Financial Markets

博文明理
厚德濟世

Chapter 8: An Economic Analysis of Financial Structure

Preview

A healthy and vibrant economy requires a financial system that moves funds from people who save to people who have productive investment opportunities.

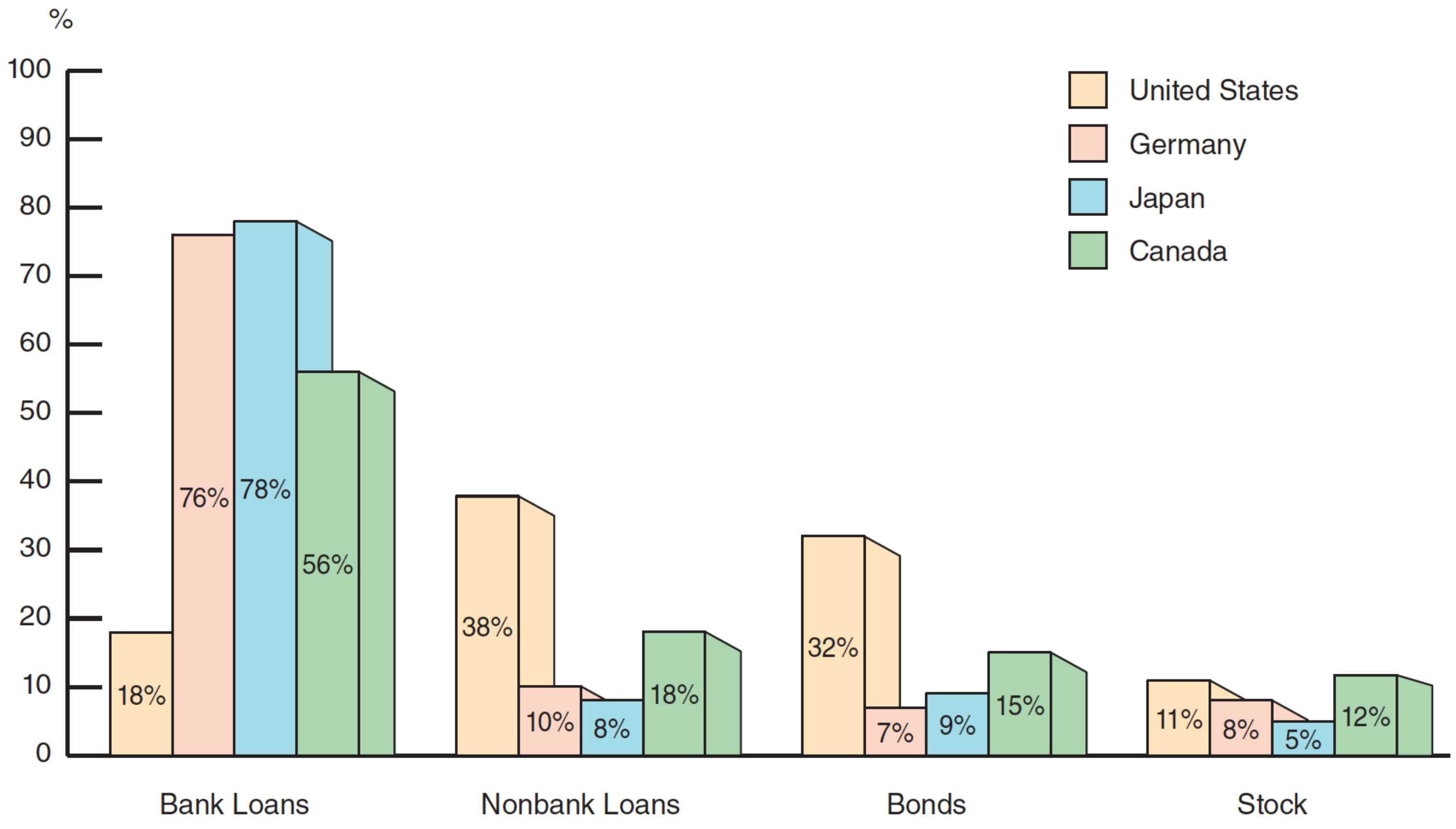
In this chapter, we take a closer look at why financial institutions exist and how they promote economic efficiency.

