

Financial System and Financial Crises

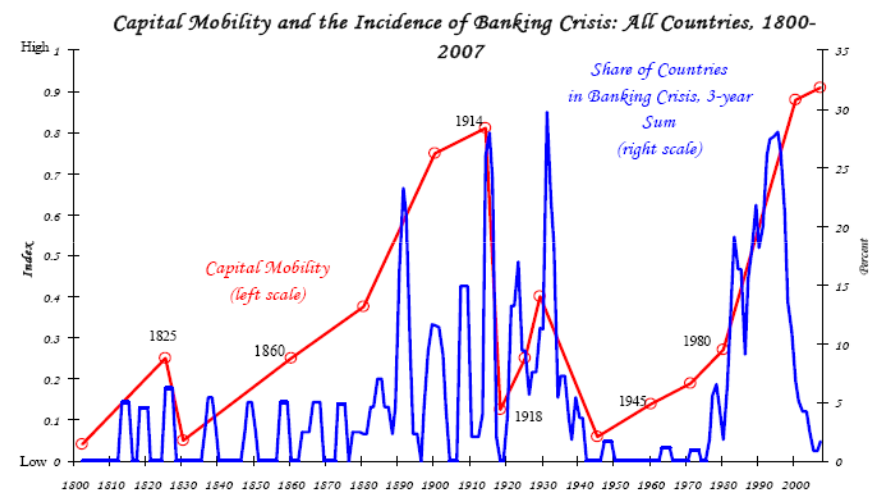
Introduction

Financial crises are major disruptions in financial markets characterized by sharp declines in asset prices and firm failures. Beginning in August 2007, the U.S. entered into a crisis that was described as a “once-in-a-century credit tsunami.”

Introduction

Why did this financial crisis occur? Why have financial crises been so prevalent throughout U.S. history, as well as in so many other countries, and what insights do they provide on the current crisis? Why are financial crises almost always followed by severe contractions in economic activity? Does financial crisis = Banking Crisis?

Banking Crises



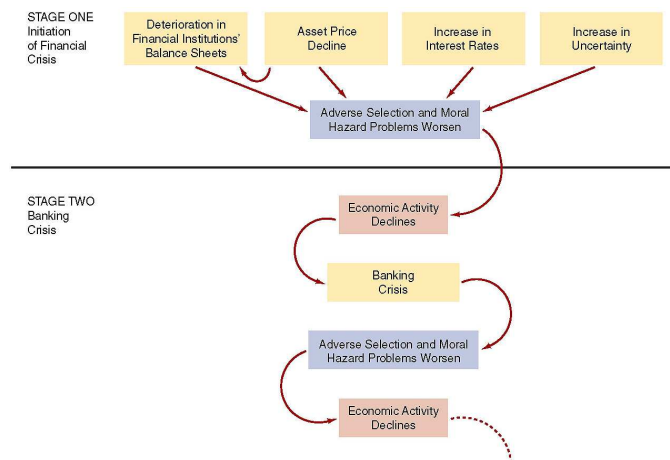
Types of Crises

- Reinhart and Rogoff identified 5 “varieties” of financial crises.
 1. External Debt
 2. Domestic Debt
 3. Banking Crises
 4. Currency Crashes
 5. Inflation Outbursts
- Our focus is on Banking Crises

Asymmetric Information and Financial Crises

- A functioning financial system is critical to a robust economy.
- However, both moral hazard and adverse selection are still present. The study of these problems (agency theory) is the basis for understanding and defining a financial crisis.

Sequence of Events in U.S. Financial Crises (a)



Sequence of Events in U.S. Financial Crises (b)

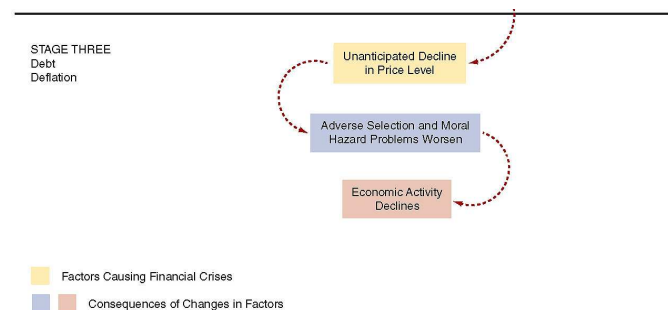


FIGURE 8.1 Sequence of Events in U.S. Financial Crises

The solid arrows in Stages One and Two trace the sequence of events in a typical financial crisis; the dotted arrows show the additional set of events that occur if the crisis develops into a debt deflation, Stage Three in our discussion.

Stage One: Initiation

Financial crisis can begin in several ways:

1. mismanagement of financial liberalization or innovation
2. asset price booms and busts
3. a general increase in uncertainty caused by failures of major financial institutions

Stage One: Initiation

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

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

Stage One: Initiation

2. A financial crisis can also begin with an **asset pricing boom and bust**:

- A pricing bubble starts, where asset values exceed their fundamental prices.
- 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

3. Finally, a financial crisis can begin with a **spike in interest rates** or an **increase in uncertainty**:

- Many 19th century crises initiated with a spike in rates, due to a liquidity problems or panics
- Moral hazard also increases as loan repayment becomes more uncertain
- Other periods of high uncertainty can lead to crises, such as stock market crashes or the failure of a major financial institution

Stage Two: Banking Crisis

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

- As cash balances fall, FIs must sell assets quickly, further deteriorating their balance sheet
- Bank run

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, increases debt burdens.

- Debt levels are typically fixed, not indexed to asset values
- Price level drops lead to an increase in adverse selection and moral hazard, which is followed by decreased lending
- Economic activity remains depressed for a long time.

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 led to a collapse of more than 60% in October of 1929.
- By 1932, unemployment had reached 23.6%, and it peaked in early 1933 at 25%, drought persisted in the agricultural heartland, businesses and families defaulted on record numbers of loans, and more than 5,000 banks had failed.
- Between 1930 and 1933, one-third of U.S. banks went out of business as agricultural shocks led to bank failures

Stock Market Prices During The Great Depression



FIGURE 8.2 Stock Price Data During the Great Depression Period

Stock prices crashed in 1929, falling by more than 60%, and then continued to fall to only 10% of their peak value by 1932.

