

Topic-3: Fiscal & Monetary Policy,

◦ Reference: Frederic S. Mishkin,
Macroeconomics Policy and Practice,
Chapter-15 Financial Crises and The
Economy

Lecture Notes

INTERMEDIATE MACROECONOMICS-II

B.A.(H) Economics, Semester-IV

SHRI RAM COLLEGE OF COMMERCE

Financial crises

- Financial crises refer to major disruptions in financial markets characterized by a sharp declines in asset prices and firm failures e.g. as witnessed during the 2008 financial crisis.
- Financial crises are a major source of economic fluctuations.

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- During August 2007, defaults in the mortgage market by subprime borrowers created panic, leading to the worst U.S. financial crisis.
 - Borrowers had to pay higher rates on their borrowings, and it became difficult to obtain credit. World stock markets crashed, with U.S. firms' shares falling to half from their peak values.
 - The recession that began in December 2007 worsened by the fall of 2008, leading to steep declines in economic activity.

Asymmetric Information and Financial Crises

- Asymmetric information, creates two basic types of problems in the financial system:
 - (1) **Adverse selection**, in which lenders must select from a pool of bad (adverse) credit risks.
 - (2) **Moral hazard**, when there is the risk (hazard) that the borrower will engage in activities that are undesirable (immoral) from the point of view of the lender.
- The analysis of how asymmetric information problems can generate an adverse selection and moral hazard problems referred to as **agency theory**.

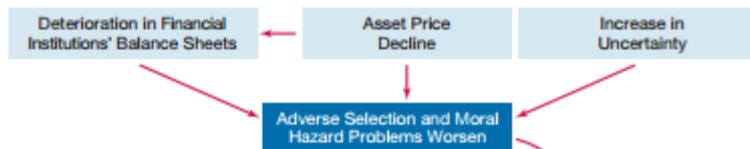
- A financial crisis occurs when an increase in asymmetric information from a disruption in the financial system prevents it from channeling funds efficiently.
- Financial crises in advanced economies have progressed in two and sometimes **three stages**:
 - (1) Initiation of Financial Crisis.**
 - (2) Banking Crisis.**
 - (3) Debt Deflation.**
- The figure on the next slide traces the stages and sequence of financial crises in industrialized economies

FIGURE 15.1

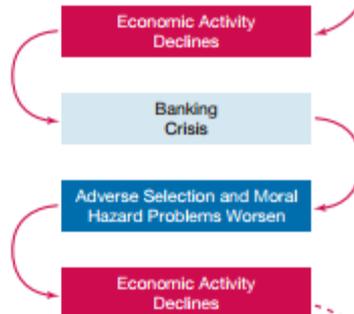
Sequence of Events in Financial Crises in Advanced Economies

The solid arrows trace the sequence of events during a typical financial crisis; the dotted arrows show the additional set of events that occur if the crisis develops into a debt deflation. The sections separated by the dashed horizontal lines, show the different stages of a financial crisis.

STAGE ONE Initiation of Financial Crisis



STAGE TWO Banking Crisis



STAGE THREE Debt Deflation



■ Factors Causing Financial Crises ■ Consequences of Changes in Factors

Stage One: Initiation of Financial Crisis

- Financial crises can start in different ways: mismanagement of financial liberalization/innovation, asset-price booms, and busts, or a general increase in uncertainty caused by failures of major financial institutions.
- **Mismanagement of financial innovation/liberalization:**
When an economy introduces new types of loans or other financial products in the system, this refers to as **financial innovation**.
- And when countries eliminate various restrictions on financial markets and institutions, this refers to as **financial liberalization**.
- In the long run, financial liberalization promotes financial development and encourages a well-run financial system that allocates capital efficiently.

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- But in the short run, financial liberalization can prompt financial institutions to go on a lending spree, referred to as credit boom.
 - Given the newly innovated products, lenders may not have the expertise, or the incentives, to manage risk appropriately in these new lines of business.
 - Credit booms lead to inefficient screening and monitoring associated with credit risks which leads to overly risky lending.
 - Government safety nets such as deposit insurance increase the moral hazard incentive for banks to take on greater risk.
 - Without proper monitoring, risk-taking both by lenders and borrowers grow unchecked.

