Monetary Theory and Policy

Chapter 9： Financial Crises and the Subprime Meltdown

Factors Causing Financial Crises

- Asset Markets Effects on Balance Sheets
  - Stock market decline
    - Decreases net worth of corporations.
  - Unanticipated decline in the price level
    - Liabilities increase in real terms and net worth decreases.
  - Unanticipated decline in the value of the domestic currency
    - Increases debt denominated in foreign currencies and decreases net worth.
  - Asset write-downs.

Factors Causing Financial Crises

- Deterioration in Financial Institutions' Balance Sheets
  - Decline in lending.
- Banking Crisis
  - Loss of information production and disintermediation.
- Increases in Uncertainty
  - Decrease in lending.

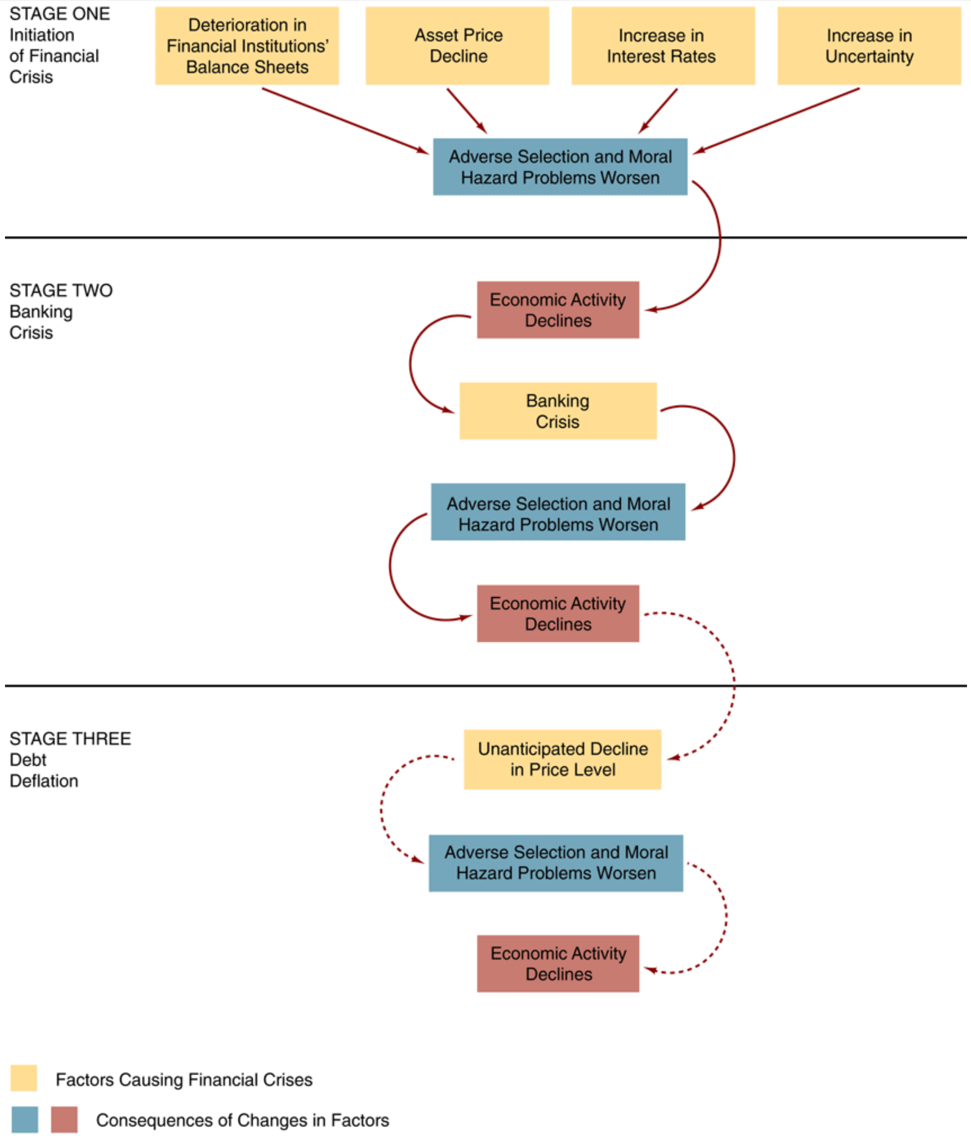
Factors Causing Financial Crises

- Increases in Interest Rates
  - Increases adverse selection problem
  - Increases need for external funds and therefore adverse selection and moral hazard.
- Government Fiscal Imbalances
  - Create fears of default on government debt.
  - Investors might pull their money out of the country.

