Economics of Financial Markets – Lecture 8

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Exam Viewing

- Tomorrow we will hold an exam viewing session:

tomorrow (Friday 21/9) from 11.30am to 1pm at 39 - 651 (Colin Clark Bldg - Meeting Room).

- Please remember to **bring you student ID** with you to view your paper.

Preview

- We study an **economic analysis of financial regulation**.

Learning Objectives

- Identify the reasons for and forms of a **government safety net** in financial markets.
- List and summarize the **types of financial regulation** and how each reduces **asymmetric information** problems.

Asymmetric Information as a Rationale for Financial Regulation

- **Bank panics** and the need for **deposit insurance**:
  - FDIC (Federal Deposit Insurance Corporation): **bank failures** (a bank is unable to meet its obligations to pay its depositors and other creditors, and so must go out of business) and contagion effect
- Other form of government safety net:
  - Lending from the central bank to troubled institutions (**lender of last resort**)

Government Safety Net

- **Moral Hazard**
  - Financial institutions have an incentive to take on greater risk
- **Adverse Selection**
  - Depositors have little reason to monitor financial institutions

“Too Big to Fail”

- Government provides guarantees of repayment to large uninsured creditors of the largest financial institutions even when they are not entitled to this guarantee.
- Increases moral hazard incentives for big banks

Financial Consolidation and the Government Safety Net

- Larger and more complex financial organizations challenge regulation:
  - Increased “too big to fail” problem
  - Extends safety net to new activities, increasing incentives for risk taking in these areas (as has occurred during the global financial crisis)

Capital Requirements

- Government-imposed capital requirements are another way of minimizing moral hazard at financial institutions
- There are two forms:
  1. Based on the leverage ratio, the amount of capital divided by the bank's total assets: to be classified as well capitalized, a bank's leverage ratio must exceed 5%; a lower leverage ratio, especially one below 3%, triggers increased regulatory restrictions on the bank.
  2. Risk-based capital requirements

Restrictions on Asset Holdings

- Attempts to restrict financial institutions from too much risk taking:
  - Bank regulations (Restriction on Asset Holdings)
    - Promote diversification: limit the dollar amounts of loans in particular categories, or customers.
    - Prohibit holdings of common stock
  - Risk-based Capital requirements (off-balance sheet activities)
    - Trading financial instruments, and generating income from fees (off-balance sheet)
    - Minimum leverage ratio (for banks)
    - Basel Accord: risk-based capital requirements
    - Under Basel Accord, banks hold as capital at least 8% of their risk-weighted assets, which has been adopted by more than 100 countries.

Limitation of the Basel Accord

- Risk Categories: Assets are allocated into four categories, each with a different weight to reflect the degree of credit risk.
- Assets are assigned a credit-equivalent percentage that converts them to on-balance-sheet items to which the appropriate risk weight applies, and there are minimum capital requirements for risks in banks' trading accounts.
- Regulatory Arbitrage: The regulatory measure of bank risk, as stipulated by the risk weights, can differ substantially from the actual risk the bank faces.
- Banks have an incentive to take off their books from low-risk assets, such as a loan to a company with a very high credit rating.

Financial Supervision: Chartering and Examination

- **Chartering** (screening of proposals to open new financial institutions) to prevent adverse selection
- Filing periodic ‘call reports’: Reveal that the bank’s assets and liabilities, income and dividends, ownership, foreign exchange operations, and other details.
- The bank is also subject to examination by the bank regulatory agencies to ascertain its financial condition for a certain period.
- **Examinations** (scheduled and unscheduled) to monitor capital requirements and restrictions on asset holding to prevent moral hazard
  - Capital adequacy
  - Asset quality
  - Management
  - Earnings
  - Liquidity
  - Sensitivity to market risk

Assessment of Risk Management

- Greater emphasis on evaluating soundness of management processes for controlling risk
- For example, Trading Activities Manual of 1994 (in US) for risk management rating based on:
  - Quality of oversight provided by the board of directors and senior management
  - Adequacy of policies and limits for all risky activities
  - Quality of the risk measurement and monitoring systems
  - Adequacy of internal controls to prevent fraud or unauthorized activities on the part of employees.
- Interest-rate risk limits:
  - Internal policies and procedures
  - Internal management and monitoring
  - Implementation of stress testing and Value-at risk (VAR)

Particularly important measures

- Stress tests: Calculate potential losses and the need for more capital under fictional dire scenarios
- Value-at-risk (VaR) Calculation: Measure the size of the loss on a trading portfolio that might happen 1% of the time.