Source: Dow-Jones Industrial Average (DJIA), <http://lib.stat.cmu.edu/datasets/djdc0093>.

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.
- Credit spreads increased from 2% to nearly 8% during the height of the Depression.

Credit Spreads During The Great Depression

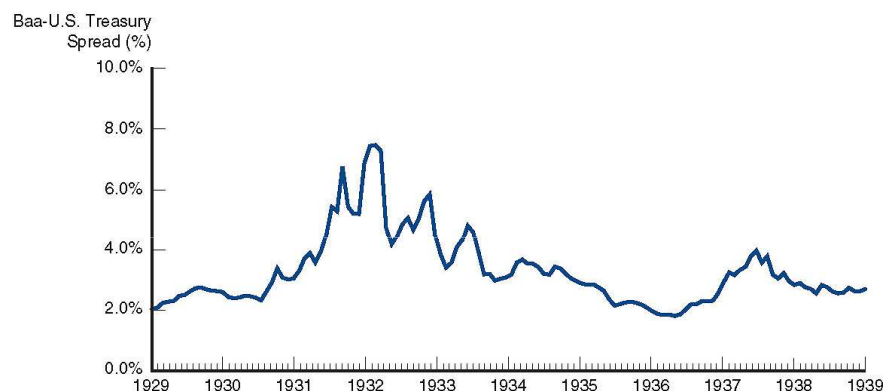


FIGURE 8.3 Credit Spreads During the Great Depression

Credit spreads (the difference between rates on Baa corporate bonds and U.S. Treasury bonds) rose sharply 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 led to a 25% decline in price levels.
- The prolonged economic contraction led 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 2007–2009 Financial Crisis

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

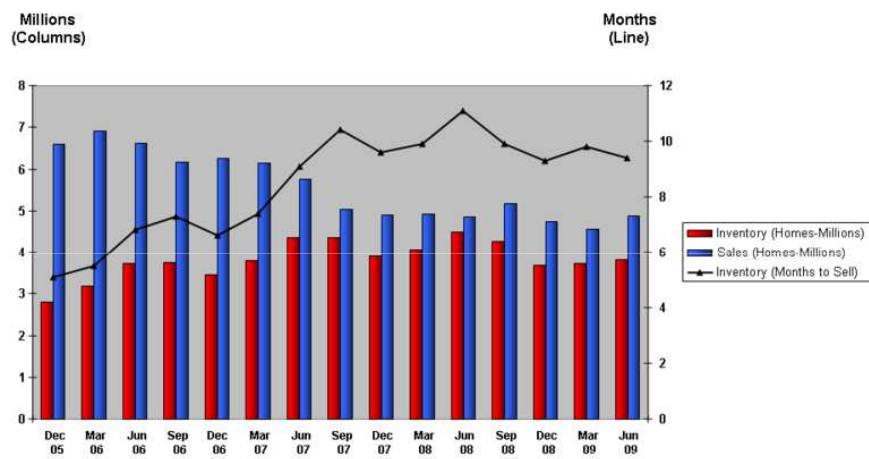
- financial innovation in mortgage markets
- agency problems in mortgage markets
- the role of asymmetric information in the credit rating process

Case: The 2007–2009 Financial Crisis

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

U.S. Existing Home Sales, Inventory, and Months Supply
December 2005 – June 2009



Each inventory figure (red or first column) represents the number of homes for sale at a point in time.
Each sales figure (blue or second column) is annualized based on the most recent month's rate of sale.
The inventory months to sell (black line) is how many months it would take to sell the existing inventory most recent sales rate.

Source Data: National Association of Realtors (NAR)

Case: The 2007–2009 Financial Crisis

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 2007–2009 Financial Crisis

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 2007–2009 Financial Crisis

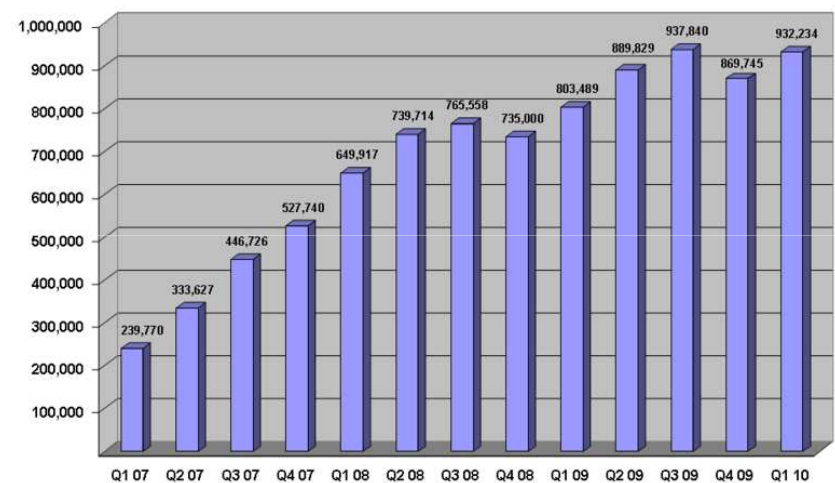
Many suffered as a result of the 2007–2009 financial crisis. We will look at five areas:

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

Case: The 2007–2009 Financial Crisis

- 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.

U.S. Properties with Foreclosure Activity



Source Data: RealtyTrac Press Releases of "U.S. Foreclosure Market Report"

Case: The 2007–2009 Financial Crisis

- 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: 2002–2010

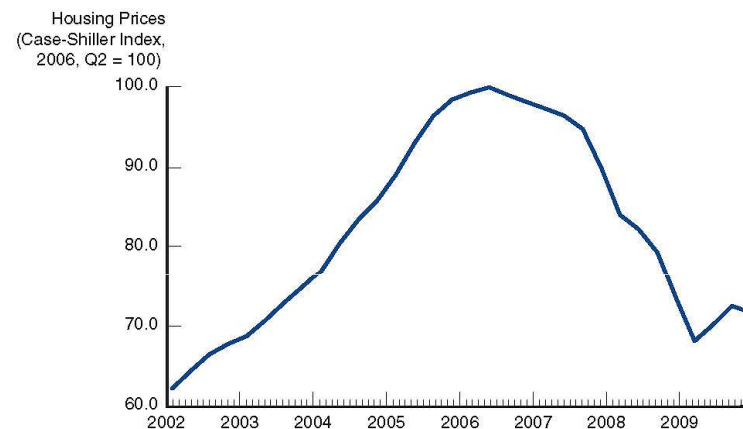


FIGURE 8.4 Housing Prices and the Financial Crisis of 2007–2009

Housing prices boomed from 2002 to 2006, but then fell by more than 25% subsequently.

