A. The stock market crash of 1929

1. In 1928 and 1929, stock prices doubled. The Fed believed excessive speculation was driving the stock market higher, so they tightened monetary policy to stop it.
2. In October 1929, the stock market crashed and fell by 40% by the end of 1929.

B. Bank Panic

1. By the middle of 1930, stock prices had recovered around half of their losses and credit markets had stabilized.
2. A severe drought in the Midwest, however, caused farmers to default on their loans, which led to large losses on bank balance sheets in farming communities.

C. Continuing decline in stock prices

1. By mid-1932, stock prices had fallen to around 10% of their peak value in 1929.
2. Economic uncertainty was high and the remaining banks were not interested in taking on additional loans.
3. Funding productive investment opportunities was extremely difficult. As a result, investment declined by 90% from 1929 to 1933.
4. Making matters even worse, lenders raised their interest rates to protect themselves against the higher perceived default risk, which further depressed economic activity.

D. The large decline in output pushed down the price level by 25%, which kept the economy from entering a recovery.

E. Overall, the Great Depression was the worst financial crisis ever experienced in the United States.

The Financial Crisis of 2008

A. Causes of the financial crisis

1. Financial innovation

    a. The development of the subprime mortgage market started a credit boom.

    b. Structured credit products like collateralized debt obligations (CDOs) were developed to have particular risk characteristics that appealed to investors with different risk preferences. CDOs are very complicated and hard to value.

2. Agency problems in mortgage markets

    a. Mortgage brokers, who originate loans, did not make much effort to evaluate the quality of the borrower because the loans were going to be quickly sold off.

b. Real estate speculators lined up to borrow funds because they would make a lot of money if housing prices went up and could "walk away" if they declined.

c. Commercial and investment banks were earning fees underwriting MBSs and CDOs and had little incentive to evaluate whether those securities would ultimately be paid off.

d. The development of credit default swaps (insurance to protect bond holders in case of default) resulted in many insurance companies like AIG writing risky policies.

3. Credit-rating agencies, who rate the quality of debt securities, were also advising companies how to structure financial instruments like CDOs, which compromised their incentives to accurately assess the risk of certain securities.

B. Effects of the financial crisis

1. Residential housing prices: Boom and bust

    a. The subprime mortgage market took off after the 2001 recession and was encouraged by politicians.

    b. Housing prices also started to rise after the 2001 recession.

    c. Rising housing prices meant subprime borrowers were less likely to default, which encouraged more subprime lending.

    d. As the amount of subprime lending increased, it pushed housing prices up even further.

e. Low interest rates also pushed housing prices higher.
    i. Huge capital inflows from China and India pushed interest rates down.
    ii. Legislation helped lower rates by encouraging Fannie Mae and Freddie Mac to purchase MBSs.
    iii. The Federal Reserve kept interest rates relatively low to stimulate economic growth.
f. As housing prices rose, underwriting standards fell, which enabled high-risk borrowers to obtain mortgages.
g. In 2006, housing prices peaked and then began to fall.
h. Housing prices fell enough that some homeowners had a mortgage that was greater than their home's value.
i. Those "underwater" homeowners had a strong incentive to default on their mortgage and many did.

2. Deterioration of financial institutions' balance sheets
    a. The rising defaults substantially reduced the values of MBSs and CDOs.
    b. Those lower values reduced the assets and equity of financial firms, which encouraged them to deleverage by selling off assets and by restricting lending.
3. The impact on the shadow banking system
    a. Investment banks, hedge funds, and other nonbank financial firms purchased MBSs with short-term lending using the MBSs as collateral.
    b. When defaults started rising, lenders started requiring more collateral for short-term loans, so firms in the shadow banking system were forced to sell assets including MBSs, which further lowered their prices.

4. The failure of high-profile firms
    a. In March 2008, Bear Sterns, which was invested heavily in subprime-related securities, lost much of its short-term funding and was forced to sell to J.P. Morgan.
    b. In July 2008, the U.S. Treasury and the Fed propped up Fannie Mae and Freddie Mac after they incurred substantial losses from insuring over $5 trillion of mortgages or mortgage-backed assets.
    c. On September 15, 2008, Lehman Brothers filed for bankruptcy after suffering losses in the subprime market.
    d. The next day, AIG suffered an extreme liquidity crisis from losses related to over $400 billion in credit default swaps. To prevent bankruptcy, the Fed provided AIG with an $85 billion loan.

5. The financial crisis peaked in September 2008
    a. The risk premium on bonds spiked and consumer and investment spending crashed.
    b. GDP fell by 1.3% in 2008Q3, 5.4% in 2008Q4, and 6.4% in 2009Q1, while the unemployment rate peaked over 10% in late 2009.
    c. The government responded in the following ways:
        i. The Fed took extraordinary actions to provide liquidity including lowering the federal funds rate to zero, implementing a large scale asset purchasing program (QE), and developing new lending programs that extended beyond commercial banks.

ii. The fiscal authorities passed the Troubled Asset Relief Program (TARP) which 1) authorized the U.S. Treasury to spend up to $700 billion bailing out financial institutions; 2) raised FDIC insurance from $100,000 to $250,000; and 3) allowed the Fed to pay interest on required and excess reserves.

iii. Congress passed the Bush Administration's $78 billion stimulus in 2008, and then passed the Obama Administration's $787 billion stimulus in 2009.

d. All of these actions strengthened financial markets and helped the economy start to recovery, but the pace of the recovery was slow.

Response of Financial Regulation

A. Microprudential vs macroprudential supervision

1. Microprudential supervision examines the safety and soundness of individual financial institutions.
2. Macroprudential supervision examines the safety and soundness of the whole financial system.
3. Future financial regulation is focused on macroprudential policies such as requiring banks to tighten lending procedures and raise capital requirements during an expansion to prevent an asset-price bubble from forming.

B. Dodd-Frank Act of 2010

1. This legislation establishes the Consumer Financial Protection Bureau. This agency examines and enforces regulations on all firms issuing residential mortgages, as well as, any other financial products marketed to low-income people.
2. The resolution authority provided by Dodd-Frank gives the U.S. government the authority to rescue any failing financial firm whose failure could pose a risk to the overall financial system.
3. Dodd-Frank created the Financial Stability Oversight Council, which monitors the financial market for asset bubbles and the buildup of systemic risk.
4. The Volcker Rule established by this legislation says banks are allowed to invest 3% of their equity into hedge funds and private equity funds.

5. The bill requires that derivatives are traded on exchanges and cleared through clearinghouses.

"Too Big To Fail" and Future Regulation

A. Three approaches to solving the "too big to fail" problem:

   1. Break up large systemically important financial firms.

      a. Force the big financial firms to break up by reimposing the separation of commercial and investment banking.

      b. Impose regulations that no financial institution can have assets over a specified amount, which would also force big financial institutions to break up.

   2. Impose higher capital requirements on the "too big to fail" firms, so they have less incentive to take on too much risk.

   3. No additional legislation is needed because Dodd-Frank takes care of the "too big to fail" problem.

B. Other issues for future regulation

1. Modify compensation rules for executives and traders at financial institutions to reduce risk taking.
2. Dodd-Frank does not deal with the systemic risk imposed to the financial system by government-sponsored enterprises such as Fannie Mae and Freddie Mac.
3. More regulation of credit-rating agencies is needed.
4. The efficient allocation of funds from savers to productive investment opportunities can be hampered if the regulations are poorly designed or too burdensome.