Macroeconomics under Financial Crisis

Lecture 8

Financial crises

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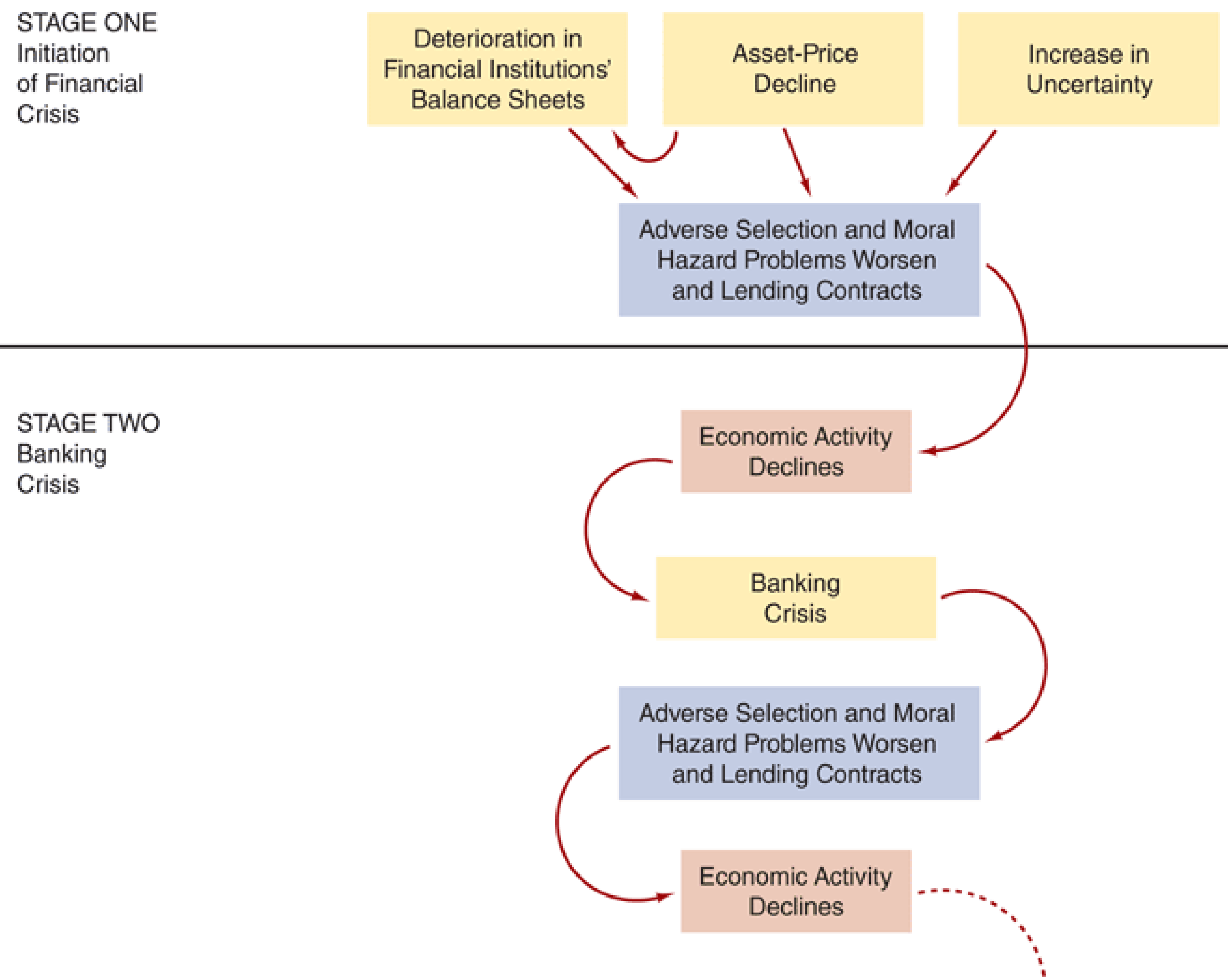
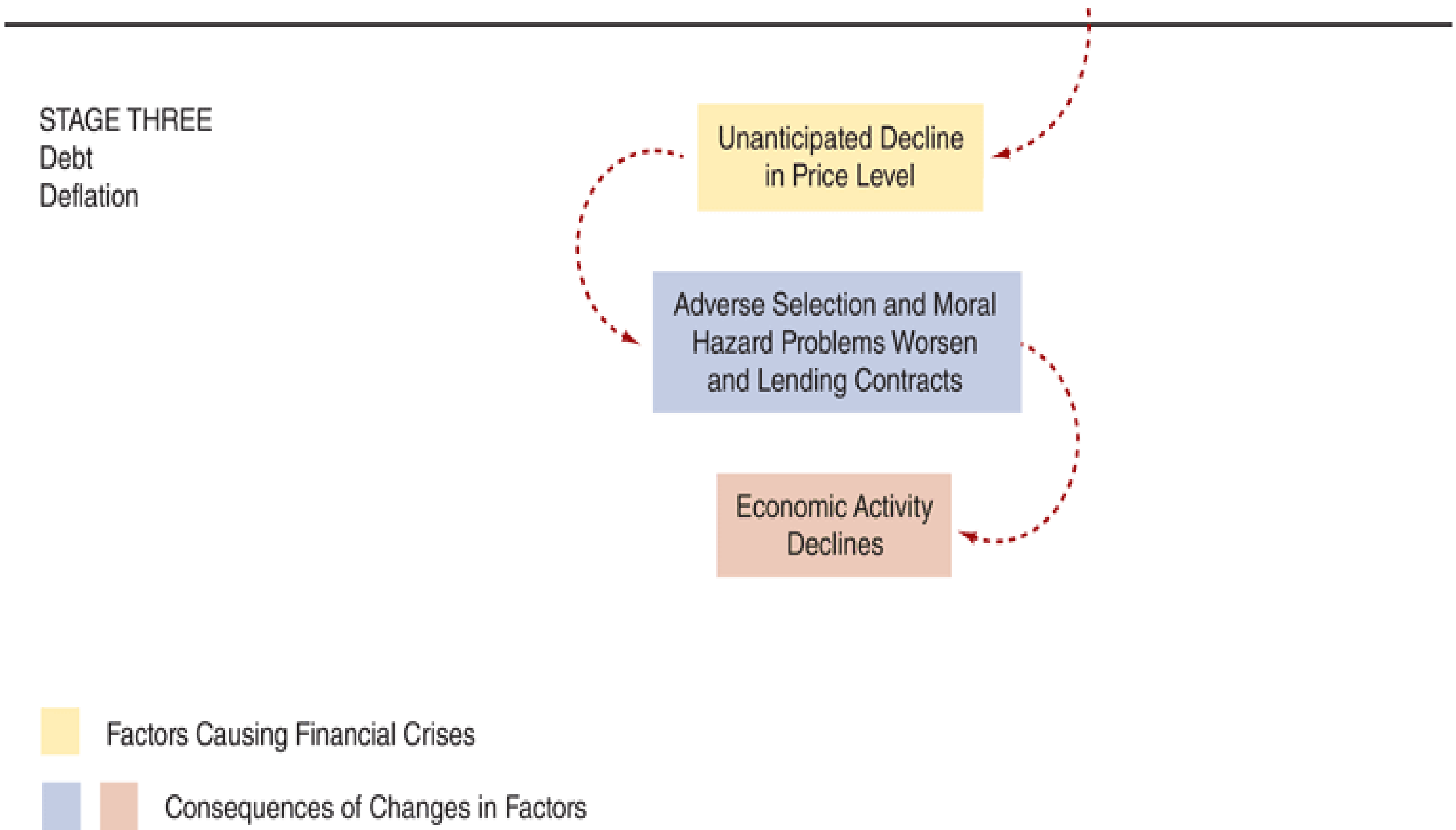
Sequence of Events in Financial Crises in Advanced Economies



