Money and Banking

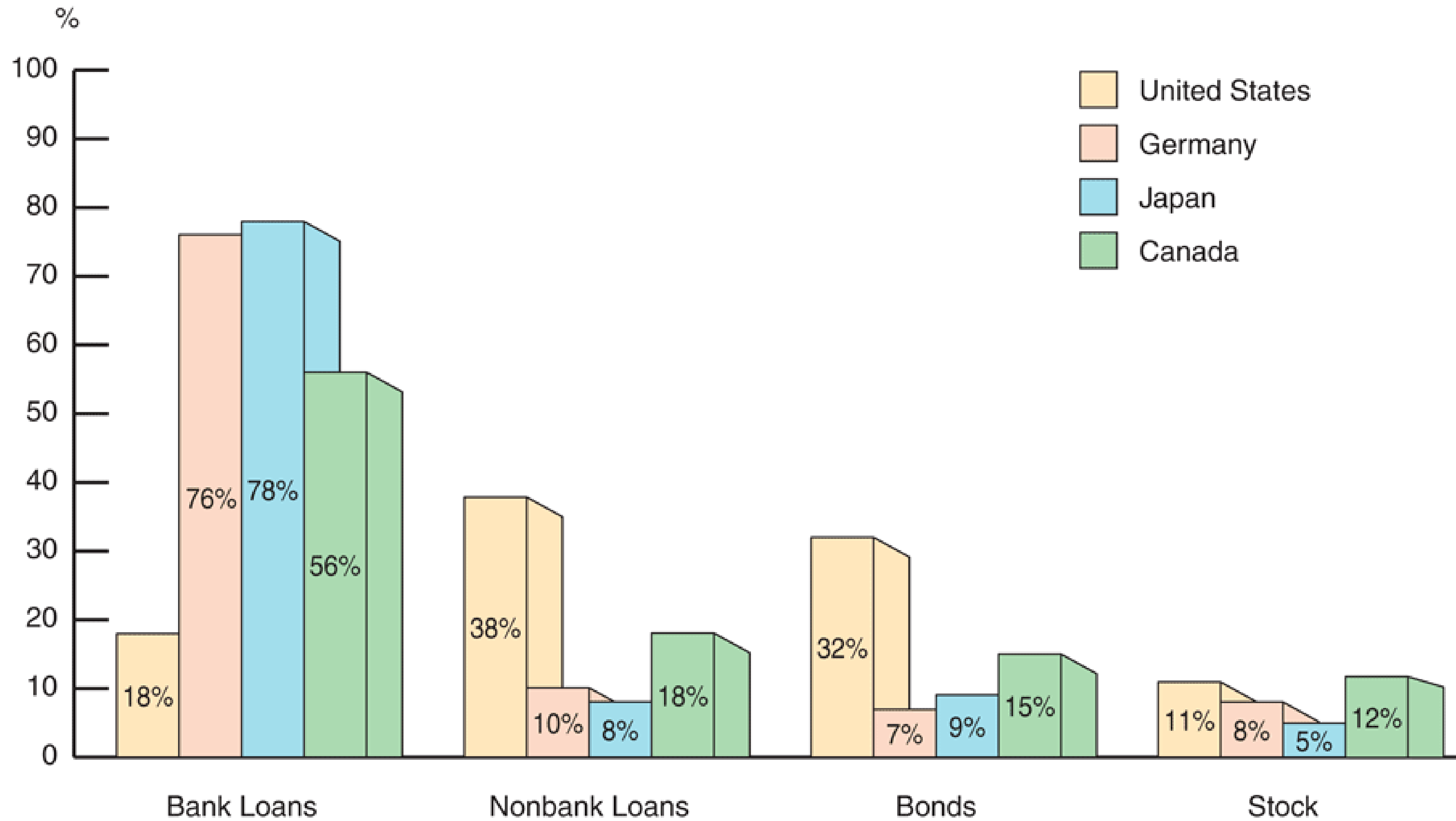
ZHANG, Guoxiong

guoxiong@sjtu.edu.cn

Lecture 6 An Economic Analysis of Financial Structure

- **Basic Facts** about Financial Structure Throughout the World
- **Transaction Cost**
  - -How transaction cost influence financial structure
  - - how financial intermediaries reduce transaction costs
- Asymmetric Information: **Adverse Selection** and **Moral Hazard**
- How **Moral Hazard** Affect the Choice Between Debt and Equity Contracts
- How **Moral Hazard** Influence Financial Structure in Debt Markets
- Financial Development and **Economic Growth**

