Economics 435
The Financial System
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Instructor: Prof. Menzie Chinn
UW Madison
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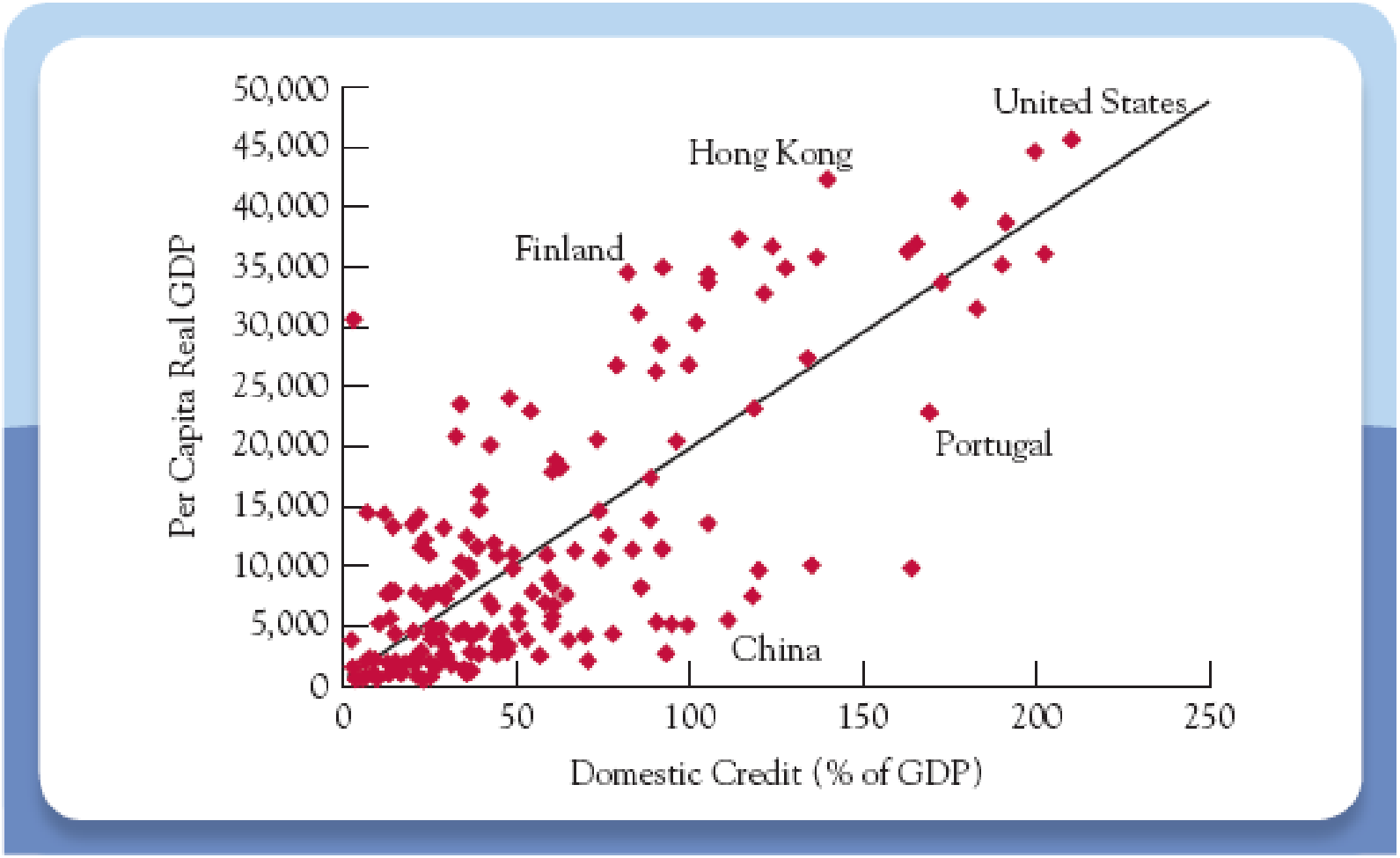
Introduction

- Financial institutions serve as intermediaries between savers and borrowers, so their assets and liabilities are primarily financial instruments.
- These institutions pool funds from people and firms who save and lend them to people and firms who need to borrow.
- Intermediaries investigate the financial condition of the individuals and firms.
- In principle, intermediaries increase investment and economic growth at the same time that they reduce investment risk and economic volatility.