Source: Adapted from Case-Shiller U.S. national composite house price index, available from http://www.macromarkets.com/csi_housing/index.asp.

Was the Fed to Blame for the Housing Price Bubble?

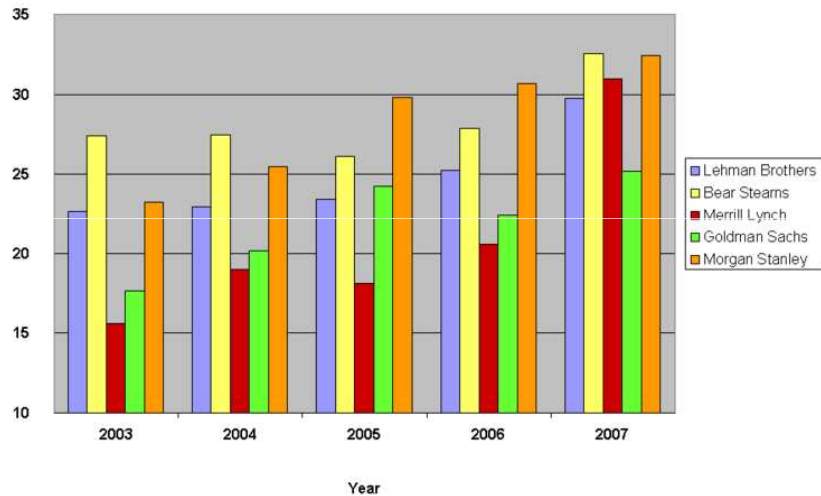
- Some argue that low interest rates from 2003 to 2006 fueled the housing bubble.
- In early 2009, Mr. Bernanke rebutted this argument. He argued rates were appropriate.
- He also pointed to new mortgage products, relaxed lending standards, and capital inflows as more likely causes.

Case: The 2007–2009 Financial Crisis

- 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

Leverage Ratios For Major Investment Banks

The leverage ratio is a measure of the risk taken by a firm; a higher ratio indicates more risk. It is calculated as total debt divided by stockholders equity. Each firm's ratio increased between 2003-2007.



Source Data: Company Annual Reports (SEC Form 10K)

Case: The 2007–2009 Financial Crisis

- The **shadow banking system** also experienced a run. These are the *hedge funds, investment banks*, and other liquidity providers in our financial system. When the short-term debt markets seized, so did the availability of credit to this system. This led to further “fire” sales of assets to meet higher credit standards

Case: The 2007–2009 Financial Crisis

- As seen on the next two slides, the fall in the stock market and the rise in credit spreads further weakened both firm and household balance sheets.
- Both consumption and real investment fell, causing a sharp contraction in the economy.

Stock Prices: 2002–2010

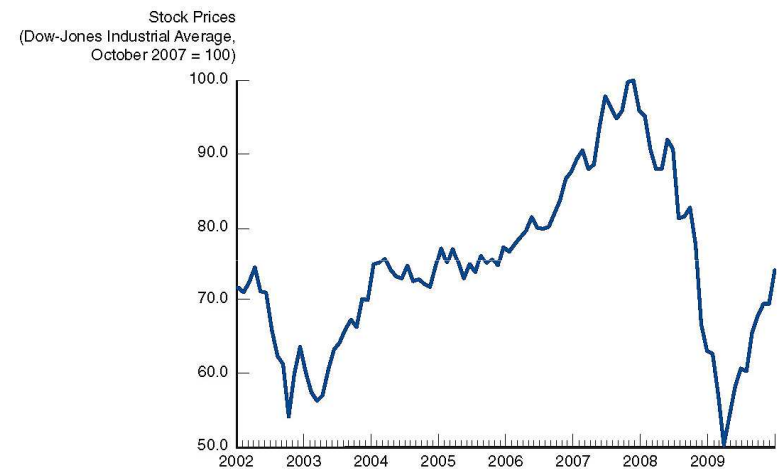


FIGURE 8.5 Stock Prices and the Financial Crisis of 2007–2009

Stock prices fell by 50% from October 2007 to March of 2009.

Source: Dow-Jones Industrial Average (DJIA), available at <http://finance.yahoo.com/q/hp?s=%5EDJI>.

