Mishkin Chapter 8

An Economic Analysis of Financial Structure (pp. 168-192)

Modified & Extended Mishkin Notes

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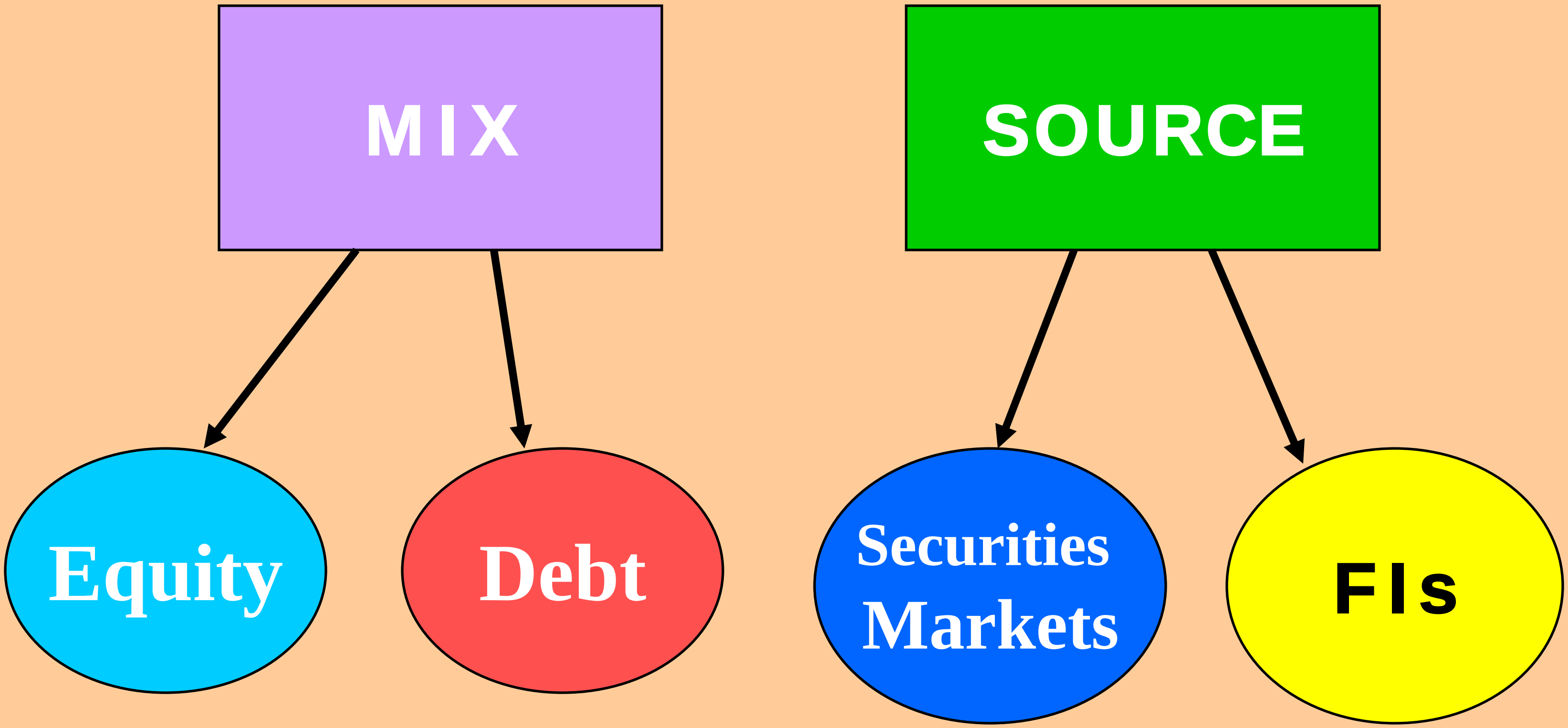
Key In-Class Discussion Questions

- What basic “stylized facts” characterize the current U.S. financial system?
- Do transactions costs and asymmetric information help to explain these stylized facts?
- **Enron Case Study (Mishkin p. 177, and online html notes “Enron Scandal & Moral Hazard”):** In what ways (if any) are asymmetric information problems in securities markets exemplified by the Enron bankruptcy scandal?