Disclosure Requirements

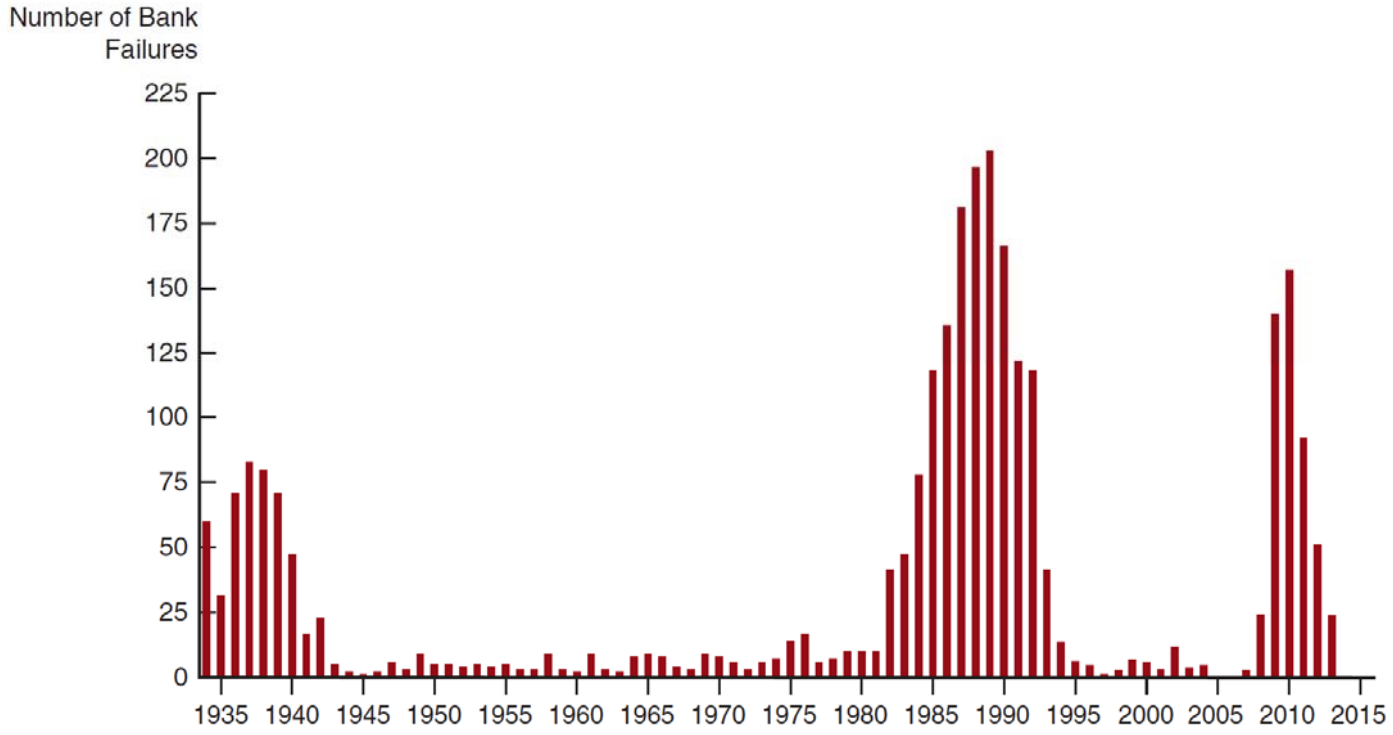
- Requirements to adhere to standard accounting principles and to disclose wide range of information
- The Basel 2 accord put a particular emphasis on disclosure requirements
- Mark-to-market (fair-value) accounting: Assets are valued in the balance sheet at which they could sell for in the market.

Macroprudential Vs. Microprudential Supervision

- Before the global financial crisis, the regulatory authorities engaged in **microprudential supervision**, which is focused on the safety and soundness of *individual* financial institutions.

- The global financial crisis has made it clear that there is a need for **macroprudential supervision**, which focuses on the safety and soundness of the financial system *in the aggregate*.