Dynamics of past U.S. Financial Crises

- Stage One: Initiation of Financial Crisis
  - Mismanagement of financial liberalization/innovation
  - Asset price boom and bust
  - Spikes in interest rates
  - Increase in uncertainty
- Stage two: Banking Crisis
- Stage three: Debt Deflation

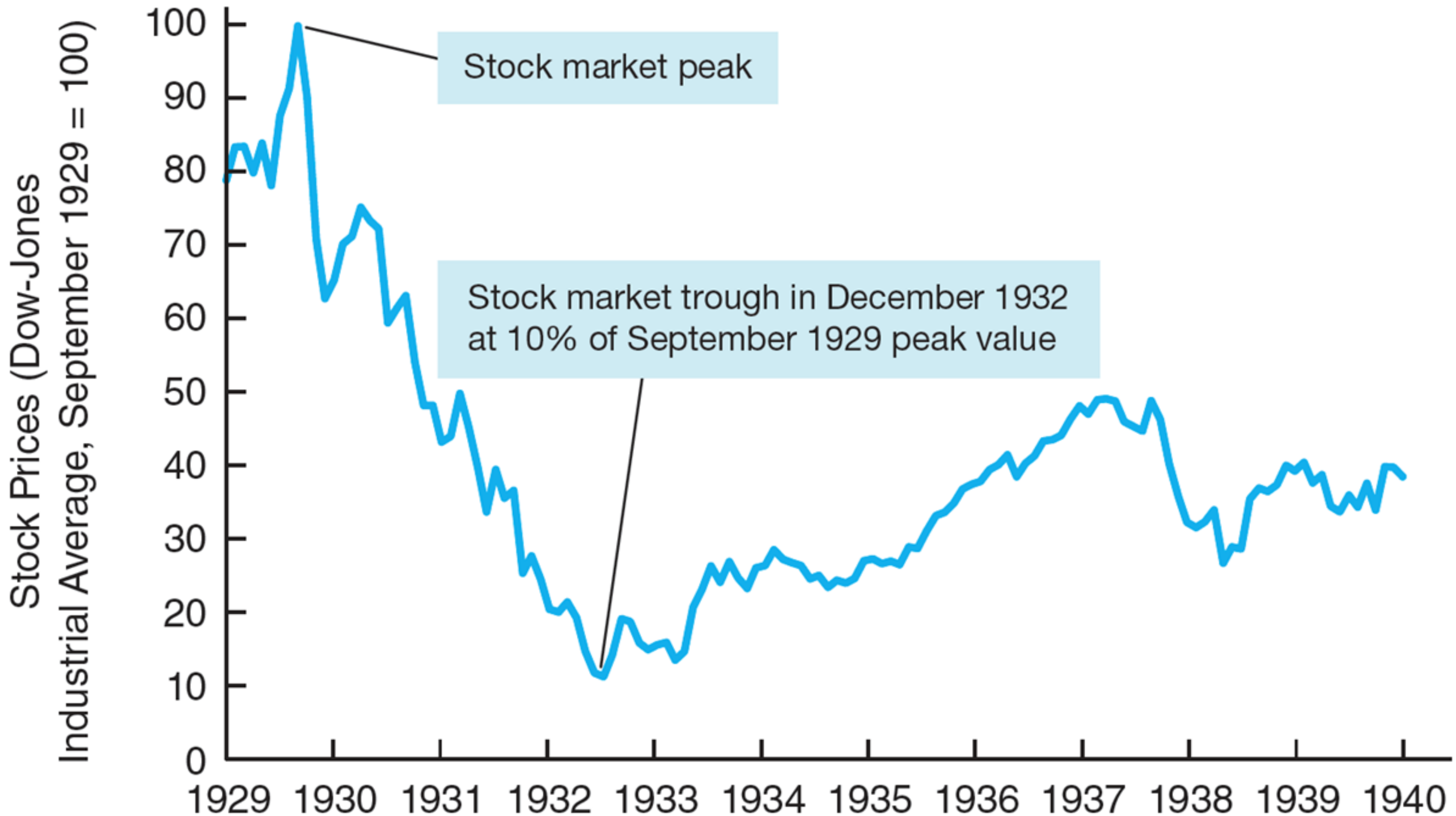
FIGURE 1 Sequence of Events in U.S. Financial Crises