Financial Structure

Manner in which firms finance their activities using **external** funds.



External Finance Sources 1970-2000

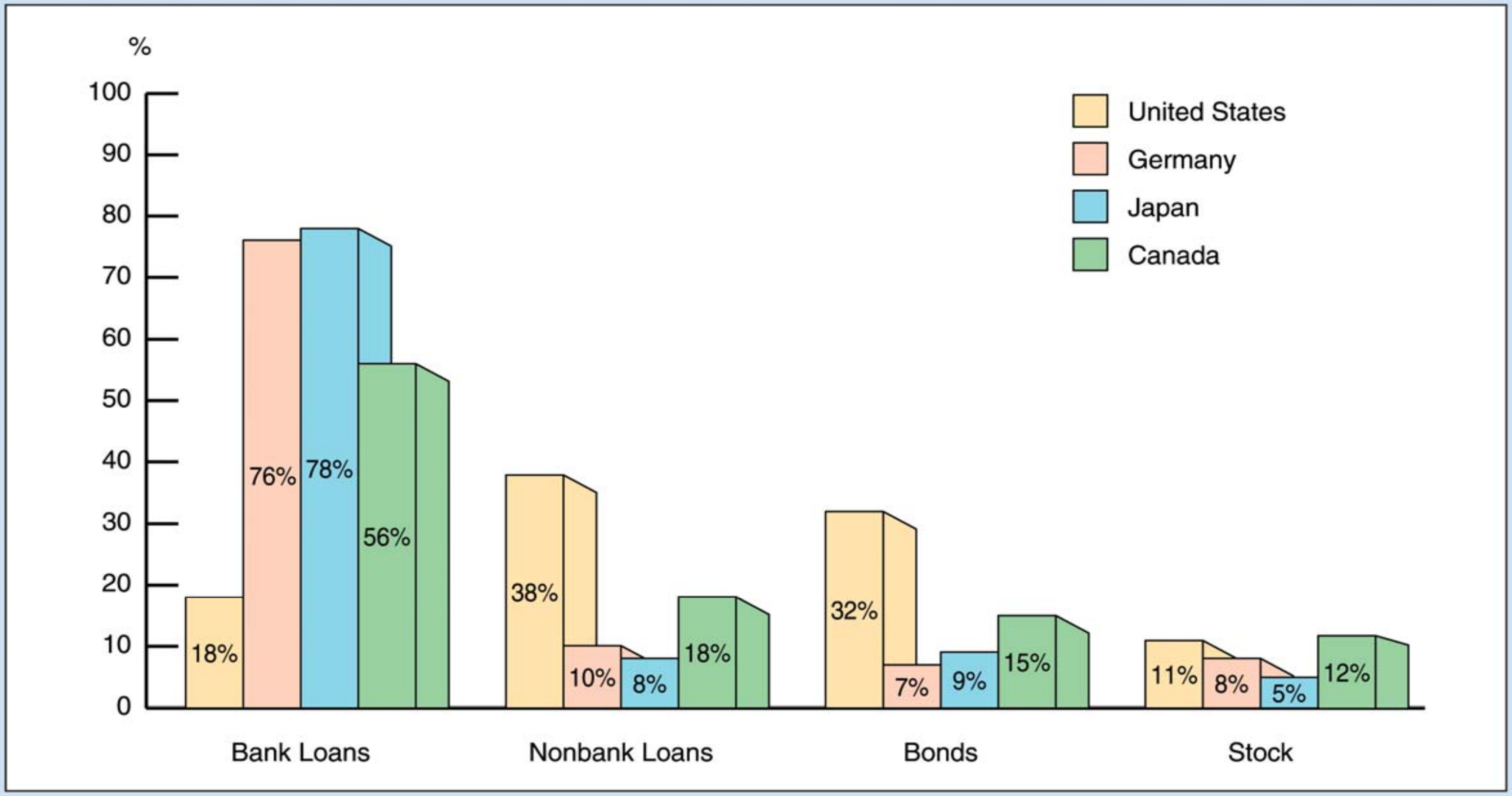
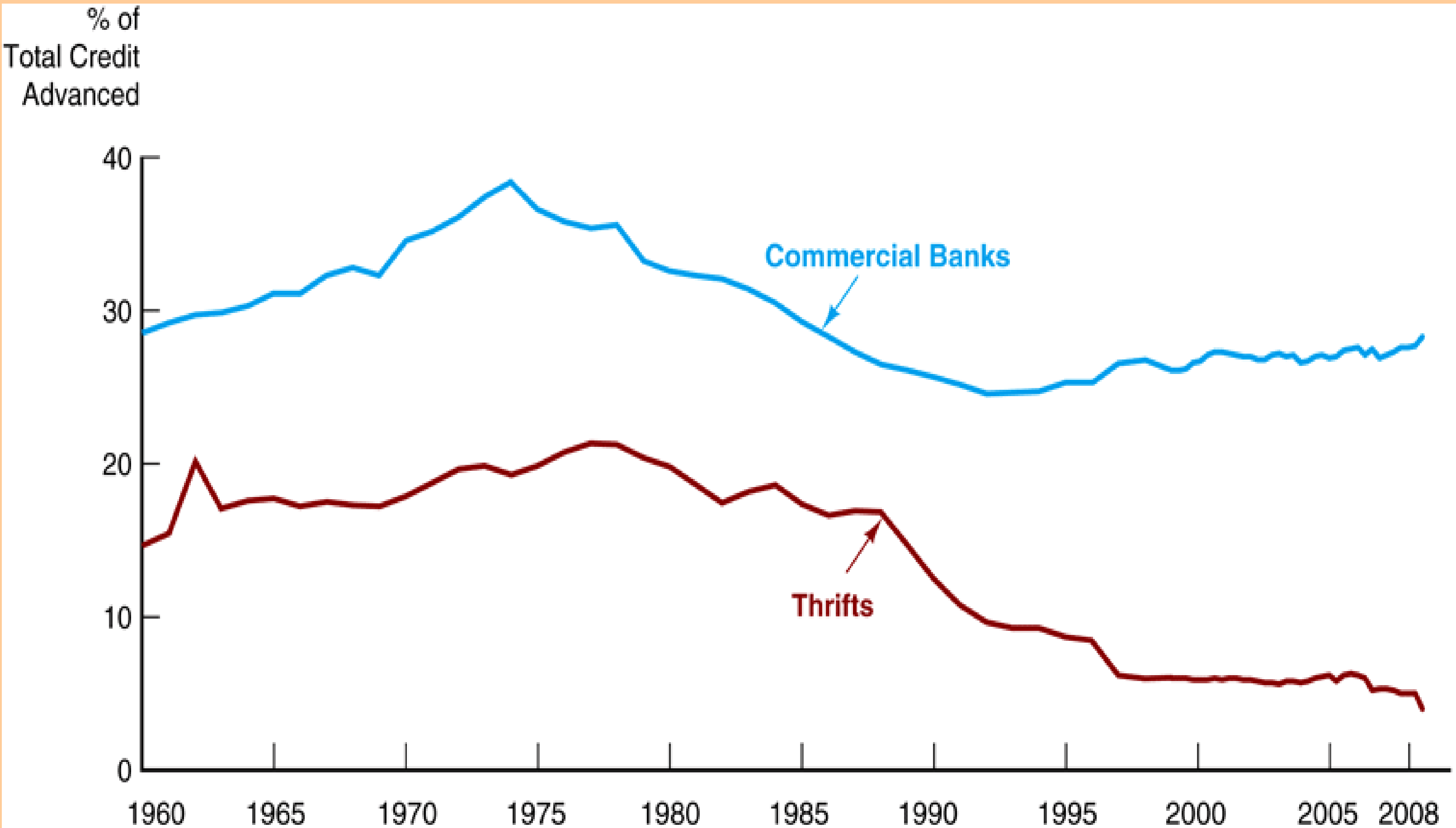