Learning Objectives

- Identify eight basic facts about the global financial system.
- Summarize how **transaction costs** affect financial intermediaries.
- Describe why asymmetric information leads to adverse selection and moral hazard.
- Recognize **adverse selection** and summarize the ways in which they can be reduced.
- Recognize the **principal-agent problem** arising from **moral hazard** in equity contracts and summarize the methods for reducing it.
- Summarize the methods used to reduce moral hazard
- Conflicts of Interest

Basic Facts about Financial Structure Throughout the World

This chapter provides an economic analysis of how our financial structure is designed to promote economic efficiency. The bar chart below shows how businesses in different countries financed their activities using external funds in the period 1970–2000.



Basic Facts about Financial Structure Throughout the World

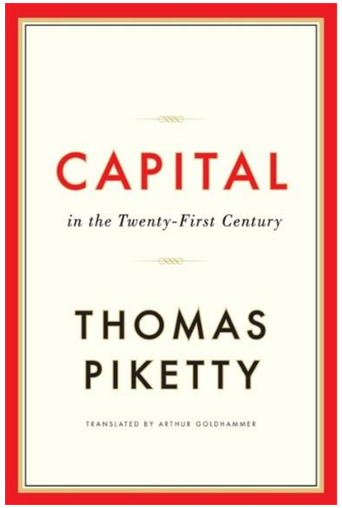
1. Stocks are not the most important sources of external financing for businesses.
2. Issuing marketable debt and equity securities is not the primary way in which businesses finance their operations.
3. Indirect finance is many times more important than direct finance
4. Financial intermediaries, particularly 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 Costs

- Transactions costs influence financial structure
  - ➢E.g., a $5,000 investment only allows you to purchase 100 shares at $50 / share
  - ➢No diversification
  - ➢Bonds even worse—most have a $1,000 size

- Transactions costs can hinder the flow of funds to people with productive investment opportunities

- Capital in the Twenty-First Century



Transaction Costs

- Financial intermediaries make profits by reducing transactions costs

1. Take advantage of economies of scale
   (example: mutual funds)

2. Develop expertise to lower transactions costs
   - Also provides investors with liquidity, which explains Fact # 3 (slide 7-9)

Asymmetric Information: Adverse Selection and Moral Hazard

- Asymmetric information occurs when one party to a transaction has more information than the other. We focus on two specific forms:
  - ➢ Adverse selection occurs **before** a transaction occurs.
  - ➢ Moral hazard arises **after** the transaction has developed.

- The analysis of how asymmetric information problems affect behavior is known as **agency theory**.

Asymmetric Information: Adverse Selection and Moral Hazard

- Adverse Selection

- Occurs when one party in a transaction has better information than the other party
- Before transaction occurs
- Potential borrowers most likely to produce adverse outcome are ones most likely to seek loan and be selected

Asymmetric Information: Adverse Selection and Moral Hazard

- Moral Hazard

➢Occurs when one party has an incentive to behave differently once an agreement is made between parties

➢After transaction occurs

➢Hazard that borrower has incentives to engage in undesirable (immoral) activities making it more likely that won't pay loan back

The Lemons Problem: How Adverse Selection Influences Financial Structure

- Lemons Problem in Used Cars
  1. If we can't distinguish between “good” and “bad” (lemons) used cars, we are willing pay only an average of good and bad car values
  2. Sellers of good quality items will not want to sell at the price for average quality.
  3. The buyer will decide not to buy at all because all that is left in the market is poor quality items.
  4. Result: Good cars won’t be sold, and the used car market will function inefficiently.

- What helps us avoid this problem with used cars?

The Lemons Problem: How Adverse Selection Influences Financial Structure

- Lemons Problem in Securities Markets
  - ➢If we can't distinguish between good and bad securities, willing pay only average of good and bad securities’ value
  - ➢Result: Good securities undervalued and firms won't issue them; bad securities overvalued so too many issued
  - ➢Investors won't want buy bad securities, so market won't function well

– Explains Fact # 1 and # 2
  - Stocks are not the most important source of finance.
  - Marketable securities are not the primary funding source.