The Mother of All Financial Crises: The Great Depression

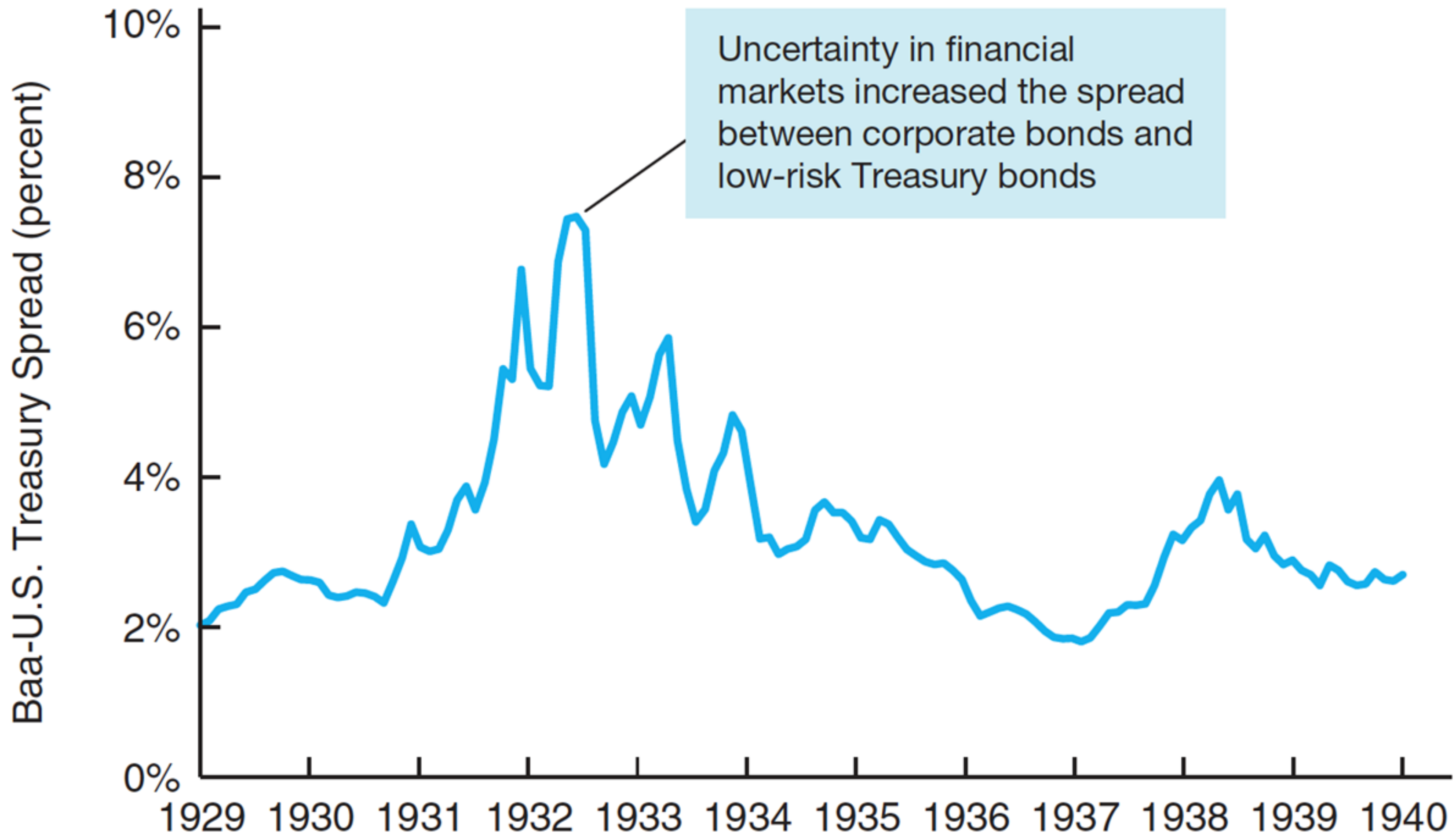
- How did a financial crisis unfold during the Great Depression and how it led to the worst economic downturn in U.S. history?
  - This event was brought on by:
  - Stock market crash
  - Bank panics
  - Continuing decline in stock prices
  - Debt deflation

Figure 2 Stock Price Data During the Great Depression Period



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

Figure 3 Credit Spreads During the Great Depression



The Subprime Financial Crisis of 2007 - 2009

- Financial innovations emerge in the mortgage markets:
  - Subprime and Alt-A mortgages
  - Mortgage-backed securities
  - Collateralized debt obligations (CDOs)
- Housing price bubble forms
  - Increase in liquidity from cash flows surging to the United States

The Subprime Financial Crisis of 2007 – 2009 (cont'd)

- Housing price bubble forms (cont'd)
  - Development of subprime mortgage market fueled housing demand and housing prices.
- Agency problems arise
  - "Originate to distribute" model is subject to principal (investor) agent (mortgage broker) problem.
  - Borrowers had little incentive to disclose information about their ability to pay

The Subprime Financial Crisis of 2007 – 2009 (cont'd)

- Agency problems arise (cont'd)
  - Commercial and investment banks (as well as rating agencies) had weak incentives to assess the quality of securities
- Information problems surface
- Housing price bubble bursts

The Subprime Financial Crisis of 2007 – 2009 (cont'd)

- Crisis spreads globally
  - Sign of the globalization of financial markets
  - TED spread (3 months interest rate on Eurodollar minus 3 months Treasury bills interest rate) increased from 40 basis points to almost 240 in August 2007.