Credit Spreads: 2002–2010

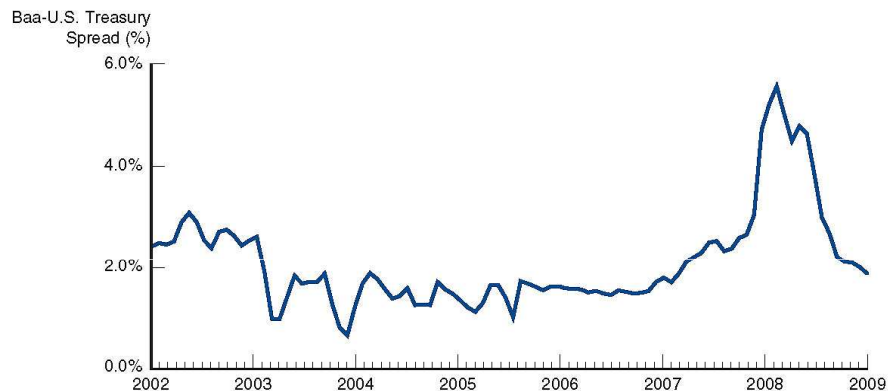


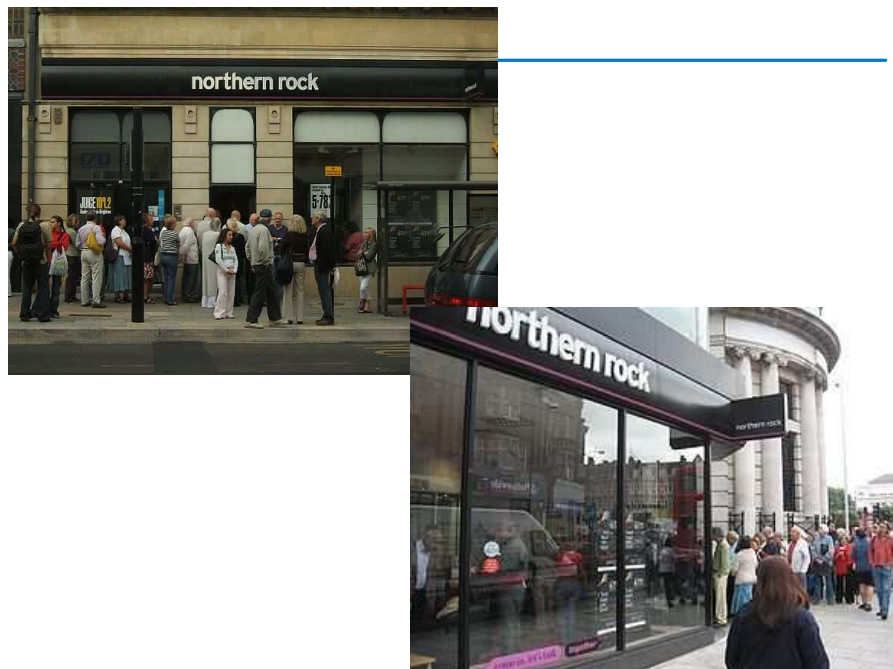
FIGURE 8.6 Credit Spreads and the 2007–2009 Financial Crisis

Credit spreads (the difference between rates on Baa corporate bonds and U.S. Treasury bonds) rose by more than 400 basis points (4 percentage points) during the crisis.

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

Case: The 2007–2009 Financial Crisis

- Europe was actually first to raise the alarm in the crisis. With the downgrade of \$10 billion in mortgage related products, short term money markets froze, and in August 2007, a French investment house suspended redemption of some of its money market funds. Banks and firms began to hoard cash.
- On 14 September 2007, the Northern Rock Bank (UK) sought and received a liquidity support facility from the Bank of England



Case: The 2007–2009 Financial Crisis

- The end of credit lead to several bank failures.
- Northern Rock was one of the first, relying on short-term credit markets for funding. Others soon followed.
- By most standards, Europe experienced a more severe downturn than the U.S.

Case: The 2007–2009 Financial Crisis

Finally, the collapse of several high-profile U.S. investment firms only further deteriorated confidence in the U.S.

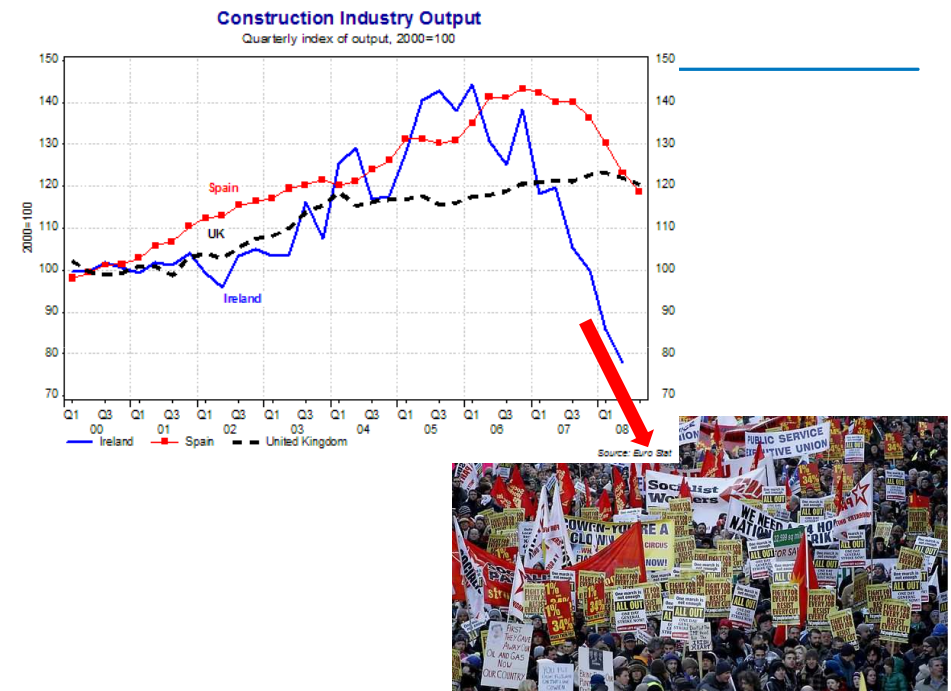
- March 2008: Bear Sterns fails and is sold to JP Morgan for 5% of its value only 1 year ago
- September 2008: both Freddie and Fannie put into conservatorship after heaving subprime losses.
- September 2008: Lehman Brothers files for bankruptcy. Merrill Lynch sold to Bank of America at “fire” sale prices. AIG also experiences a liquidity crisis.

Case: The 2007–2009 Financial Crisis

The crisis and impaired credit markets have caused the worst economic contraction since World War II. The fall in real GDP and increase in unemployment to over 10% in 2009 impacted almost everyone.