- This leads to losses on loans, NPAs begin to mount and the value of the loans falls relative to liabilities, which drives down the net worth of the financial institutions.
- With less capital, these financial institutions cut back on their lending to borrower-spenders, a process called **deleveraging**. In this situation, potential lenders pull out their funds from these institutions.
- Fewer funds lead to fewer loans to fund productive investments and a credit freeze: the lending boom then turns into a lending crash.
- As loans become scarce, borrower-spenders are no longer able to fund their productive investment opportunities: they decrease their spending.
- Thus autonomous consumption expenditure and investment decline so that aggregate demand, $C + I + G + NX$, falls causing economic activity to contract.

Asset-price boom and bust

- **Fundamental economic values** of an asset refers to as the values based on realistic expectations of the assets' future income streams.
- Prices of assets such as equity shares and real estate can be driven by investor psychology well above their fundamental economic values.
- The rise of asset prices above their fundamental economic values is an **asset-price bubble**, e.g. Tech stock market bubble (1990s), Housing price bubble(2007).
- Asset-price bubbles are often also driven by **credit booms**, in which the large increase in credit is used to fund purchases of assets, thereby driving up their price.
- When the bubble bursts and asset prices realign with fundamental economic values, stock, and real estate prices tumble, companies see their net worth decline, and the value of collateral they can pledge drops.
- As a result, financial institutions tighten lending standards for borrower-spenders and lending contracts.

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- The asset-price bust also causes a decline in the value of financial institutions' assets, thereby causing a decline in their net worth, which causes them to deleverage, steepening the decline in aggregate demand and economic activity.



- **Increase in Uncertainty**

In a period of high uncertainty, it becomes difficult to collect information. Therefore, adverse selection and moral hazard problems increase, reducing lending and economic activity.

- U.S. financial crises have usually begun in periods of high uncertainty, such as just after the start of a recession, a crash in the stock market, or the failure of a major financial institution.
- For example crises began after the failure of Ohio Life Insurance and Trust Company in 1857; the Jay Cooke and Company in 1873; Grant and Ward in 1884; the Knickerbocker Trust Company in 1907; the Bank of the United States in 1930; and Bear Stearns, Lehman Brothers, and AIG in 2008.

Stage Two: Banking Crisis

- As asset values fall below liabilities i.e. when net worth becomes negative, this pushes the financial institutions into insolvency. Unable to pay off depositors or other creditors, some banks go out of business.
- Under the worse situation, this can lead to a **bank panic**, in which multiple banks fail simultaneously.
- As few banks fail initially, then because of the asymmetric information, lender-savers can't find out whether their bank is a good bank or one of the insolvent ones.
- This encourages depositors (lender-savers) at bad and good banks to withdraw their money.

- As banks operate on a first-come-first-served basis, so depositors have a very strong incentive to show up at the bank first (run to the bank).
- Uncertainty about the health of the banking system, in general, can lead to runs on banks, both good and bad, which will force banks to sell off assets quickly to raise the necessary funds.
- These **fire sales** of assets may cause their prices to decline so much that the bank becomes insolvent, even if the resulting contagion can then lead to multiple bank failures and a full-fledged bank panic.
- With fewer banks operating, information about the credit-worthiness of borrower-spenders disappears.
- Increasingly severe adverse selection and moral hazard problems in financial markets deepen the financial crisis, causing declines in asset prices and the failure of firms throughout due to lack of funds.

Stage Three: Debt Deflation

- Due to a substantial unanticipated decline in the price level, which leads to a deterioration in firms' net worth because of the increased burden of indebtedness, this is referred to as **debt deflation**.
- As debt payments are contractually fixed in nominal terms, an unanticipated decline in the price level raises the value of borrowing firms' liabilities in real terms (which increases the burden of the debt) but does not raise the real value of borrowing firms' assets.
- Therefore, the borrowing firm's net worth in real terms (i.e. the difference between assets and liabilities in real terms) declines.
- This causes an increase in adverse selection and moral hazard problems facing lenders. Therefore, lending and economic activity decline for a long time.