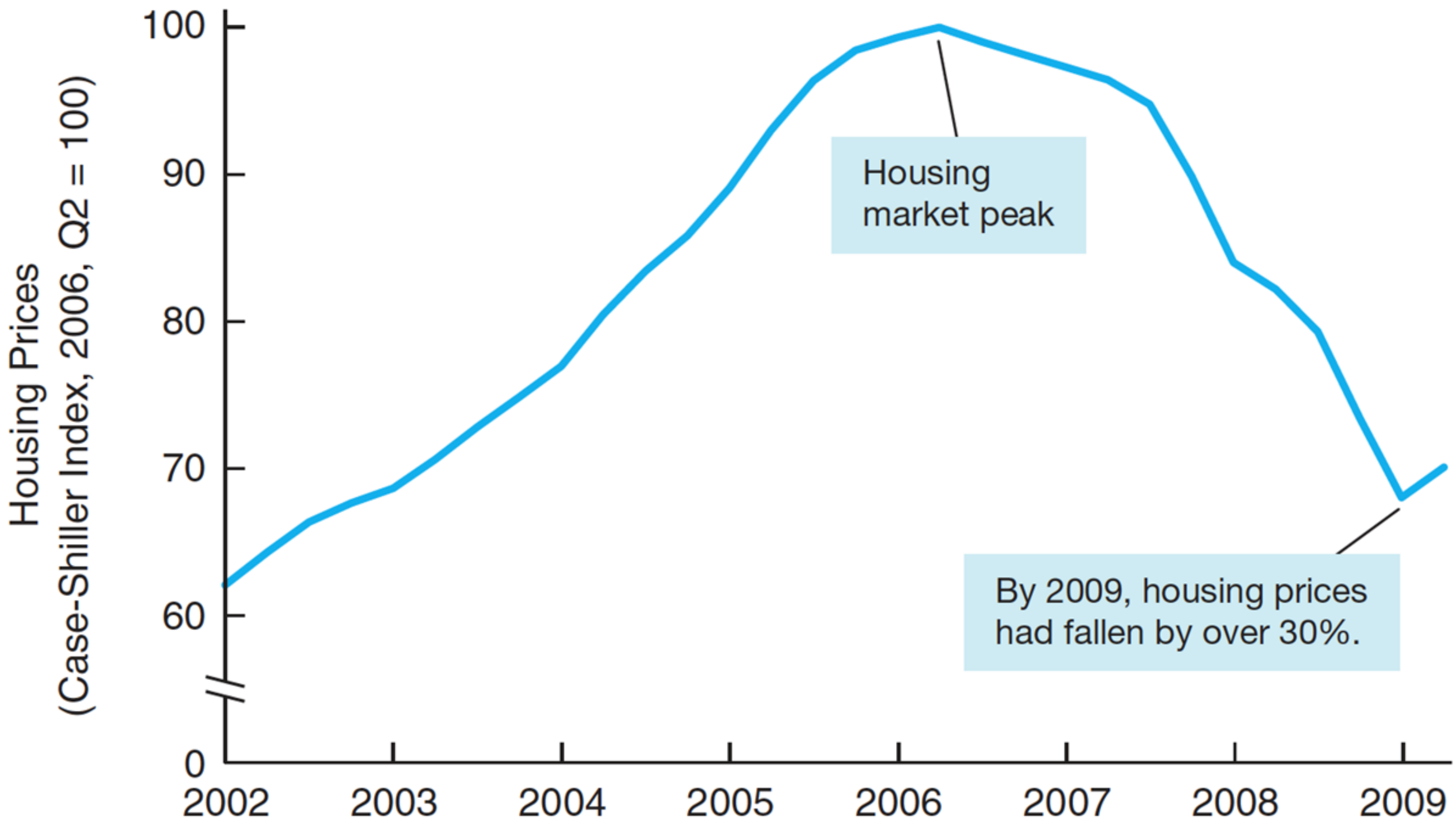
The Subprime Financial Crisis of 2007 – 2009 (cont'd)

- Banks' balance sheets deteriorate
  - Write downs
  - Sell of assets and credit restriction
- High-profile firms fail
  - Bear Stearns (March 2008)
  - Fannie Mae and Freddie Mac (July 2008)
  - Lehman Brothers, Merrill Lynch, AIG, Reserve Primary Fund (mutual fund) and Washington Mutual (September 2008).