Sequence of Events in Financial Crises in Advanced Economies



Stage One: Initiation

Financial crisis can begin in several ways:

- Credit Boom and Bust

- Asset-Price Boom and bust

- Increase in Uncertainty

Stage One: Initiation

- The seeds of a financial crisis can begin with **mismanagement of financial liberalization or innovation**:

(“Derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal." Warren Buffett, (Second richest man in America) report to his stockholders in 2002.http://www.berkshirehathaway.com/2002ar/2002ar.pdf (link)

  – elimination of restrictions
  – introduction of new types of loans or other financial products

- Either can lead to a credit boom, where risk management is lacking.

Stage One: Initiation

- Government safety nets weaken incentives for risk management. Depositors ignore bank risk-taking.
- Eventually, loan losses accrue, and asset values fall, leading to a reduction in capital.
- Financial institutions cut back in lending, a process called **deleveraging**. Banking funding falls as well.

Stage One: Initiation

- As FIs cut back on lending, no one is left to evaluate firms. The financial system losses its primary institution to address adverse selection and moral hazard.
- Economic spending contracts as loans become scarce.

Stage One: Initiation

A financial crisis can also begin with an **asset-price boom and bust**:

- A pricing bubble starts, where asset values exceed their fundamental values.
- When the bubble bursts and prices fall, corporate net worth falls as well. Moral hazard increases as firms have little to lose.
- FIs also see a fall in their assets, leading again to deleveraging.

Stage One: Initiation

Finally, a financial crisis can begin with an increase in uncertainty:

- Periods of high uncertainty can lead to crises, such as stock market crashes or the failure of a major financial institution. Examples include:
  - 1857, when the Ohio Life Insurance & Trust Company failed
  - 2008, when AIG, Bear Sterns, and Lehman Bros. failed
- With information hard to come by, moral hazard and adverse selection problems increase, reducing lending and economic activity

Stage Two: Banking Crisis

Deteriorating balance sheets lead financial institutions into insolvency. If severe enough, these factors can lead to a **bank panic**.

- Panics occur when depositors are unsure which banks are insolvent, causing all depositors to withdraw all funds immediately
- As cash balances fall, FIs must sell assets quickly, further deteriorating their balance sheet
- Adverse selection and moral hazard become severe – it takes years for a full recovery

Stage Three: Debt Deflation

- Consider a firm in 2015 with assets of $100 million (in 2015 dollars), $90 million of long-term liabilities, and so $10 million in net worth.
- Price levels fall by 10% in 2016. Real value of assets (in 2015 dollars) remains the same.
- Real value of liabilities rise to $99 million (in 2015 dollars), and so net worth falls to just $1 million!

Stage Three: Debt Deflation

If the crisis also leads to a sharp decline in prices, **debt deflation** can occur, where asset prices fall, but debt levels do not adjust, increasing debt burdens.

- This leads to an increase in adverse selection and moral hazard, which is followed by decreased lending
- Economic activity remains depressed for a long time