Global: Ireland and the 2007–2009 Financial Crisis

- From '95-'07, Ireland had a booming economy, with 6.3% average annual real GDP growth.
- But, rising real estate prices and a boom in mortgage lending were laying the groundwork for a recession.
- Housing prices doubled twice from 1995 to 2007, while construction was 13% of GDP
- House prices then fell by 20% in 2007



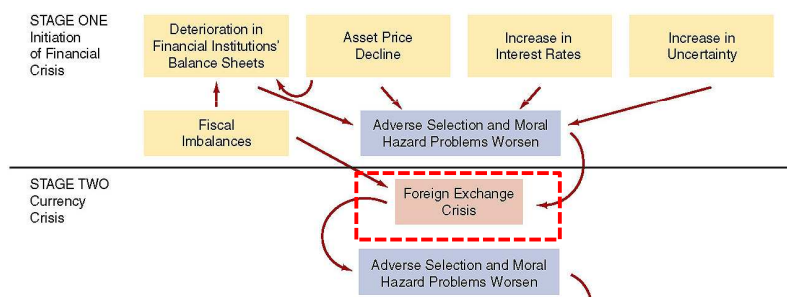
Global: Ireland and the 2007–2009 Financial Crisis

- Banks were hit hard, with high exposure to real estate and reliance on short-term funding from money markets
- The Irish government nationalized a large bank, and guaranteed all deposits in an effort to control the recession
- Unemployment rose from 4.5% to 12.5%
- GDP fell by more than 10%, and aggregate price levels fell
- Like the U.S., budget deficits rose, and tax increases followed to offset the increase in spending

Dynamics of Financial Crises in EMEs

- The dynamics of financial crises in emerging market economies have many of the same elements as those found in advanced countries like United States
- However, there are some important differences..

Emerging Market Financial Crisis: Sequence of Events (a)



Emerging Market Financial Crisis: Sequence of Events (b)

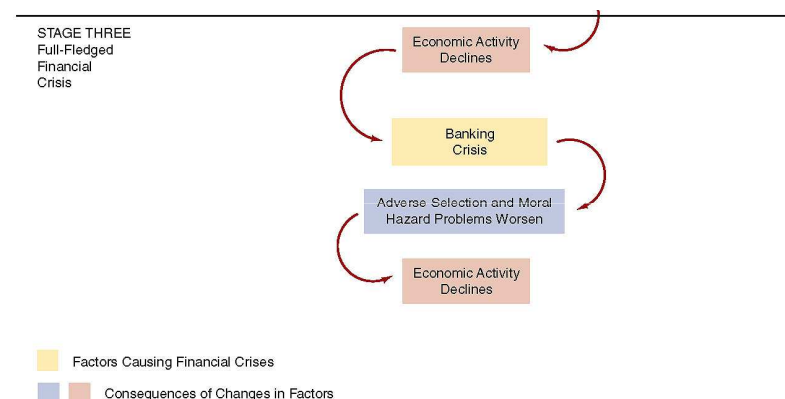


FIGURE 8.7 Sequence of Events in Emerging Market Financial Crises

The arrows trace the sequence of events during financial crises.

Stage One: Initiation

Financial crises in emerging market countries develop along two basic paths:

1. the mismanagement of financial liberalization or globalization
2. severe fiscal imbalances

Stage One: Initiation

Crisis initiation involving the mismanagement of financial liberalization or globalization usually proceeds as follows:

- The country often starts with a solid fiscal policy
- A weak credit culture and capital inflows exasperate the credit boom that follows liberalization, leading to risky lending
- High loan losses eventually materialize
- As bank balance sheets deteriorate, lending is cut back (more severe here since the rest of the economy is not as developed)
- A lending crash fully materializes

Stage One: Initiation

- Why does prudential regulation fail to stem a banking crisis? Is this different than the U.S. and other developed economies?
- The story is similar to the U.S., with various interests trying to prevent regulators from doing their jobs. However, in developing economies, these interest (business) probably have more power.

Stage One: Initiation

Crisis initiation can also involve severe fiscal imbalances:

- The government faces a large deficit and either cajoles or forces banks to buy gov't bonds
- If confidence falls, the gov't bonds are sold by investors, leading to a price decline
- As a result, bank balance sheets deteriorate, and the usual lending freeze follows

Stage One: Initiation

Crisis initiation can also involve other factors:

- A rise in rates in developed economies can spill over into risk taking in developing countries (e.g., the Mexican crisis)
- Asset price declines are less severe, but certainly increase problems
- Unstable political systems create high levels of uncertainty, increasing agency conflicts

Stage Two: Currency Crisis

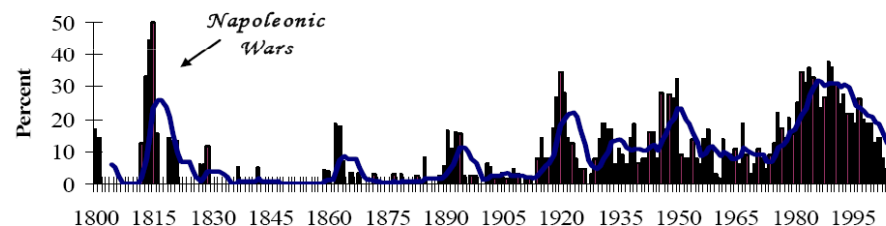
The FX markets will soon start taking bets on the depreciation of the currency of the emerging market, in what is called a **speculative attack**.

Over supply begins, the value of the currency falls, and a currency crisis ensues.

Stage Two: Currency Crisis

- The government can attempt to **defend the home currency by raising interest rates**. That should encourage capital inflows. However, banks must pay more to obtain funds, decreasing bank profitability, which may lead to insolvency.
- Speculators in the FX market know this. → Mass sell-offs of the currency continue.
- The currency crisis can also result from a large fiscal imbalance. If investors in a country's debt suspect its inability to repay the loans, sell-offs will occur. This is accompanied by selling the domestic currency, again leading to a speculative attack on the currency.

Currency Crashes: Share of Countries with an Annual Depreciation Greater than 15 Percent: 1800-2006



Stage Three: Full Financial Crisis

- Many emerging market firm denominate their debt in U.S. dollars or yen. An unexpected currency devaluation increases their debt burden, leading to a decline in their net worth.
- This crisis, along with the currency crisis, leads the country into a full-fledged financial crisis.

Stage Three: Full Financial Crisis

- The currency collapse can also lead to higher inflation. The increase in interest rates again leads to lower firm cash flows and increased agency problems.
- Bank losses are inevitable as debtors are no longer able to meet interest obligations. Banks will likely fail as well.