The Subprime Financial Crisis of 2007 – 2009 (cont'd)

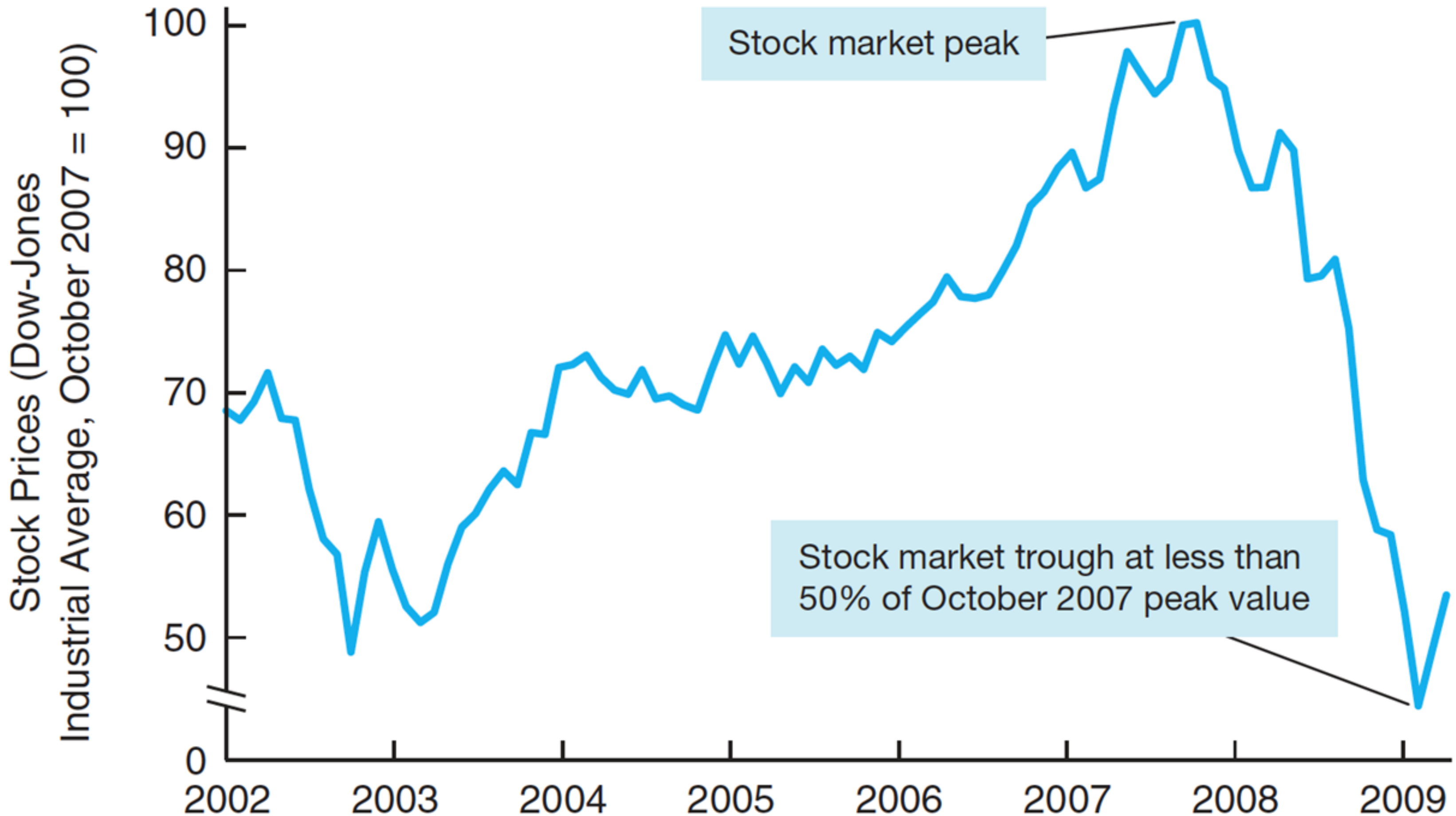
- Bailout package debated
  - House of Representatives voted down the $700 billion bailout package on September 29, 2008.
  - It passed on October 3, 2008.
- Recovery in sight?
  - Congress approved a $787 billion economic stimulus plan on February 13, 2009.