Introduction

Figure 11.1 Financial and Economic Development



Problems

- The flow of information among parties in a market system is particularly rife with problems.
- These problems can derail real growth unless they are addressed properly.
- In this lecture we will review some of these information problems and learn how financial intermediaries attempt to solve them.

The Role of Financial Intermediaries

Table 11.1 The Relative Importance of Direct and Indirect Finance (Averages for 1990–2007)

Country	Direct Finance: Stock Market Capitalization as Percent of GDP (A)	Direct Finance: Outstanding Domestic Debt Securities as Percent of GDP (B)	Indirect Finance: Credit Extended by Banks & Other Financial Institutions as Percent of GDP (C)	Ratio of Indirect to Direct Finance C/(A+B) (D)
Industrialized Countries				
France	59.0	45.0	88.2	0.8
Germany	40.7	47.4	107.2	1.2
Greece	38.9	2.3	45.4	1.1
Italy	34.0	35.8	68.0	1.0
Japan	78.7	43.9	154.0	1.3
United Kingdom	131.1	15.6	125.4	0.9
United States	113.2	94.9	154.3	0.7
Emerging Markets Countries				
Argentina	31.6	4.7	16.7	0.5
Brazil	34.0	9.8	34.1	0.8
India	38.3	0.9	27.5	0.7

The Role of Financial Intermediaries

- These data highlight the importance of intermediaries.
  - Banks are still critical providers of financing around the world.
  - Intermediaries determine which firms can access the stock and bond markets.
  - Banks decide the size of a loan and interest rate to be charged.
  - Securities firms set the volume and price of new stocks and bond issues when they purchase them for sale to investors.

Providing Liquidity

- *Liquidity* is a measure of the ease and cost with which an asset can be turned into a means of payment.
- Financial intermediaries offer us the ability to transform assets into money at relatively low cost - ATM's, for example.
- Banks can structure their assets accordingly, keeping enough funds in short-term, liquid financial instruments to satisfy the few people who will need them and lending out the rest.

Diversifying Risk

- Financial institutions enable us to diversify our investments and reduce risk.
- Banks take deposits from thousands of individuals and make thousands of loans with them.
  - Each depositor has a very small stake in each one of the loans.
- All financial intermediaries provide a low-cost way for individuals to diversify their investments.

Collecting and Processing Information

- The fact that the borrower knows whether he or she is trustworthy, while the lender faces substantial costs to obtain that information, results in an *information asymmetry*.
  - Borrowers have information that lenders don't.
- By collecting and processing standardized information, financial intermediaries reduce the problems that information asymmetries create.

Information Asymmetries and Information Costs

- Information plays a central role in the structure of financial markets and financial institutions.
- Markets require sophisticated information to work well.
  - If the cost of information is too high, markets cease to function.
- Issuers of financial instruments know more about their business prospects and willingness to work than potential lenders/investors.

Information Asymmetries and Information Costs

- Asymmetric information is a serious hindrance to the operation of financial markets.
- It poses two important obstacles to the smooth flow of funds from savers to investors:

1. Adverse selection arises before the transaction occurs.
   - Lenders need to know how to distinguish good credit risks from bad.
2. Moral hazard occurs after the transaction.
   - Will borrowers use the money as they claim?

Adverse Selection

- The market for lemons:
  - Used car buyers can’t tell good from bad cars.
  - Buyers will at most pay the expected value of good and bad cars.
  - Sellers know if they have a good car; won’t accept less than the true value.
  - Good car sellers will withdraw cars from the market.
  - Then the market has only the bad cars
- If you can’t tell good from bad companies
  - Stocks of good companies are undervalued, and
  - Owners will not want to sell them.
- If you can’t tell good from bad bonds
  - Owners of good companies will have to sell bonds for too low a price, so
  - Owners won’t want to do it.
  - hen the market has only the bad cars.