Figure: Bank Failures in the United States, 1934–2013

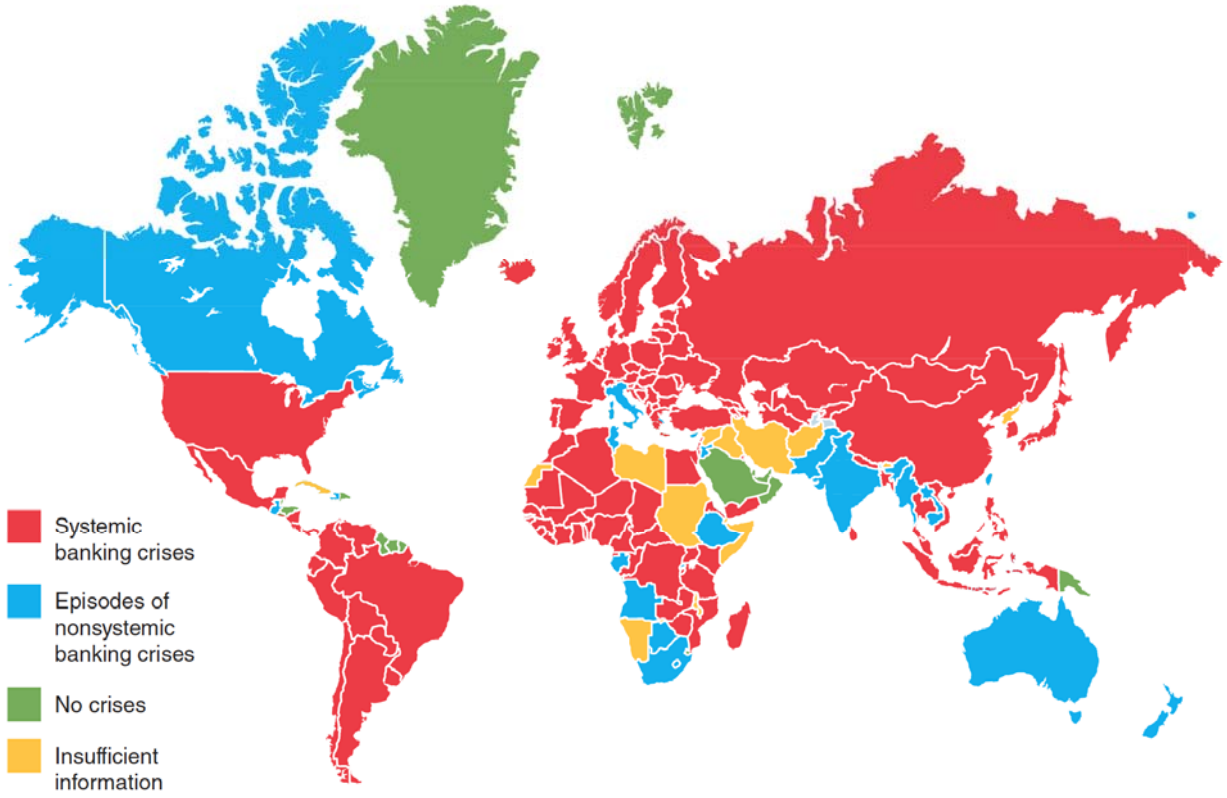


Source: www.fdic.gov/bank/historical/bank/index.html.

What is a Financial Crisis?

- A financial crisis occurs when there is a particularly large disruption to information flows in financial markets, with the result that financial frictions increase sharply and financial markets stop functioning.

Figure: Banking Crises Throughout the World Since 1970



Sources: Luc Laeven and Fabian Valencia, "Resolution of Banking Crises: The Good, the Bad and the Ugly," IMF Working Paper No. WP/10/46 (June 2010), and Luc Laeven, Banking Crisis Database at http://www.luclaeven.com/Data.htm.

Great Depression US

(from https://en.wikipedia.org/wiki/Deposit_insurance#/media/File:American_union_bank.gif)

Deposit Insurance

- Deposit insurance is a measure implemented in many countries to protect bank depositors, in full or in part, from losses caused by a bank's inability to pay its debts when due.

- Deposit insurance systems are one component of a financial system safety net that promotes financial stability.

Banking Crises Throughout the World

- “Déjà vu all over again”:
  - Deposit insurance is not to blame for some of these banking crises.
  - The common feature of these crises is the existence of a government safety net, where the government stands ready to bail out troubled financial institutions.