– Also explains Fact # 6
  - Less asymmetric info for well known firms, so smaller lemons problem

Tools to Help Solve Adverse Selection Problems

- Private production and sale of information
  - ➢Free-rider problem
- Government regulation to increase information
  - ➢For example, annual audits of public corporations
  - ➢Not always works to solve the adverse selection problem, explains Fact # 5
- Financial intermediation
  - ➢Avoid free-rider problem by making private loans (explains Fact # 3 and # 4)
  - ➢Also explains fact #6—large firms are more likely to use direct financing.
- Collateral and net worth
  - ➢Explains fact # 7

How Moral Hazard Affects the Choice Between Debt and Equity Contracts

- 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.
  - ➢Why does the Principal-Agent Problem make debt more attractive than equity to investors?

How Moral Hazard Affects the Choice Between Debt and Equity Contracts

- Moral Hazard in Equity Contracts: the Principal-Agent Problem
  1. Result of separation of ownership by stockholders (*principals*) from control by managers (*agents*)
  2. Managers act in own rather than stockholders' interest

- Let’s see an example.

How Moral Hazard Affects the Choice Between Debt and Equity Contracts

Suppose you become a silent partner in an ice cream store, providing 90% of the equity capital ($9,000). The other owner, Steve, provides the remaining $1,000 and will act as the manager.

If Steve works hard, the store will make $50,000 after expenses, and you are entitled to $45,000 of the profits.

However, Steve doesn‘t really value the $5,000 (his part), so he goes to the beach, relaxes, and even spends some of the “profit” on art for his office.

How do you, as a 90% owner, give Steve the proper incentives to work hard?

Tools to Help Solve the Principal-Agent Problem

- Monitoring (Costly State Verification)
  - ➢Free-rider problem
  - ➢Fact #1
- Government regulation to increase information
  - ➢Fact #5
- Financial Intermediation (e.g, venture capital)
  - ➢Fact #3
- Debt Contracts
  - ➢Fact #1

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上证公函【2023】3306号

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Moral Hazard in Debt Contracts

Question:

While Debt may be preferred over equity due to the principal-agent-problem, Debt contracts are not immune to moral hazard problems.

Explain how are debt contracts are subject to moral hazard, and what steps can be taken to minimize this asymmetric information problem.

How Moral Hazard Influences Financial Structure in Debt Markets

Even with the advantages just described, debt is still subject to moral hazard. In fact, debt may create an incentive to take on very risky projects. This is important to understand. Let's looks at a simple example.

Most debt contracts require the borrower to pay a fixed amount (interest) and keep any cash flow above this amount.

How Moral Hazard Influences Financial Structure in Debt Markets

For example, what if a firm owes $100 in interest, but only has $90? It is essentially bankrupt. The firm “has nothing to lose” by looking for “risky” projects to raise the needed cash.

Borrowers have incentives to take on projects that are riskier than the lenders would like. This prevents the borrower from paying back the loan.

Tools to Help Solve Moral Hazard in Debt Contracts

- Net worth and collateral
  - ➢Incentive compatible

- Monitoring and enforcement of restrictive covenants
  - ➢Discourage undesirable behavior
  - ➢Encourage desirable behavior
  - ➢Keep collateral valuable
  - ➢Provide information

- Financial intermediation
  - ➢Facts # 3 & # 4

Summary: Asymmetric Information Problems and Tools to Solve Them

SUMMARY TABLE 1

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 financing.
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.

Application: Financial Development and Economic Growth

Financial repression created by an institutional environment is 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)

The financial systems in developing and transition countries face several difficulties that keep them from operating efficiently.

In many developing countries, the system of property rights (the rule of law, constraints on government expropriation, absence of corruption) functions poorly, making it hard to use these two tools effectively.

Mini-Case: Should We Kill All the Lawyers?

- Lawyers are an easy target as a cause of problems. Shakespeare's character Dick the Butcher quips, "…let's kill all the lawyers." Is he right?

- Most legal work is about contract enforcement.
  - Establish and maintain important property rights
  - Without such rights, limited investments!
  - The US has more lawyers / capita than any nation. Arguably the richest as well. Coincidence?

Conflicts of Interest

Conflicts of interest are a type of moral hazard that occurs when a person or institution has multiple interests, and serving one interest is detrimental to the other.