FIGURE 1 **Sources of External Funds for Nonfinancial Businesses: A Comparison of the United States with Germany, Japan, and Canada**

Source: Andreas Hackethal and Reinhard H. Schmidt, "Financing Patterns: Measurement Concepts and Empirical Results," Johann Wolfgang Goethe-Universitat Working Paper No. 125, January 2004. The data are from 1970–2000 and are gross flows as percentage of the total, not including trade and other credit data, which are not available.

The Decline of Banks as a Source of External Finance (Mishkin 12, Fig 2, p. 287)



Source: **Federal Reserve Flow of Funds Accounts; Federal Reserve Bulletin.**

One reason for the decline…the U.S. savings & loan crisis in the 1980s

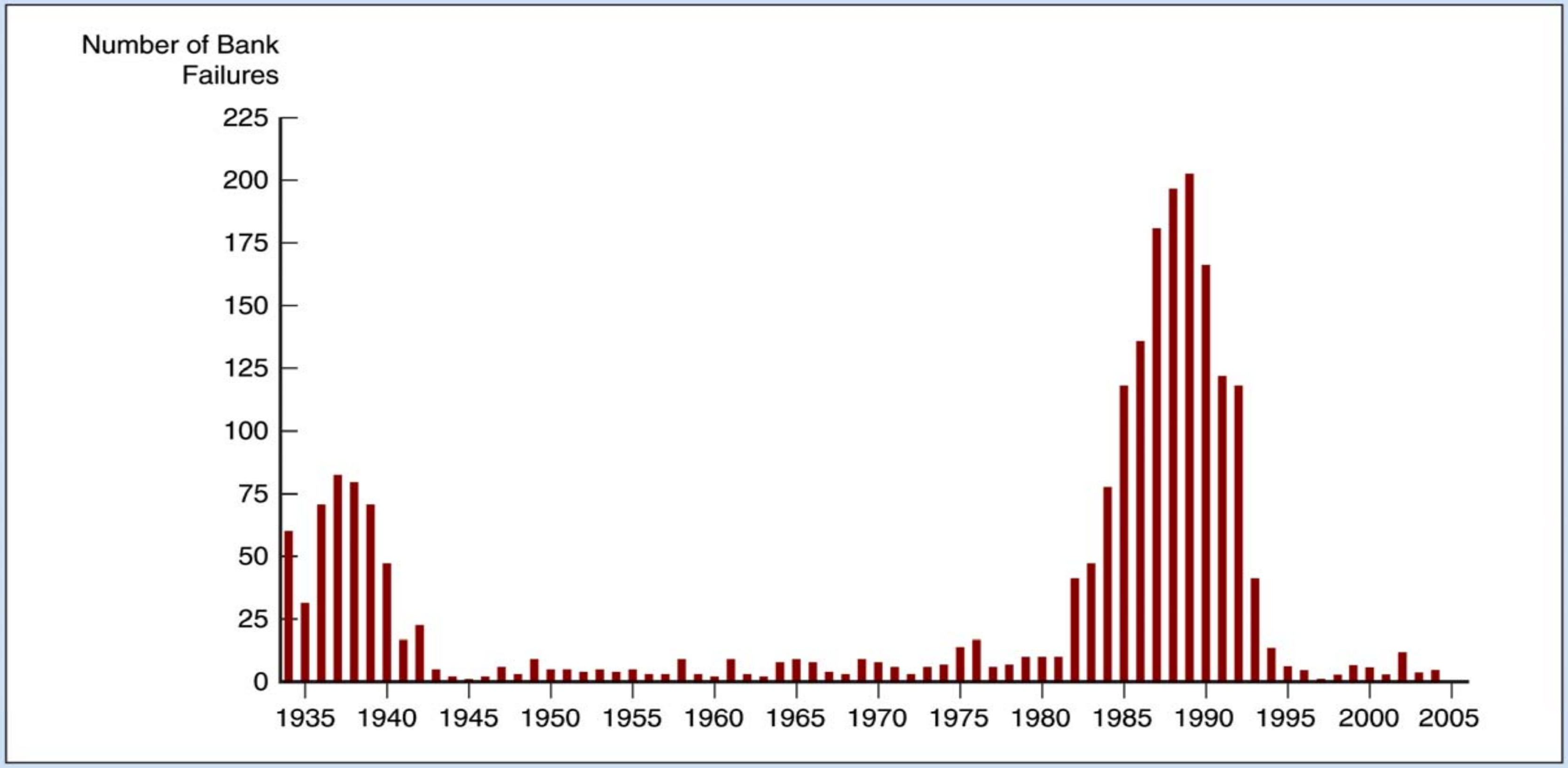


FIGURE 1 **Bank Failures in the United States, 1934–2005**

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

Mishkin Chapter 11, Figure 1

Recent Trends

- *Decreasing role for banks* in supplying loans to U.S. firms.
- *Competing financial institutions* now offering traditional banking services (e.g., Merrill Lynch)
- *Growing use of securities markets* (e.g., corporate bond issue), especially by large corporations.
- *Loans → Securities*. **Securitization** = Previously illiquid loans (e.g., mortgages) are increasingly being bundled together and turned into publicly marketable securities in standardized amounts.

Recent Trends… Continued

- ***Nevertheless***, banks continue to perform a critical function for external finance: namely, **liquidity insurance** for large corporations.
  - Lines of credit to large corporations to help insure them against market shocks.
  - Banks are better equipped for this than other types of FIs.
  - Flow of funds into bank deposit accounts (“safe havens”) tends to *increase* when negative economic shocks occur.