Big Five in Advanced Countries

1. Spain 1977
2. Norway 1987
3. Finland 1991
4. Sweden 1991
5. Japan 1992

Crisis in Emerging Markets

1. Asian crises in the 1997– 1998 (in Hong Kong, Indonesia, Korea, Malaysia, the Philippines, and Thailand).

2. Colombia in 1998.

3. Argentina's 2001 collapse.

Argentina 2001

- The economy shrank by 28 percent from 1998 to 2002.
- It caused widespread unemployment, riots, the fall of the government, a default on the country's foreign debt, the rise of alternative currencies and the end of the peso's fixed exchange rate to the US dollar.
- Argentina's many years of military dictatorship had already created significant economic problems before the 2001 crisis.
- When the recession began in 1999, the national deficit widened to 2.5% of GDP, and its external debt surpassed 50% of GDP.
- By the end of 2001, people began withdrawing large sums of dollars from their bank accounts, turning pesos into dollars, and sending them abroad, which caused a bank run.

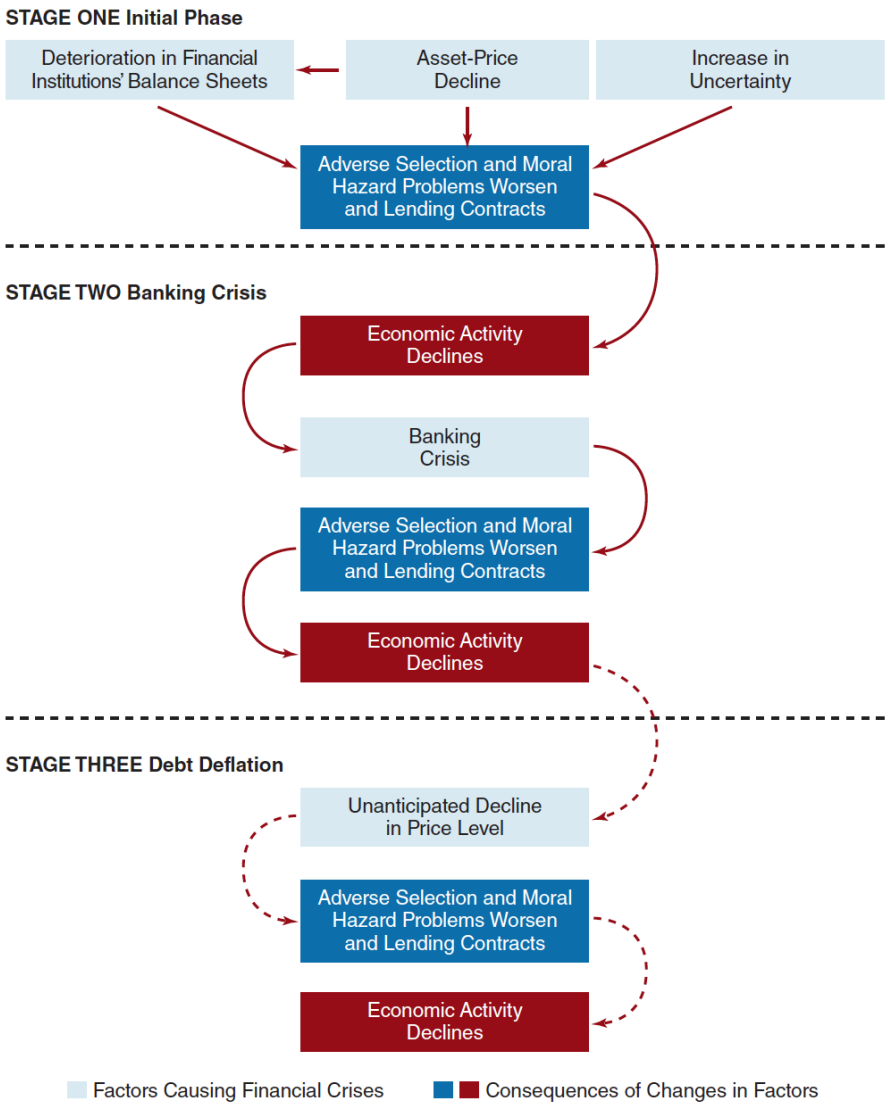
Japan 1992

- The start of Lost decades: Burst of Asset Bubbles.
- The Bank for International Settlements (BIS) standard sets a requirement that international banks have to keep “safe assets” relative to their total assets, in order to join international markets.
- BIS standards were introduced at two steps, 1991 and 1993.
- Nippon Credit Bank and Hokkaido Takushoku Bank consequently revealed that they could not meet BIS standard.
- The issue of bad-performing loans came out.