Sources of External Fund across Countries



Basic Facts on Financial Structure

1. Stocks are **NOT** the most important sources of external financing for businesses
2. Issuing marketable debt and equity securities is **NOT** the primary way in which businesses finance their operations
3. *Indirect finance* is many times more important than *direct finance*
4. Financial intermediaries, particularly banks, are the **most important** source of external funds used to finance businesses.
5. The financial system is among the **most heavily regulated** sectors of the 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 are extremely complicated legal documents that place substantial restrictive covenants on borrowers

Transaction Cost

- **Transaction Cost** takes many forms:
  - *brokerage commission* for buying stocks
  - smallest *denomination* for some bonds (especially good ones issued by large corporations) is $10,000
  - unable to diversify risk with limited funds available

- **Financial Intermediaries** reduce transaction costs:
  - economy of scale (reducing unit transaction cost)
  - expertise (division of labor)

Asymmetric Information

- **Asymmetric Information**: arises when one party's *insufficient knowledge* about the other party involved in a transaction makes it *impossible* to make *accurate* decisions.
  - **Adverse Selection**: the parties that who are **most likely** to produce an **undesirable** outcome are the ones *most likely* to want to engage in the transaction.
    - eg. Bad credit/loans, car/health insurance
    - Happens **before** transaction
  - **Moral Hazard**: borrowers engage in activities that are undesirable for the lender as it make the loan less likely to be repaid.
    - eg. Subprime mortgage crisis
    - Happens **after** transaction

The analysis about how asymmetric information problems affects economic behavior is called **agency theory**.

The Lemon Problem

- If quality cannot be assessed, the buyer is willing to pay at most a price that reflects the average quality
- Sellers of good quality items will not want to sell at the price for average quality
- The buyer will decide not to buy at all because all that is left in the market is poor quality items
- This problem explains fact 2 and partially explains fact 1

This was first introduced by George Akerlof, a Nobel Laureate (2001)

Tools that Help Solve Adverse Selection Problem

- Private production and sale of information
  - Free-rider problem
  - Eg. Standard & Poors, Moody's
- Government regulation to increase information
  - Not always works to solve the adverse selection problem
  - explains Fact 5.
- Financial intermediation
  - Explains facts 3, 4, & 6.
  - Similar as the dealer in used car market
- Collateral and net worth (*capital equity*)
  - Net worth is the difference between a firm's assets and its liabilities
  - Explains fact 7.

Moral Hazard and Choice Between Equity and Debt

- Equity contracts: claims to a share in the profits and assets of a business
- Called the **Principal-Agent Problem**
  - **Principal**: less information (stockholder)
  - **Agent:** more information (manager)

- Separation of ownership and control of the firm
  - Managers pursue personal benefits and power rather than the profitability of the firm

In Jensen, M. C.; Murphy, K. J. *Performance Pay and Top-Management Incentives*, the authors find little correlation between the CEO's pay and the performance of the company they are working for.

Tools to Solve the Principle Agent Problem

- Monitoring (Costly State Verification)
  - Free-rider problem
  - Fact 1
- Government regulation to increase information
  - Fact 5
- Financial Intermediation
  - Fact 3
  - Eg. *Venture Capital Firms*
- Debt Contracts
  - The borrower pay the lender a *fixed* dollar amounts a periodic intervals
  - Fact 1

Moral Hazard and Financial Structure in the Debt Market

- Debt contracts are still subject to moral hazard.
- Borrowers have incentives to take on projects that are **riskier** than the lenders would like.
  - This prevents the borrower from paying back the loan.
  - Eg. Why mortgage rate is significantly lower than business loan rate

Moral Hazard and Financial Structure in the Debt Market

- Net worth and collateral
  - **Incentive compatible**: aligns the incentives of the borrowers with those of the lenders
- Monitoring and Enforcement of Restrictive Covenants
  - Discourage undesirable behavior
  - Encourage desirable behavior
  - Keep collateral valuable
  - Provide information
- Financial Intermediation
  - Facts 3 & 4

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	Production of information: monitoring	1
(principal–agent problem)	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.

Financial Development and Growth

- Many developing countries experience very low rate of growth because their financial systems are underdeveloped.

- **Financial repression** created by an institutional environment characterized by:
  - Poor system of *property rights* (unable to use collateral efficiently)
  - Poor *legal system* (difficult for lenders to enforce restrictive covenants)
  - Weak *accounting standards* (less access to good information)
  - *Government intervention* through directed credit programs and state owned banks (less incentive to proper channel funds to its most productive use).