Stage Three: Full Financial Crisis

With this framework in mind, we now turn to three actual financial crises in emerging economies:

- Mexico, 1994–1995
- East Asia, 1997–1998
- Argentina, 2001–2002

Case: Financial Crises in Emerging Market Countries

Mexico, East Asia, and Argentina

- The three countries show how a country can shift from a path of high growth just before a financial crises.
- An important factor was the deterioration in banks' balance sheets due to increasing loan losses.

Case: Financial Crises in Emerging Market Countries

- The Mexican and Argentine crises were also preceded by rising international interest rates. This led to increased rates in these countries, and an accompanying increase in information problems. Stock market declines were also in the mix; although in Asia, it occurred simultaneously instead of before the crisis.

Case: Financial Crises in Emerging Market Countries

- Argentina was particularly interesting. It had a well-supervised banking system (unlike Mexico and East Asia). The fiscal problems of the government weakened the banking system balance sheet when the government forced banks to take on gov't debt. Confidence in the government failed, and the banks' debt values (assets) fell dramatically.

Case: Financial Crises in Emerging Market Countries

- Full-blown speculative attacks developed in the foreign exchange for each of these countries:
 - Mexico tried to intervene by raising interest rates, but was forced to devalue the peso
 - The speculative attack on the baht successfully led to its devaluation on 2 July 1997 from 25 bt/usd to 52 bt/usd.
- Foreign denominated debt worsened the situation. And a rise in inflation played out as we described.

Case: Financial Crises in Emerging Market Countries

The institutional structure of debt markets in Mexico and East Asia interacted with the currency devaluations to propel the economies into full-fledged financial crises. This negative shock was especially severe for Indonesia and Argentina, which saw the value of their currencies fall by more than 70%!

Case: Financial Crises in Emerging Market Countries

The sharp decline in lending helped lead to a collapse of economic activity, with real GDP growth falling sharply. Further deterioration in the economy occurred because the collapse in economic activity and the deterioration in the cash flow and balance sheets of both firms and households worsened banking crises.

Case: Financial Crises in Emerging Market Countries

- Mexico began to recover in 1996
- The crisis countries in East Asia tentatively began their recovery in 1999, with a stronger recovery later.
- Argentina was still in a severe depression in 2003, but subsequently the economy bounced back

WHAT DOES A FINANCIAL SYSTEM DO?

Fruit for Thoughts

- Suppose you want to start a business manufacturing a household cleaning robot, but you have no funds.
- At the same time, Benjarong has money he wishes to invest for his retirement.
- If the two of you could get together, perhaps both of your needs can be met. But how does that happen?

Financial Markets Funds Transferees

- Channels funds from person or business without investment opportunities (i.e., “Lender-Savers”) to one who has them (i.e., “Borrower-Spenders”)

Lender-Savers

1. Households
2. Business firms
3. Government
4. Foreigners

Borrower-Spenders

1. Business firms
2. Government
3. Households
4. Foreigners

Segments of Financial Markets

1. Direct Finance

- Borrowers borrow directly from lenders** in financial markets by selling financial instruments which are claims on the borrower’s future income or assets

2. Indirect Finance

- Borrowers borrow indirectly from lenders via financial intermediaries** (established to source both loanable funds and loan opportunities) by issuing financial instruments which are claims on the borrower’s future income or assets

Function of Financial Markets

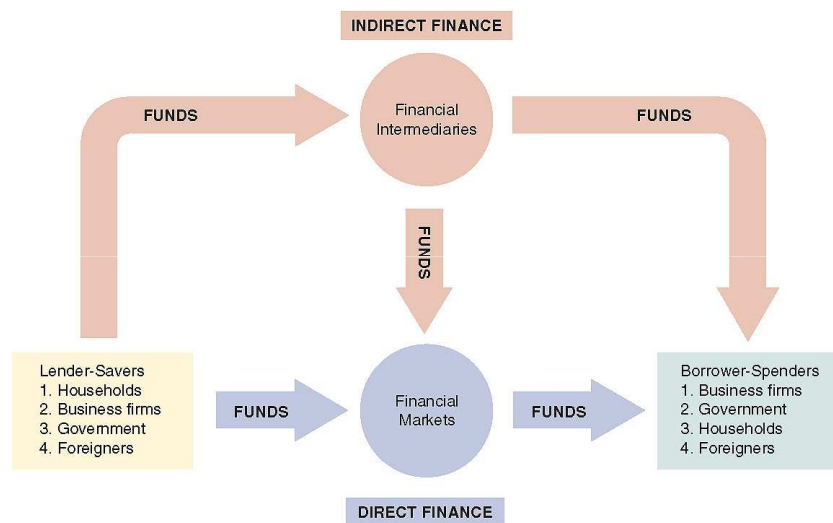


FIGURE 2.1 Flows of Funds Through the Financial System

Importance of Financial Markets

- This is important. For example, if you save \$1,000, but there are no financial markets, then you can earn no return on this—might as well put the money under your mattress or in a jar.
- However, if a carpenter could use that money to buy a new saw (increasing her productivity), then she’d be willing to pay you some interest for the use of the funds.

Importance of Financial Markets

- Financial markets are critical for producing an efficient allocation of capital, allowing funds to move from people who lack productive investment opportunities to people who have them.
- Financial markets also improve the well-being of consumers, allowing them to time their purchases better.

Structure of Financial Markets

1. Debt Markets

- Short-Term (maturity < 1 year)
- Long-Term (maturity > 10 year)
- Intermediate term (maturity in-between)
- Represented \$52.4 trillion at the end of 2009.

2. Equity Markets

- Pay dividends, in theory forever
- Represents an ownership claim in the firm
- Total value of all U.S. equity was \$20.5 trillion at the end of 2009.

Structure of Financial Markets

1. Primary Market

- New security issues sold to initial buyers
- Typically involves an investment bank who underwrites the offering

2. Secondary Market

- Securities previously issued are bought and sold
- Examples include the NYSE and Nasdaq
- Involves both brokers and dealers (do you know the difference?)