  - So bank funds available for lines of credit tend to increase when shocks occur.

U.S. Summary Data: External Finance Mix and Source Over 1970-2000

- **Regarding Mix:**
  Debt ≈ 89 %
  Equity ≈ 11 %

- **Regarding Source:**
  Securities Markets ≈ 43 %
  Financial Intermediaries ≈ 57 %

Note: There is some controversy regarding the interpretation of this data. See Mishkin, Chapter 8, p. 170, footnote 1.

Eight Puzzles: World Financial Structure

1. **Stocks** *not* most important source of business external finance.

2. **Security issues (bonds, stocks)** *not* most important source of business external finance.

3. **Indirect finance (financial intermediation)** *much more* important than direct finance as source of external funding.

4. **Loans (from bank and non-bank FIs)** are the *most important source* of external finance.

Eight Puzzles… Continued

5. **Financial system** is among the *most heavily regulated* sectors of an economy.

6. Only **large well-established corporations** have easy *access* to securities markets to finance their activities.

7. **Collateral** is a *prevalent* feature of debt contracts for both households and businesses.

8. **Debt contracts** typically are extremely *complicated* legal documents with restrictive covenants that constrain behavior of borrowers.

Mishkin's Answers to Eight Puzzles

Transactions Costs
(Costs of Organizing Production)

Explains → **Puzzle 3 Importance of Indirect Finance**

Information Costs
(Costs of Reducing Moral Hazard and Adverse Selection)

Explains → **All Eight Puzzles**

Three Distinct Types of Costs Associated with Loan Contracts

(1) What "production costs" are associated with external financing via loan contracts?