Dynamics of Financial Crises

- Stage One: Initiation of a Financial Crisis
  - Credit Boom and Bust: Mismanagement of financial liberalization/innovation leading to asset price boom and bust
  - Asset-price Bubbles: The rise of asset prices above their fundamental economics values
  - Asset-price Bubbles and Bursts
  - Increase in Uncertainty
- Stage two: Banking Crisis
- Stage three: Debt Deflation

Figure 1 Sequence of Events in Financial Crises in Advanced Economies



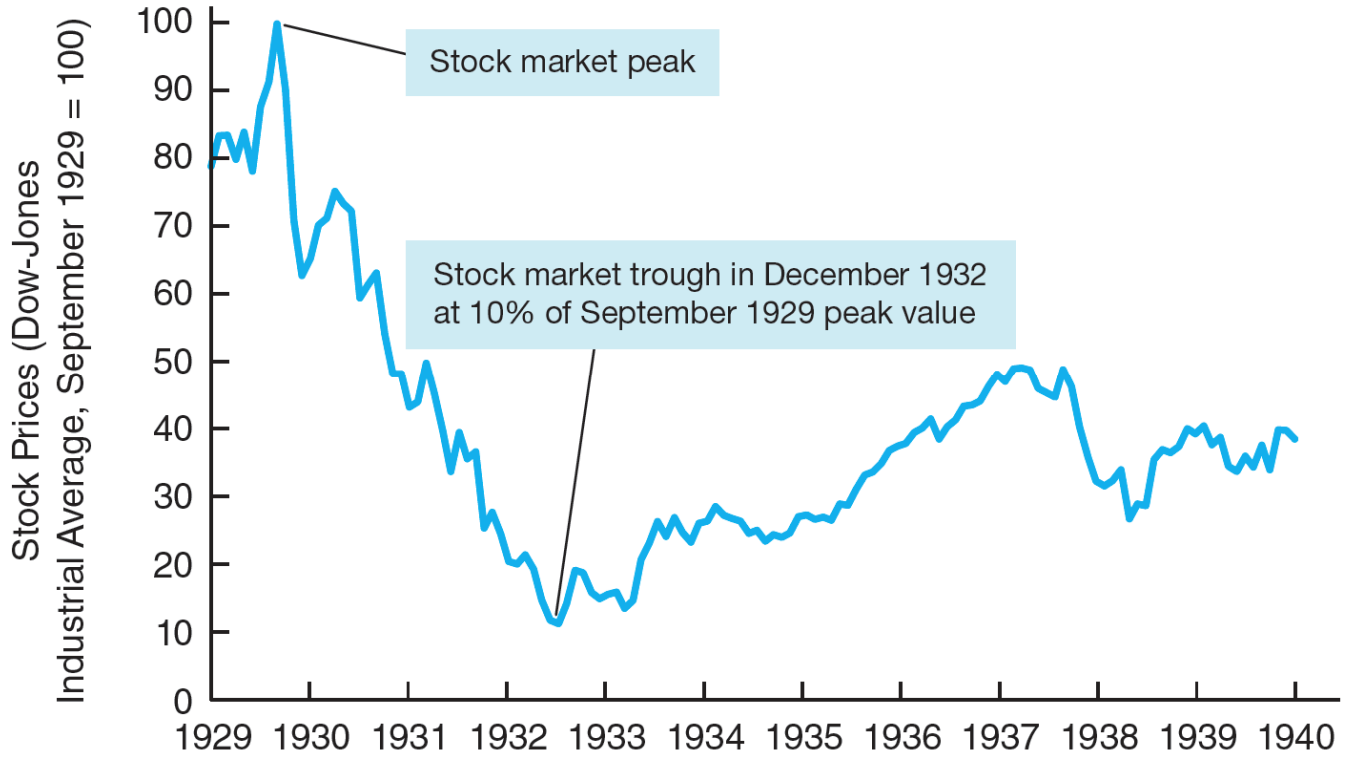
The Mother of All Financial Crises: The Great Depression

- 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

Debt Deflation

- Debt deflation occurs when a substantial unanticipated decline in the price level sets in , lending to a further deterioration in firms' net worth because of the increased burden of indebtedness.
- Suppose that a firm has assets of $100 million and $90 million of long-term liabilities in 2016 dollars. The net worth is $10 million.
- If the price level falls by 10% in 2017, the real value of the liabilities would rise to $99 million in 2016 dollars.
- Then real net worth in 2016 dollars would fall from $10 million to $1 million.

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.

Credit Spread

- Credit Spread: The difference between the interest rate on loans to households and businesses and the interest rate on completely safe assets that are sure to be repaid back, such as US treasury securities.

Figure 3 Credit Spreads During the Great Depression