Figure 4 Housing Prices and the Financial Crisis of 2007–2009



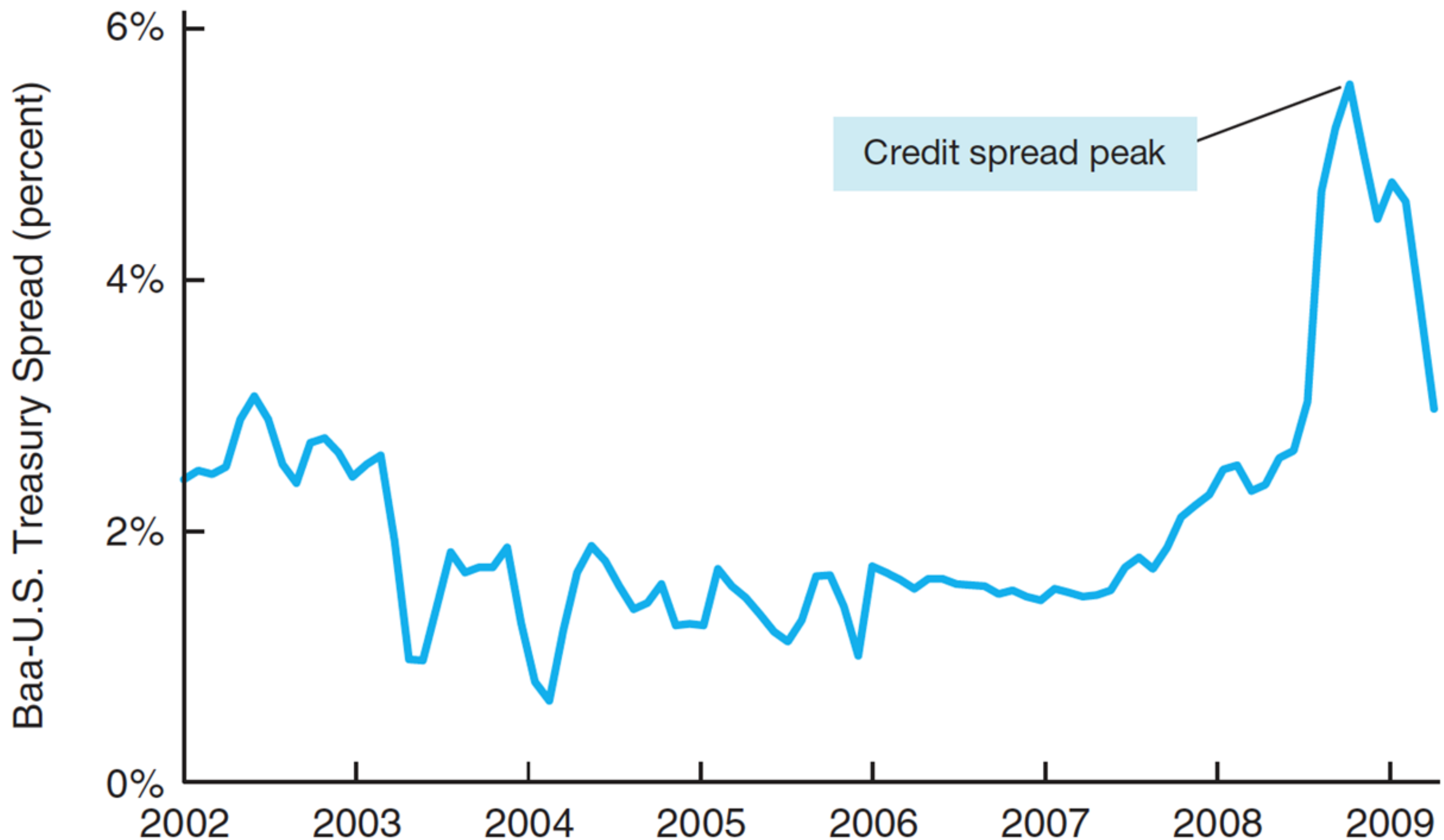
Source: Case-Shiller U.S. National Composite House Price Index from Federal Reserve Bank of St. Louis FRED database: http://research.stlouisfed.org/fred2/.

Figure 5 Stock Prices and the Financial Crisis of 2007–2009



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

Figure 6 Credit Spreads and the 2007–2009 Financial Crisis



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

Dynamics of Financial Crises in Emerging Market Economies

- Stage one: Initiation of Financial Crisis.
  - Path one: mismanagement of financial liberalization/globalization:
    - Weak supervision and lack of expertise leads to a lending boom.
    - Domestic banks borrow from foreign banks.
    - Fixed exchange rates give a sense of lower risk.
    - Banks play a more important role in emerging market economies, since securities markets are not well developed yet.

Dynamics of Financial Crises in Emerging Market Economies

- Path two: severe fiscal imbalances:
  - Governments in need of funds sometimes force banks to buy government debt.
  - When government debt loses value, banks lose and their net worth decreases.
- Additional factors:
  - Increase in interest rates (from abroad)
  - Asset price decrease
  - Uncertainty linked to unstable political systems

Dynamics of Financial Crises in Emerging Market Economies

- Stage two: currency crisis
  - Deterioration of bank balance sheets triggers currency crises:
    - Government cannot raise interest rates (doing so forces banks into insolvency)…
    - … and speculators expect a devaluation.
  - How severe fiscal imbalances triggers currency crises:
    - Foreign and domestic investors sell the domestic currency.