External Financing as a *Production Process:*

Borrowed Funds → Returns from Borrowing

(**"direct inputs to production"**) (**"output"**)

Production Costs of External Financing

= Costs of securing "direct inputs to production"

= Principal plus interest payments

Three Types of Costs… Continued

(2) Transactions Costs

Production Process:

Borrowed Funds → Returns from Borrowing
(**"Input"**) (**"Output"**)

Transaction Costs

= Costs of organizing production

= Search/match costs to bring together the borrower and lender
+
Costs of preparing loan contract

Three Types of Costs... Continued

(3) Information Costs

Production Process:

Borrowed Funds → Returns from Borrowing
("**Input**") ("**Output**")

Information Costs

= Costs of reducing adverse selection and/or moral hazard problems associated with the loan contract

(information gathering, monitoring, and contract enforcement)

Transaction Costs and Puzzle 3 (Importance of FIs)

- Transaction costs hinder flow of funds to people with productive investment opportunities

- FIs make profits by reducing transaction costs (***online html notes, pp. 4-5***)

  1. Specialize in matching borrowers and lenders

  2. Asset transformation → **Economies of scale**

  Example: Pooling funds into Mutual Funds

Explains Puzzle 3

Adverse Selection

Definition Review (cf. Mishkin, Chapter 2)

- A type of asymmetric info problem that arises for a potential buyer ***before*** a purchase occurs.

- Steps taken to protect against uncertain quality of what is being bought can result in ***lower*** average quality of the pool of items being offered for sale.

Example: Steps taken by lenders (buyers of loan contracts, bonds,...) to protect against poor quality borrowers can adversely affect quality of their loan applicant pools.

Adverse Selection Helps Explain Puzzles 1-7 (Online Html Notes, pp. 6-8)

"Lemons Problem" in Securities Markets

1. If can't distinguish between good and bad securities, willing to pay only average of good and bad securities' values.

2. ***Result:*** Good securities undervalued and firms won't issue them; bad securities overvalued, so too many issued.

3. Investors won't want to buy bad securities, so market won't function well (except for large well-known firms whose quality is known).

Explains Puzzle 1, Puzzle 2, and Puzzle 6

Tools to Help Solve Adverse Selection Problems in Financial Markets

1. **Private Production and Sale of Information**

   Free-rider problem interferes with this solution

2. **Government Regulation (e.g., SEC) to Increase Info**

   Explains Puzzle 5 (heavy regulation of financial sector)

3. **Financial Intermediation**

   A. Analogy to solution to lemons problem provided by used-car dealer - an **intermediary** between buyer/seller

   B. Financial intermediaries can specialize in information gathering about would-be borrowers

   Explains Puzzles 3 and 4 (Use of Indirect Fin/banks)

4. **Collateral and Net Worth as Quality Signals**

   Explains Puzzle 7 (prevalence of contract restrictions)

Moral Hazard

Definition Review (Mishkin, Chapter 2)

- A form of asymmetric info problem that arises for a buyer of a relational good ***after*** the purchase transaction occurs.
- Seller changes his/her behavior after purchase so that risk calculations used by the buyer to determine a "fair purchase price" no longer are accurate, and the seller's behavioral change is difficult for the buyer to observe.

Example: Lender (buyer) purchases bond from borrower (seller) thinking loan will be used for a relatively low risk investment**.**

A Special Type of Moral Hazard
(Cf. Online Html Notes, pp. 8-10)

Principal-Agent Problem:

1. Moral hazard problem that arises in stock markets due to separation of ownership by stockholders (principals) from control by managers (agents)

2. Managers might act in their own interest rather than in stockholders' interest

Moral Hazard and Puzzles (cf. Online Html Notes, pp. 8-10)

1. Monitoring difficult for stockholders; Debt contracts less prone to moral hazard since payments independent of profits **(Puzzle 1)**
2. Government regulation (e.g., SEC) helps to increase investor information **(Puzzle 5)**
3. Monitoring easier for FIs such as venture capital firms than for individual investors, and FIs can include restrictive covenants in loan contracts aimed at reducing moral hazard **(Puzs 1-4,7-8)**