The Mother of All Financial Crises: The Great Depression

Stock Market Crash

- In 1928 and 1929, prices doubled in the U.S. stock market which was viewed as happening due to excessive speculation.
- To curb this, Federal Reserve pursued an autonomous tightening of monetary policy to raise interest rates and decrease aggregate demand.
- Higher real interest rates from the Fed action caused investment to decline, while lower stock prices reduced household wealth, so that consumer spending fell. As a result, the aggregate demand fell, leading to a decline in both output and inflation, and rising unemployment.
- This led to the stock market crash in October 1929, falling by 40% by the end of 1929.

Japan's Lost Decade, 1992-2002

- The average Japanese earned 86% of the typical U.S. worker's income in 1991, up from 73% in 1981. Yet over the rest of the 1990s, Japan's GDP growth was only 1% a year.
- Japan experienced a major banking crisis in 1992. And rather than shuttering insolvent banks and providing sufficient capital to surviving financial institutions, Japan followed a path of *regulatory forbearance*.
- The government permitted insolvent banks to artificially inflate the value of their assets so as to appear sound, valuing holdings of stocks at much higher historical levels.

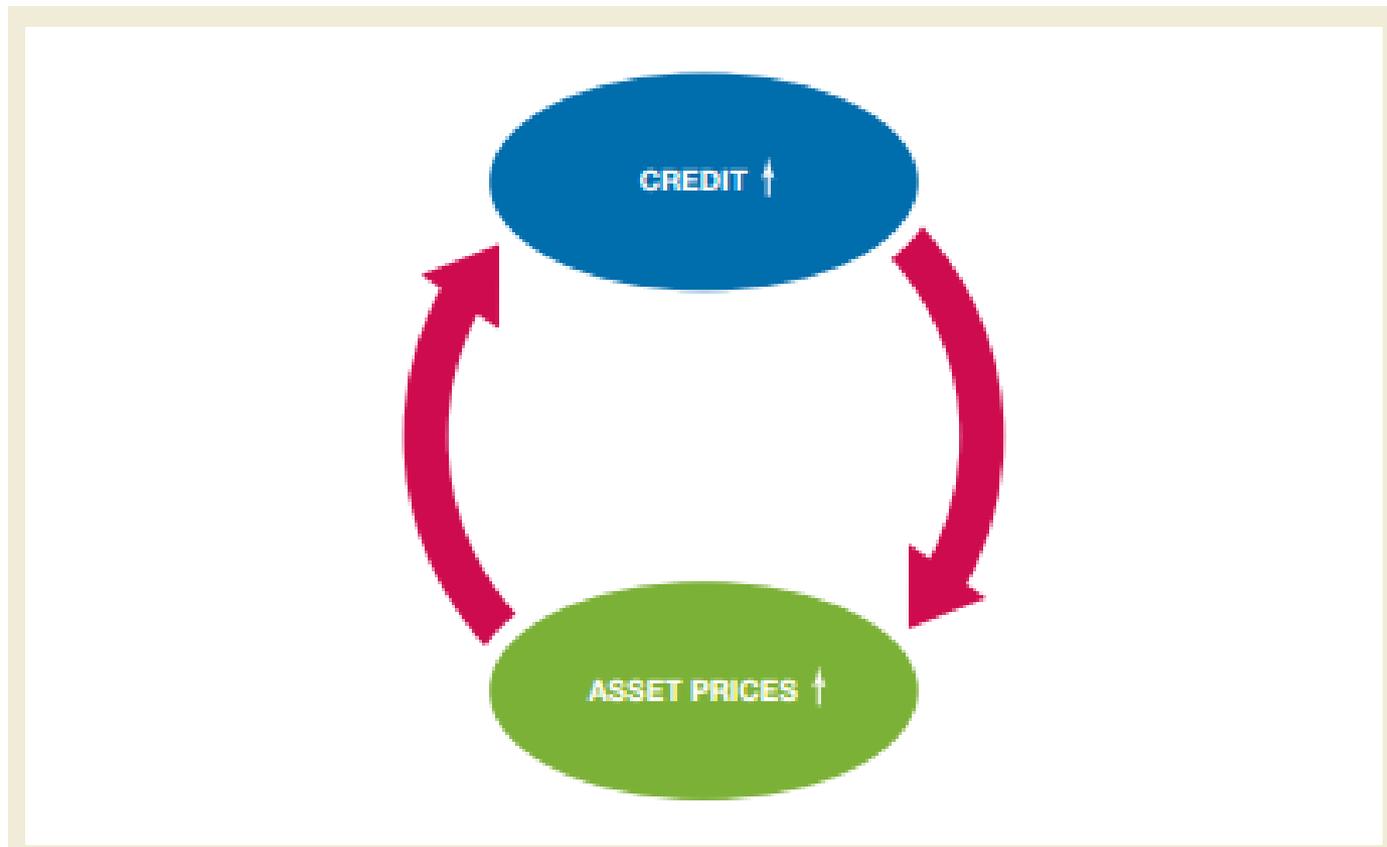
- With regulators' acquiescence, banks acted as if loans to insolvent "zombie firms" would be repaid.
- The government also allocated too little money to properly recapitalize the banking system.
- This leads the economic growth ground to a halt and inflation dropped. Deflation struck in 1995 and 1996, returning again in 1998 and lingering for several more years.
- The crisis subsided in 2003, when the Japanese government finally addressed its broken banking system.