Cases

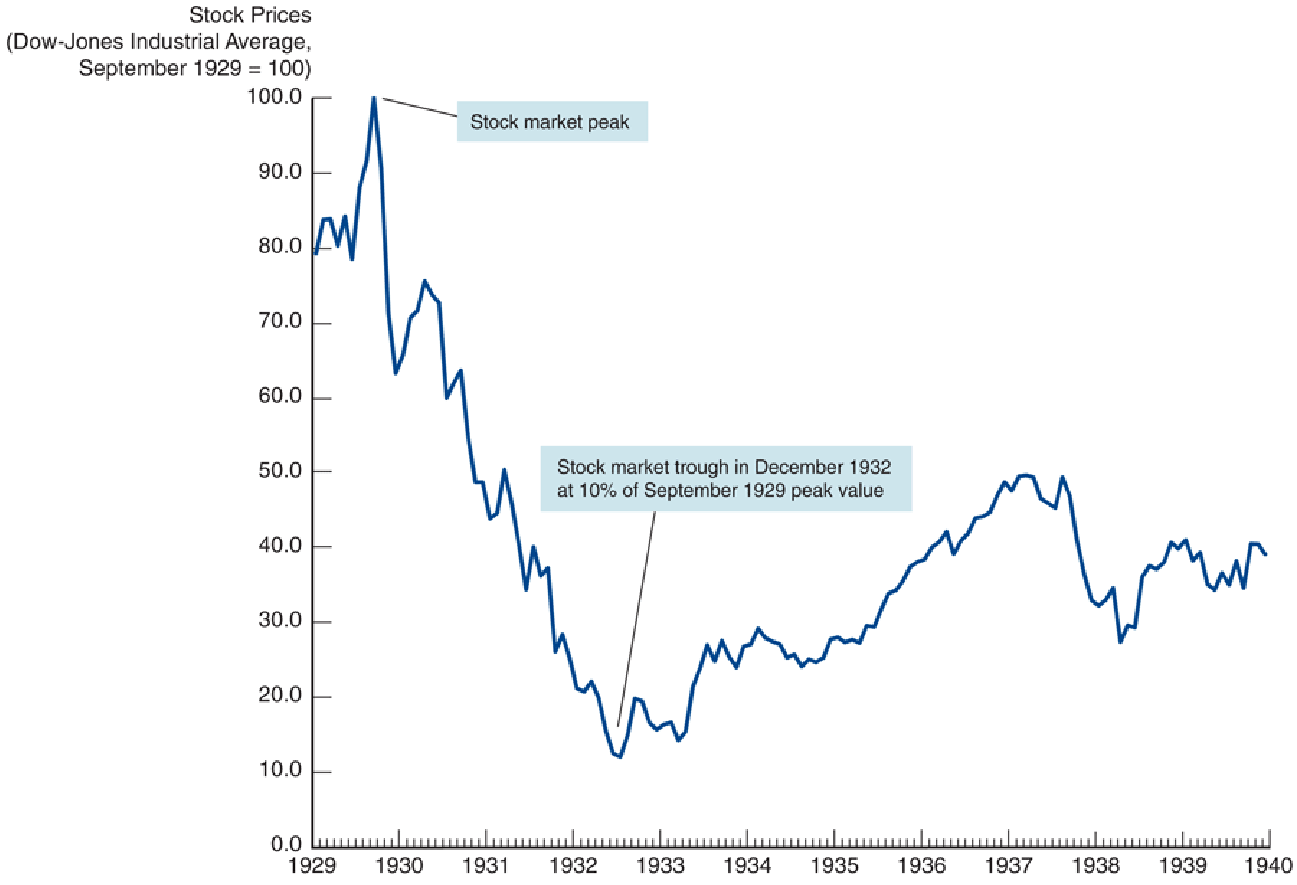
We will now examine several cases which highlight various financial crises, focusing on how they started and the impact they had:

- The Great Depression
- The Global Financial Crisis of 2007-2009

Case: The Great Depression

- In 1928 and 1929, stock prices doubled in the U.S. The Fed tried to curb this period of excessive speculation with a tight monetary policy. But this lead to a stock market collapse of more than 20% in October of 1929, and losing an additional 20% by the end of 1929.
- As the next slide shows, the decline continued for several years.

Stock Price Data During the Great Depression Period



Source: Dow-Jones Industrial Average (DJIA). Global Financial Data. www.globalfinancialdata.com/index_tabs.php?action=detailedinfo&id=1165.