Table 1 (Mishkin P. 186):
Asymmetric Information Problems and Tools to Solve Them

Asymmetric Information Problem	Tools to Solve It	Explains Fact Number
Adverse selection	Private production and sale of information	1, 2
	Government regulation to increase information	5
	Financial intermediation	3, 4, 6
	Collateral and net worth	7
Moral hazard in equity contracts (principal–agent problem)	Production of information: monitoring	1
	Government regulation to increase information	5
	Financial intermediation	3
	Debt contracts	1
Moral hazard in debt contracts	Collateral and net worth	6, 7
	Monitoring and enforcement of restrictive covenants	8
	Financial intermediation	3, 4

Note: List of facts:

1. Stocks are not the most important source of external financing.
2. Marketable securities are not the primary source of finance.
3. Indirect finance is more important than direct finance.
4. Banks are the most important source of external funds.
5. The financial system is heavily regulated.
6. Only large, well-established firms have access to securities markets.
7. Collateral is prevalent in debt contracts.
8. Debt contracts have numerous restrictive covenants.

Conflicts of Interest
(Cf. Mishkin pp. 189-190)

- Moral hazard problems can arise from **economies of scope –** the fact that the cost of info production for individual services is reduced by applying one info source to many services.
- In particular, moral hazard can arise when an institution performs multiple roles and conflicts arise between these roles.
- Conflicts of interest can lead institutions to conceal info or disseminate misleading info, reducing the quality of info in financial markets and increasing asymmetric info problems
- In this case, financial markets will not channel funds into productive investment opportunities as efficiently as they could.

Conflict of Interest Examples

- **Auditing and Consulting in Accounting Firms**
  - Auditors may be willing to skew their judgments and opinions to win consulting business
  - Auditors may be auditing information systems or tax and financial plans put in place by the consulting division of their own company!
  - Auditors may provide an overly favorable audit to solicit or retain audit business

Conflict of Interest Examples…Continued

- **Provision of both underwriting and research services by investment banks**
  - Investment banks research a company issuing securities for the benefit of potential investors. Incentive is to provide ***unbiased*** info.
  - But the investment bank also underwrites these same securities by purchasing and reselling them to investors on behalf of the issuing company. Incentive is to provide ***optimistic*** info to investors to increase resale price.
  - ***Spinning*** occurs when an investment bank allocates hot, but underpriced, IPOs to executives of other companies in return for their companies' future underwriting business

Conflict of Interest Remedies ?

- **Sarbanes-Oxley Act of 2002**
  - Increased the SEC’s budget to supervise security markets
  - Requires increased financial disclosure by corporations
  - Establishes a Public Company Accounting Oversight Board to supervise accounting firms
  - Requires separation of functions (research from underwriting, and auditing from nonaudit consulting)

Conflict of Interest Remedies…Cont'd

- **Sarbanes-Oxley Act of 2002 (cont'd)**
  - Beefs up criminal charges for white-collar crime and for obstruction of official investigations
  - Requires the CEO and CFO to certify that financial statements and disclosures are accurate
  - Requires members of the Audit Committee (subcommittee of a company's Board of Directors that oversees the company's audit) to be independent of the company they are auditing.

Conflict of Interest Remedies…Cont'd

- **Global Legal Settlement of 2002**
- Lawsuit brought by then-New York Attorney General Eliot Spitzer against 10 large investment banks (e.g., Merrill Lynch, J. P. Morgan, …) was settled on December 20, 2002:
  - Requires investment banks to sever the link between research and securities underwriting
  - Bans spinning
  - Imposed $1.4 billion in fines on accused investment banks
  - Requires investment banks to make their analysts' recommendations public
  - Over a 5-year period, investment banks are required to contract with at least 3 independent research firms for provision of research to their brokerage customers