Three classic conflicts developed in financial institutions. Looking at these closely offers insight in avoiding these conflicts in the future.

Conflicts of Interest: Underwriting and Research in Investment Banking

- Investment banks may both research companies with public securities, as well as underwrite securities for companies for sale to the public.

- Research is expected to be unbiased and accurate, reflecting the facts about the firm. It is used by the public to form investment choices.

- Underwriters will have an easier time if research is positive. Underwriters can better serve the firm going public if the firm’s outlook is optimistic.

- Research is expected to be unbiased and accurate, reflecting facts about the firm. It is used by the public to form investment choices.

Conflicts of Interest: Underwriting and Research in Investment Banking

- Underwriters can command a better price for securities issued by a firm if the firm's outlook is optimistic.

- An investment bank acting as both a researcher and underwriter of securities for companies clearly has a conflict—serve the interest of the issuing firm or the public?

  - During the tech boom, research reports were clearly distorted to please issuers. Firms with no hope of ever earning a profit received favorable research.

  - This also lead to **spinning**, where the investment bank allocates underpriced equity (i.e., newly issued stock) to executives who would promise future business to this bank.

Conflicts of Interest: Auditing and Consulting in Accounting Firms

- Auditors check the assets and books of a firm for the quality and accuracy of the information. The objective is an unbiased opinion of the firm’s financial health.

- Consultants, for a fee, help firms with a variety of managerial, strategic, and operational projects.

- An auditor acting as both an auditor and consultant for a firm clearly is not objective, especially if the consulting fees exceed the auditing fees.

- An auditor may provide an overly favorable audit to solicit or retain audit business.

Opinion
Lionel Laurent, Columnist

Beware Crypto Billionaires Boasting of Audits

Regulators are rightly taking a closer look at the external gatekeepers of the virtual-currency frenzy.

December 30, 2022 at 1:00 PM GMT+8

By Lionel Laurent
Lionel Laurent is a Bloomberg Opinion columnist writing about the future of money and the future of Europe. Previously, he was a reporter for Reuters and Forbes.

Sam Bankman-Fried, co-founder of FTX, departs from court in New York on Dec. 22. *Photographer: Stephanie Keith/Bloomberg*

Conflicts of Interest: Credit Assessment and Consulting in Rating Agencies

- Rating agencies assign a credit rating to a security issuance of a firm based on projected cash flow, assets pledged, etc. The rating helps determine the riskiness of a security.

- Consultants, for a fee, help firms with variety of managerial, strategic, and operational projects.

- An rating agency acting as both an rater and consultant for a firm clearly is not objective, especially if the consulting fees exceed the rating fees.

Conflicts of Interest: Credit Assessment and Consulting in Rating Agencies

- Rating agencies, such as Moody’s and Standard and Poor, were caught in this game during the housing bubble.

- Firms asked the rater to help structure debt offering to attain the highest rating possible. When the debt subsequently defaulted, it was difficult for the agency to justify the original high rating.

- Perhaps it was just error. But few believe that—most see the rating agencies as being blinded by high consulting fees.

- https://www.dxomark.com

Chapter Summary

- Basic Facts About Financial Structure Throughout the World: we reviewed eight basic facts concerning the structure of the financial system

- Transaction Costs: we examined how transaction costs can hinder capital flow and the role financial institutions play in reducing transaction costs

- Asymmetric Information: Adverse Selection and Moral Hazard: we defined asymmetric information along with two categories of asymmetric information—adverse selection and moral hazard

- The Lemons Problem: How Adverse Selection Influences Financial Structure: we discussed how adverse selection effects the flow of capital and tools to reduce this problem

Chapter Summary

- How Moral Hazard Affects the Choice Between Debt and Equity Contracts: we reviewed the principal-agent problem and how moral hazard influences the use of more debt than equity

- How Moral Hazard Influences Financial Structure in Debt Markets: we discussed how moral hazard and debt may lead to increased risk-taking, and tools to reduce this problem

- Conflicts of Interest: we reviewed several examples of conflicts in our economy, many of which ended badly. Can we address these in the future before they lead to severe problems?

Acknowledgment

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