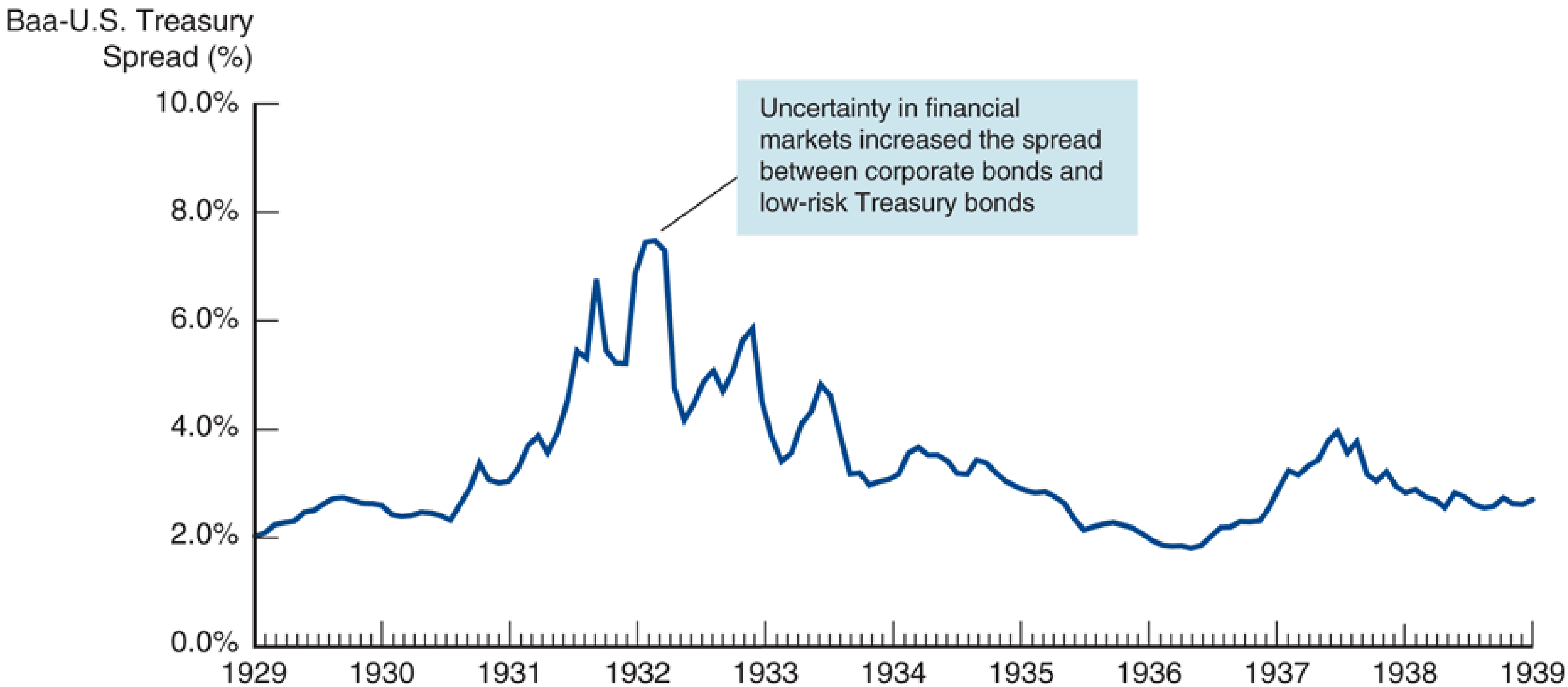
Case: The Great Depression

- What might have been a normal recession turned into something far worse, when severe droughts in 1930 in the Midwest led to a sharp decline in agricultural production.
- Between 1930 and 1933, one-third of U.S. banks went out of business as these agricultural shocks led to bank failures.
- For more than two years, the Fed sat idly by through one bank panic after another.