Types of Asset price Bubble

- There are **two** types of asset-price bubbles:
1- credit-driven bubbles and
2-optimistic expectations driven bubbles
- **Credit-driven bubbles:** When a credit boom begins, this leads to an asset-price bubble because individuals and firms can use the widely available credit to purchase particular assets and thereby raise their prices.
- The rise in asset values, in turn, encourages further lending to purchase these assets. The lending for these assets then can increase demand for them further and hence raise their prices even more.
- When the bubble bursts, the collapse in asset prices then leads to a reversal of the feedback loop: loans go sour, lenders cut back on credit supply, the demand for assets declines further, and prices drop even more.
- Credit-driven bubbles are particularly dangerous.

Feedback Loop Between Asset Prices and Credit

A credit boom drives up asset prices, which in turn further fuels the credit boom, driving asset prices higher, and so on.



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- **Optimistic expectations-driven bubbles.** Bubbles that are driven solely by overly optimistic expectations pose much less risk to the financial system than credit-driven bubbles.
 - For example, the bubble in technology stocks in the late 1990s was not fueled by credit, and the bursting of the tech-stock bubble did not deteriorate financial institutions' balance sheets.
 - The bursting of the tech-stock bubble thus did not have a very severe impact on the economy and the recession that followed was quite mild.

Debate Over Central Bank Response to Bubbles

- Until 2006, the Federal Reserve took a strong position that it should not respond to asset-price bubbles.
- In the aftermath of the 2007-2009 financial crisis, both central bankers and academic economists challenged the Fed's position, leading to an active debate on what central banks should do about asset-price bubbles.
- Economists argued that when asset-price bubbles are rising rapidly at the same time that credit is booming, there is a greater likelihood that asset prices are deviating from fundamentals.
- And in this case, central bank or government officials have a greater likelihood than market participants of identifying that a bubble is in progress.

What is the best policy response?

- There are three strong arguments against using an autonomous tightening of monetary policy to pop credit-driven asset-price bubbles.
- (1) Higher real interest rates have highly uncertain effects on credit-driven asset-price bubbles. On the one hand, higher real interest rates can be ineffective in restraining the bubble when market participants continue to expect high rates of return from buying bubble-driven assets. On the other hand, if higher real interest rates succeed in bursting the bubble, it can unleash major damage on the economy, as occurred in 1929.
- (2) The blunt tool of monetary policy tends to push many asset prices lower, even when a bubble may be present in only a small fraction of assets.
- (3) To prick a bubble, real interest rates might need to rise to such a high level that the decline in aggregate demand and the resulting economic contraction would create much hardship, as jobs are lost and inflation falls below a desirable level.

Regulatory Policy Responses to Asset Bubbles

- Regulatory policy to affect what is happening in credit markets in the aggregate, referred to as **macroprudential regulation**.
- Financial regulation and supervision on an ongoing basis can prevent excessive risk-taking that can directly trigger a credit boom, which in turn leads to credit-driven asset-price bubbles.
- When a rapid rise in asset prices accompanied by a credit boom provides a signal that a bubble might be forming, central banks and other government regulators could then consider implementing policies to reign in credit growth directly or implement measures to make sure credit standards are sufficiently high.
- Appropriate macroprudential regulation can then help limit credit-driven bubbles and improve the performance of both the financial system and the economy.