Dynamics of Financial Crises in Emerging Market Economies

- Stage three: Full-Fledged Financial Crisis:
  - The debt burden in terms of domestic currency increases (net worth decreases).
  - Increase in expected and actual inflation reduces firms' cash flow.
  - Banks are more likely to fail:
    - Individuals are less able to pay off their debts (value of assets fall).
    - Debt denominated in foreign currency increases (value of liabilities increase).

Financial Crises: Mexico 1994-1995

- Financial liberalization in the early 1990s:
  - Lending boom, coupled with weak supervision and lack of expertise.
  - Banks accumulated losses and their net worth declined.
- Rise in interest rates abroad.
- Uncertainty increased (political instability).
- Domestic currency devaluated on December 20, 1994.
- Rise in actual and expected inflation.

Financial Crises: East Asia 1997-1998

- Financial liberalization in the early 1990s:
  - Lending boom, coupled with weak supervision and lack of expertise.
  - Banks accumulated losses and their net worth declined.
- Uncertainty increased (stock market declines and failure of prominent firms).
- Domestic currencies devaluated by 1997.
- Rise in actual and expected inflation.

Financial Crises: Argentina 2001-2002

- Government coerced banks to absorb large amounts of debt due to fiscal imbalances.
- Rise in interest rates abroad.
- Uncertainty increased (ongoing recession).
- Domestic currency devaluated on January 6, 2002
- Rise in actual and expected inflation.