Case: The Great Depression

Adverse selection and moral hazard in credit markets became severe. Firms with productive uses of funds were unable to get financing. As seen in the next slide, credit spreads increased from 2% to nearly 8% during the height of the Depression in 1932.

Credit Spreads During the Great Depression



Source: Federal Reserve Bank of St. Louis FRED database, http://research.stlouisfed.org/fred2/categories/22.

Case: The Great Depression

- The deflation during the period lead to a 25% decline in price levels.
- The prolonged economic contraction lead to an unemployment rate around 25%.
- The Depression was the worst financial crisis ever in the U.S. It explains why the economic contraction was also the most severe ever experienced by the nation.

Case: The Great Depression

- Bank panics in the U.S. spread to the rest of the world, and the contraction of the U.S. economy decreased demand for foreign goods.
- The worldwide depression caused great hardship, and the resulting discontent led to the rise of fascism and WWII.

Great Depression of the 1930s vs Great Recession of 2007-2009

- Unemployment ranged between **14-25** percent between 1931 and 1940.
- Unemployment peaked at **10.2** percent.
- Real Gross Domestic Product fell by **26.7** percent between 1929 and 1933.
- Real Gross Domestic Product fell by **3.7** percent between late 2007 and mid-2009.
- The Overall Price Level **fell 24 perc**ent between 1929 and 1933.
- The Overall Price Level **rose** modestly, around **2.5 percent**, between late 2007 and mid 2009.

Case: The Global Financial Crisis of 2007-2009

We begin our look at the 2007–2009 financial crisis by examining three central factors:

- financial innovation in mortgage markets
- agency problems in mortgage markets
- the role of asymmetric information in the credit rating process

Case: The Global Financial Crisis of 2007-2009

Financial innovation in mortgage markets developed along a few lines:

- Less-than-credit worthy borrowers found the ability to purchase homes through subprime lending, a practice almost nonexistent until the 2000s
- Financial engineering developed new financial products to further enhance and distribute risk from mortgage lending

Case: The Global Financial Crisis of 2007-2009

Agency problems in mortgage markets also reached new levels:

- Mortgage originators did not hold the actual mortgage, but sold the note in the secondary market
- Mortgage originators earned fees from the volume of the loans produced, not the quality
- In the extreme, unqualified borrowers bought houses they could not afford through either creative mortgage products or outright fraud (such as inflated income)

Case: The Global Financial Crisis of 2007-2009

Finally, the rating agencies didn’t help:

- Agencies consulted with firms on structuring products to achieve the highest rating, creating a clear conflict
- Further, the rating system was hardly designed to address the complex nature of the structured debt designs
- The result was meaningless ratings that investors had relied on to assess the quality of their investments

Case: The Global Financial Crisis of 2007-2009

Many suffered as a result of the 2007–2009 financial crisis. We will look at five areas:

- U.S. residential housing
- FIs balance sheets
- The “shadow” banking system
- Global financial markets
- The failure of major financial firms