Solving the Adverse Selection Problem

- From a social perspective, the problems of adverse selection are not good.
  - Some companies will pass up good investments.
  - Economy will not grow as rapidly as it could.
- We must find ways for investors and lenders to distinguish well-run firms from poorly run firms.

Disclosure of Information

- Solution to asymmetric information problem: provide more information.
- In most industrialized countries, *public companies* are required to disclose voluminous amounts of information.
- E.g., SEC requirements
- Counter-example: Enron
- Private information provision: Moody's, Value Line, Dun and Bradstreet
- "Free Rider" problem

Collateral and Net Worth

- Another solution: ensure lenders are compensated even if borrowers default.
  - If a loan is insured in some way, then the borrower isn't a bad credit risk.
- Collateral is something of value pledged by a borrower to the lender in the event of the borrower's default. Reduces adverse selection
  - E.g.: Cars, houses
- Unsecured loans are loans made without collateral.
  - Generally have very high interest rates.

Collateral and Net Worth

- The net worth is the owner's stake in a firm: value of the firm assets minus liabilities.
  - Net worth serves the same purpose as collateral
  - If a firm defaults on a loan, the lender can make a claim against the firm's net worth.
- From the perspective of the mortgage lender, the homeowner's equity serves exactly the same function as net worth in a business loan.
- Hence why small business owners have difficulty accessing credit

APPLYING THE CONCEPT
DEFLATION, NET WORTH, AND INFORMATION COSTS

- Deflation is harmful because it aggravates information problems in ways that inflation does not - it reduces a company's net worth.
- When prices fall,
  - The dollar value of the firm's liabilities remains the same, but
  - The value of the firm's assets fall with the price level.
- Deflation drives down a firm's net worth, making it less trustworthy as a borrower.

Moral Hazard: Problem and Solutions

- Origin: *moral hazard* -- an insurance policy changes the behavior of the insured.
- Moral hazard arises when we cannot observe people's actions and therefore cannot determine whether a poor outcome was intentional or just a result of bad luck.
- Also arises because the borrower knows more than the lender about the way borrowed funds will be used and the effort that will go into a project.

Moral Hazard in Equity Finance

- The separation of your ownership from their control creates what is called a *principal-agent problem*.
- During the 1990's, a concerted attempt was made to align managers' interests with those of stockholders.

  Executive stock options; induced tendency to misrepresent profits

Moral Hazard in Debt Finance

- When the managers are the owners, moral hazard in equity finance disappears.
- Because debt contracts allow owners to keep all the profits in excess of the loan payments, they encourage risk taking.
- Lenders need to find ways to make sure borrowers don’t take too many risks.
- People with risky projects are attracted to debt finance because they get the full benefit of the upside, while the downside is limited to their collateral.

Solving the Moral Hazard Problem in Debt Finance

- Legal contracts can solve the moral hazard problem inherent in debt finance.
  - Bonds and loans carry restrictive covenants that limit the amount of risk a borrower can assume.
  - The firm may have to maintain a certain level of net worth, a minimum credit rating, or a minimum bank balance.
  - For example: home mortgages' home insurance, fire insurance, etc.

How Companies Finance Growth and Investment

- We noted two things at the beginning of this chapter:
  1. Wealthy countries have high levels of financial development, and
  2. Intermediaries play key roles both in direct and indirect finance.
- In addition to direct and indirect finance, a firm can also use its own profits.

How Companies Finance Growth and Investment

- Instead of distributing profits to shareholders, a firm can reinvest the earnings into the firm.
  - A vast majority of investment financing comes from internal sources.
- The fact that managers have superior information about the way in which their firms are and should be run makes internal finance the rational choice.

Investment Financing: The Pecking Order

Figure 11.3 Sources of Business Finance