FIGURE 7 Sequence of Events in Emerging Market Financial Crises

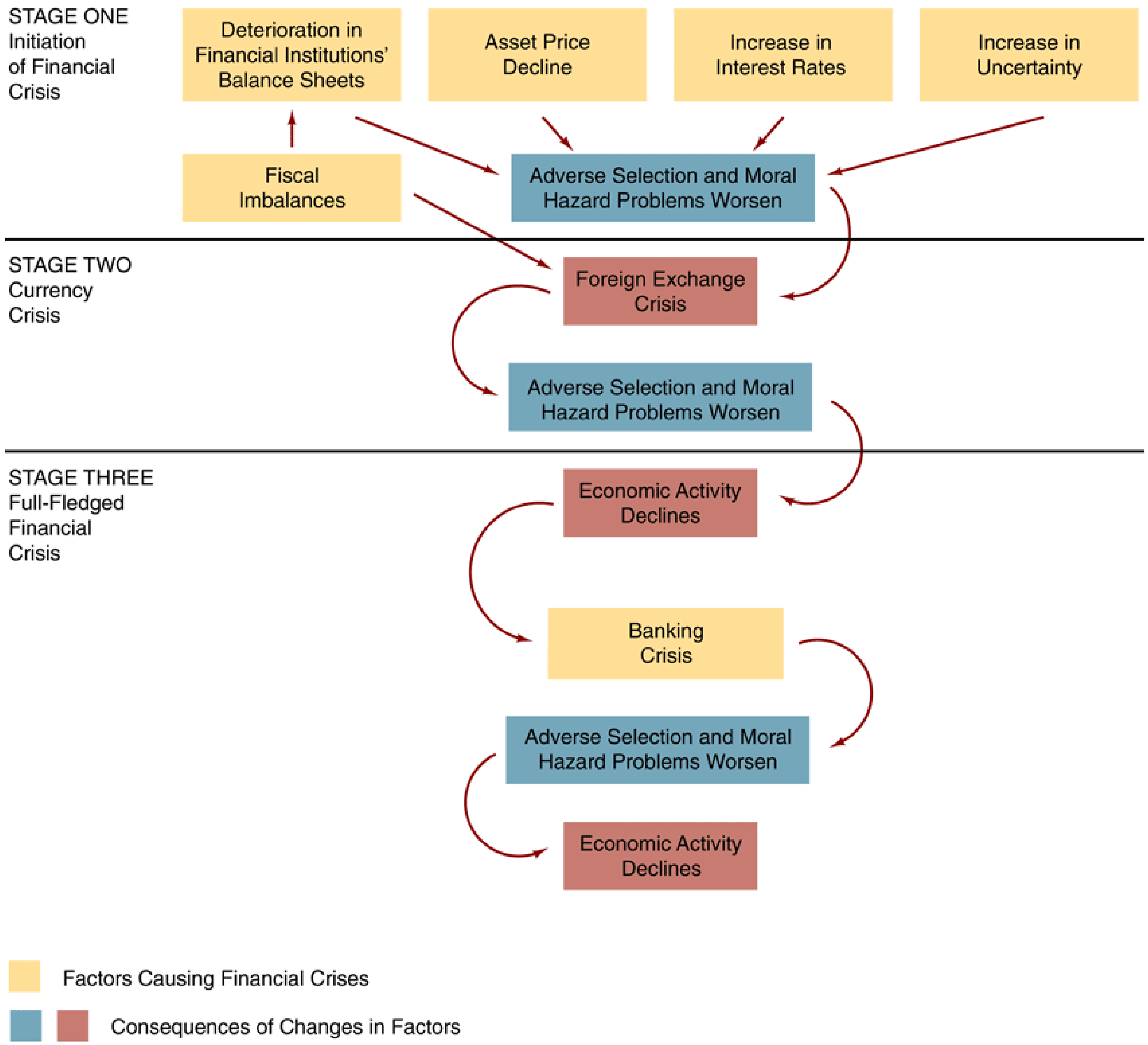
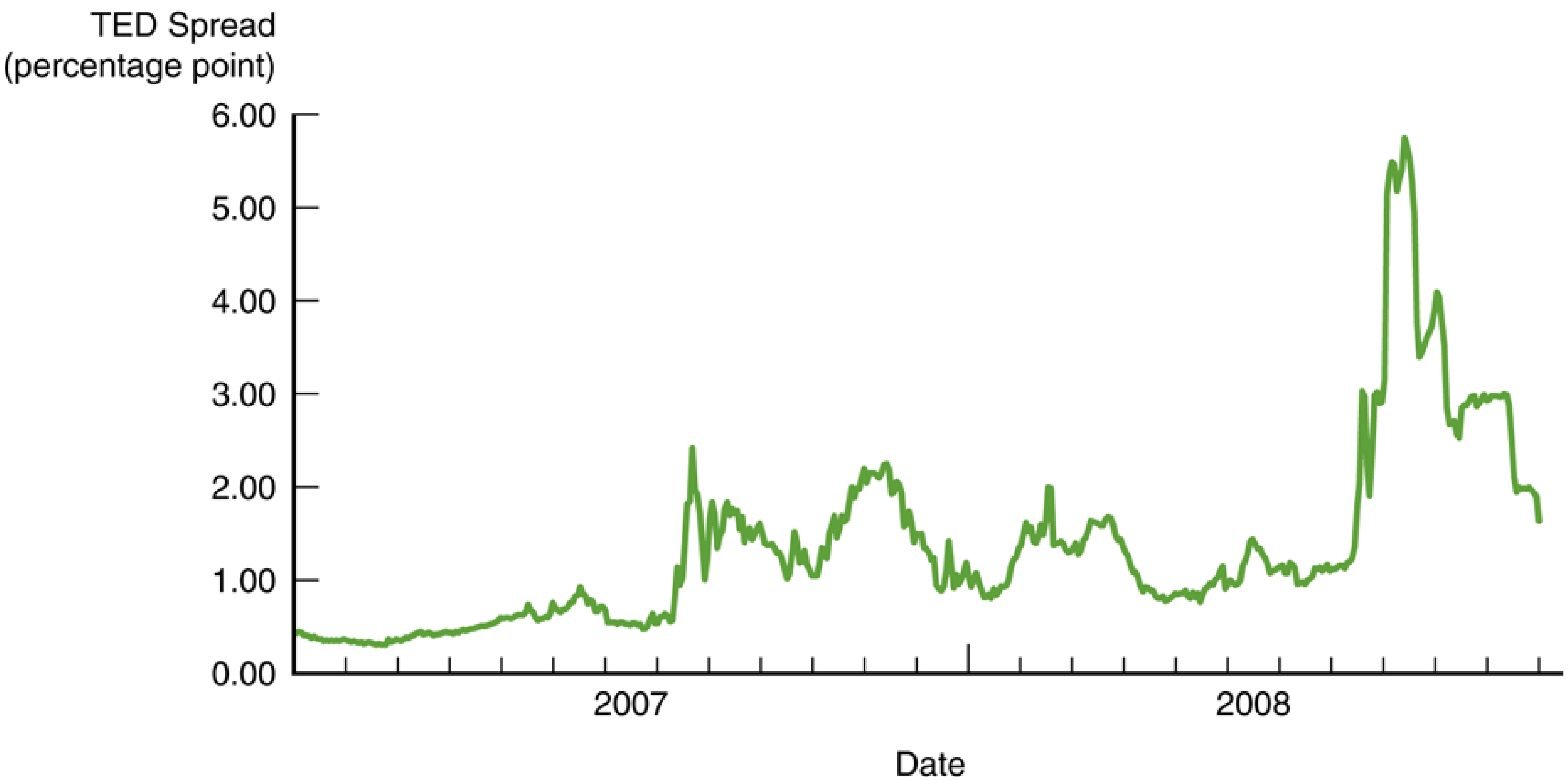


FIGURE 8 Treasury Bill–to–Eurodollar Rate (TED) Spread



Source: www.federalreserve.gov/releases/h15/data.htm