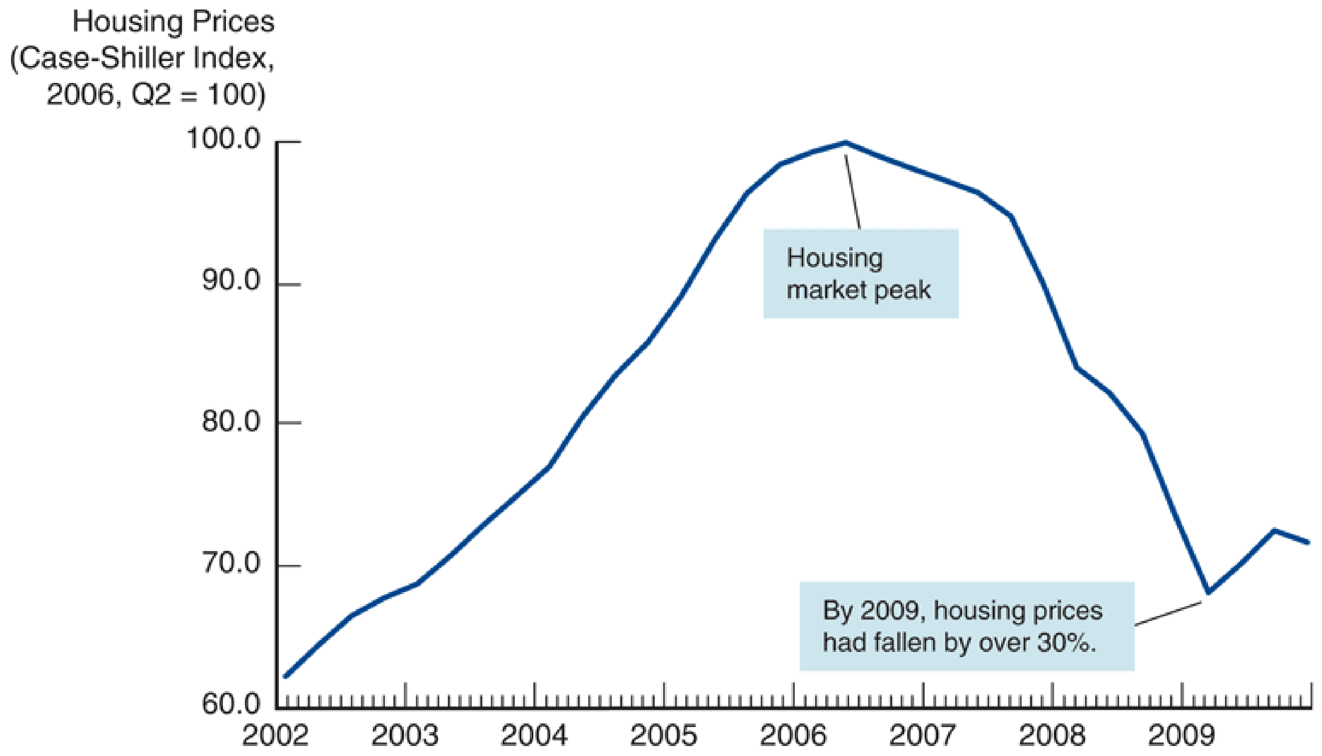
Case: The Global Financial Crisis of 2007-2009

- Initially, the housing boom was lauded by economics and politicians. The housing boom helped stimulate growth in the subprime market as well.
- However, underwriting standard fell. People were clearly buying houses they could not afford, except for the ability to sell the house for a higher price.

Case: The Global Financial Crisis of 2007-2009

- Lending standards also allowed for near 100% financing, so owners had little to lose by defaulting when the housing bubble burst.
- The next slide shows the rise and fall of housing prices in the U.S. The number of defaults continues to plague the U.S. banking system.

Housing Prices and the Financial Crisis of 2007–2009



Source: Case-Shiller 20-City Home Price Index in Federal Reserve Bank of St. Louis, FRED Database. http://research.stlouisfed.org/fred2/ .

Was the Fed to Blame for the Housing Price Bubble?

- Some argue that low interest rates from 2003 to 2006 fueled the housing bubble (the Taylor rule).
- In early 2010, Mr. Bernanke rebutted this argument. He argued rates were appropriate.

Was the Fed to Blame for the Housing Price Bubble?

- He also pointed to new mortgage products, relaxed lending standards, and capital inflows as more likely causes.
- Bernanke’s speech was very controversial, and the debate over whether monetary policy was to blame for the housing price bubble continues to this day.

Case: The Global Financial Crisis of 2007-2009

- As mortgage defaults rose, banks and other FIs saw the value of their assets fall. This was further complicated by the complexity of mortgages, CDOs, defaults swaps, and other difficult-to-value assets.
- Banks began the deleveraging process, selling assets and restricting credit, further depressing the struggling economy.

The End