Structure of Financial Markets

Even though firms don't get any money, per se, from the secondary market, it serves two important functions:

- Provide liquidity, making it easy to buy and sell the securities of the companies
- Establish a price for the securities

We can further classify secondary markets as follows:

1. Exchanges

- Trades conducted in central locations (e.g., New York Stock Exchange, SET, Chicago Board of Trade)

2. Over-the-Counter Markets

- Dealers at different locations buy and sell
- Financial Institutions and Hedging derivatives

Classifications of Financial Markets

We can also further classify markets by the maturity of the securities:

1. Money Market: Short-Term
(maturity < 1 year)

2. Capital Market: Long-Term
(maturity > 1 year) plus equities

Internationalization of Financial Markets

The internationalization of markets is an important trend.
The U.S. no longer dominates the world stage.

International Bond Market & Eurobonds

Foreign bonds

- A bond that is issued in a domestic market by a foreign entity, in the domestic market's currency

Eurobonds

- Denominated in one currency, but sold in a different market
- now larger than U.S. corporate bond market
- Over 80% of new bonds are Eurobonds.

Eurocurrency Market

- Foreign currency deposited outside of home country
- Eurodollars are U.S. dollars deposited, say, London or Bangkok.
- Gives U.S. borrows an alternative source for dollars.

World Stock Markets

- U.S. stock markets are no longer always the largest—at one point, Japan's was larger

FOLLOWING THE FINANCIAL NEWS

Foreign Stock Market Indexes

Foreign stock market indexes are published daily in the Wall Street Journal in the "Money and Investing" section of the paper.

Region/Country	Index	Close	Net chg	% Chg	YTD % Chg
World	The Global Dow	1004.04	-26.17	-1.43	-9.1
	DJ Global Index	213.73	-3.70	-1.70	-5.8
	DJ Global ex U.S.	180.48	-4.71	-2.54	-10.2
	MSCI EAFE*	1374.39	-33.83	-2.40	-13.1
Americas	DJ Americas	295.30	-2.82	-0.95	-0.4
Brazil	Sao Paulo Bovespa	59689.32	-1151.76	-1.89	-13.0
Canada	S&P/TSX Comp	11665.77	-98.74	-0.84	-0.7
Mexico	IPC All-Share	30992.76	-143.59	-0.46	-3.5
Venezuela	Caracas General	61099.59	363.01	0.59	12.4
Europe	Stoxx Europe 600	243.71	-7.59	-3.02	-3.7
Euro zone	Euro Stoxx	250.45	-7.31	-2.84	-8.9
Belgium	Bel-20	2432.85	-52.39	-2.11	-3.1
France	CAC 40	3511.67	-105.65	-2.92	-10.8
Germany	DAX	5988.67	-167.26	-2.72	-0.5
Israel	Tel Aviv	1131.26	-	-	-1.2
Italy	FTSE MIB	19612.66	-701.55	-3.45	-15.6
Netherlands	AEX	321.45	-9.55	-2.89	-4.1
Spain	IBEX 35	9376.5	-251.10	-2.61	-21.5
Sweden	SX All Share	305.17	-9.36	-2.98	1.9
Switzerland	Swiss Market	6374.43	-96.41	-1.49	-2.6
U.K.	FTSE 100	5158.06	-149.26	-2.81	-4.7
Asia-Pacific	DJ Asia-Pacific	118.10	-1.77	-1.48	-4.0
Australia	S&P/ASX 200	4387.10	-83.65	-1.87	-9.9
China	Shanghai Composite	2587.81	-6.98	-0.27	-21.0
Hong Kong	Hang Seng	19578.98	-365.96	-1.83	-10.5
India	Bombay Sensex	16408.49	-467.27	-2.77	-6.0
Japan	Nikkei Stock Avg	10186.84	-55.80	-0.54	-3.4
Singapore	Straits Times	2774.54	-69.81	-2.45	-4.2
South Korea	Kospi	1630.08	-13.16	-0.80	-3.1
Taiwan	Weighted	7559.16	-26.14	-0.34	-7.7

*Europe, Australia, Far East, U.S.-dollar terms. Sources: Thomson Reuters; WSJ Market Data Group

The first two columns identify the region/country and the market index; for example, the colored entry is for the DAX index for Germany. The third column, "CLOSE," gives the closing value of the index, which was 5988.67 for the DAX on May 20, 2010. The "NET CHG" column indicates the change in the index from the previous trading day, -167.26, and the "% CHG" column indicates the percentage change in the index, -2.72. The next column indicates the year-to-date percentage change of the index (0.5%).

Source: Wall Street Journal, May 20, 2010, p. C2. THE WALL STREET JOURNAL. Copyright 2010 by DOW JONES & COMPANY, INC. Reproduced with permission of DOW JONES & COMPANY, INC., via Copyright Clearance Center.

Function of Financial Intermediaries: Indirect Finance

We now turn our attention to the top part of Figure 2.1—indirect finance.

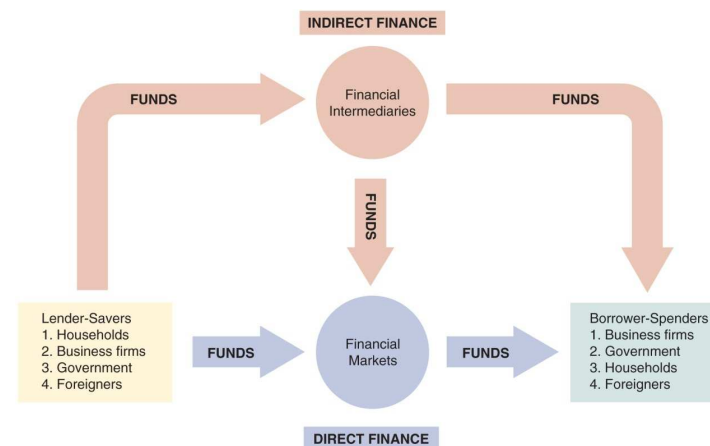
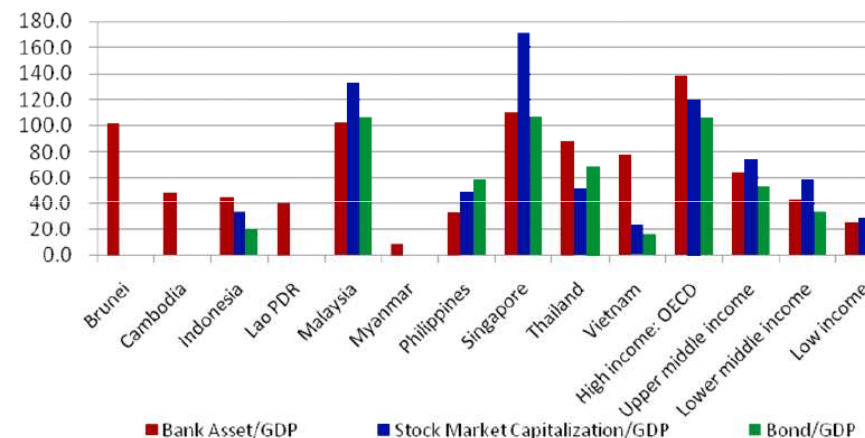


FIGURE 2.1 Flows of Funds Through the Financial System

Function of Financial Intermediaries: Indirect Finance

- This process, called financial intermediation, is actually the primary means of moving funds from lenders to borrowers.
- More important source of finance than securities markets (such as stocks)
- Needed because of transactions costs, risk sharing, and asymmetric information

b. Financial assets by market



Function of Financial Intermediaries: Indirect Finance

- Transactions Costs
 1. Financial intermediaries make profits by reducing transactions costs
 2. Reduce transactions costs by developing expertise and taking advantage of economies of scale

Function of Financial Intermediaries: Indirect Finance

- A financial intermediary's low transaction costs mean that it can provide its customers with **liquidity services**, services that make it easier for customers to conduct transactions
 1. Banks provide depositors with checking accounts that enable them to pay their bills easily
 2. Depositors can earn interest on checking and savings accounts and yet still convert them into goods and services whenever necessary

Global Perspective

- Studies show that firms in the U.S., Canada, the U.K., and other developed nations (also in Thailand) usually obtain funds from financial intermediaries, not directly from capital markets.
- In Germany and Japan, financing from financial intermediaries exceeds capital market financing 10-fold.
- However, the relative use of bonds versus equity does differ by country.

Function of Financial Intermediaries: Indirect Finance

- Another benefit made possible by the FI's low transaction costs is that they can help reduce the exposure of investors to risk, through a process known as **risk sharing**
 - FIs create and sell assets with lesser risk to one party in order to buy assets with greater risk from another party
 - This process is referred to as **asset transformation**, because in a sense risky assets are turned into safer assets for investors

Function of Financial Intermediaries: Indirect Finance

- Financial intermediaries also help by providing the means for individuals and businesses to **diversify** their asset holdings.
- Low transaction costs allow them to buy a range of assets, pool them, and then sell rights to the diversified pool to individuals.

Function of Financial Intermediaries: Asymmetric Info

- Another reason FIs exist is to reduce the impact of **asymmetric information**.
- One party lacks crucial information about another party, impacting decision-making.
- We usually discuss this problem along two fronts: adverse selection and moral hazard.

Asymmetric Information: Adverse Selection

- Adverse Selection
 1. Before transaction occurs
 2. Potential borrowers most likely to produce adverse outcome are ones most likely to seek a loan
 3. Similar problems occur with insurance where unhealthy people want their known medical problems covered

Asymmetric Information: Moral Hazard

- Moral Hazard
 1. After transaction occurs
 2. Hazard that borrower has incentives to engage in undesirable (immoral) activities making it more likely that won't pay loan back
 3. Again, with insurance, people may engage in risky activities only after being insured
 4. Another view is a **conflict of interest**

Types of Financial Intermediaries

Commercial Banks:

Registered in Thailand (16)
Foreign Bank Branches (15)

Specialized Financial Institutions (6):

Government Saving Bank
Government Housing Bank
Islamic Bank (i-Bank)
Bank of Agriculture and Agricultural Cooperatives
SME Bank
EXIM Bank

Non-bank Financial Institutions

Securities
Mutual Funds
Investment Banks
Consumer Finance
Insurance

Types of Financial Intermediaries

- Commercial banks
 - Raise funds primarily by issuing checkable, savings, and time deposits which are used to make commercial, consumer and mortgage loans
 - Collectively, these banks comprise the largest financial intermediary and have the most diversified asset portfolios
- Non-Bank Consumer Finance Companies sell commercial paper (a short-term debt instrument) and issue bonds and stocks to raise funds to lend to consumers to buy durable goods, and to small businesses for operations
- Mutual Funds/Asset Management Companies acquire funds by selling shares to individual investors (many of whose shares are held in retirement accounts) and use the proceeds to purchase large, diversified portfolios of stocks and bonds
- Investment Banks advise companies on securities to issue, underwriting security offerings, offer M&A assistance, and act as dealers in security markets.

Regulatory Agencies

- BOT: regulate commercial banks and financial institutions, also supervise SFIs.
- Ministry of Finance regulates SFIs.
- DPA is a mandatory insurance for all CBs.
- SEC: regulate activities capital and derivative markets
- OIC (Office of Insurance Commission): regulate insurance issuance and companies.
- Government Pension Funds collect government's pension periodically and invest in capital markets.

Regulation of Financial Markets

Main Reasons for Regulation

1. Increase Information to Investors to reduce asymmetric information
2. Ensure the Soundness of Financial Intermediaries by monitor and control risks
3. Set directions for financial market development
 1. Financial Market Master Plan II
 2. Capital Market Development Plan

Deposit Insurance

- The government can insure people depositors to a financial intermediary from any financial loss if the financial intermediary should fail
- The Deposit Protection Agency (DPA) insures each depositor at a commercial bank or mutual savings bank up to a loss of 50 million baht per person per bank and will be lowered to 1 million baht per person per bank in August 2012.

Limits on Competition

- Although the evidence that unbridled competition among financial intermediaries promotes failures that will harm the public is extremely weak, it has not stopped the state and federal governments from imposing many restrictive regulations
- Competition has also been inhibited by regulations that impose restrictions on interest rates that can be paid on deposits
- These regulations were instituted because of the widespread belief that unrestricted interest-rate competition helped encourage bank failures during the Great Depression
- Later evidence does not seem to support this view, and restrictions on interest rates have been abolished