

# EE432 Monetary Theory and Policy



Lecture 4 The Economics of Financial Intermediation

Dr. Chamadanai Marknual

Faculty of Economics, Thammasat University

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# Outline

- The Role of Financial Intermediaries
- Information Asymmetries and Information Costs

# Chapter 11

## The Economics of Financial Intermediation

# The Role of Financial Intermediaries

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- **Financial markets** are important because they *price economic resources* and *allocate them to their most productive uses*.
- *Intermediaries*, including **banks** and **securities firms**, continue to play a key role in both *direct* and *indirect finance*.

# The Role of Financial Intermediaries

- 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*.

# The Role of Financial Intermediaries

- **Financial intermediaries** are *important* because of information.
- **Lending and borrowing** *involves* both transactions costs and information costs
- Financial institutions exist to ***reduce these costs***.

# The Role of Financial Intermediaries

Financial institutions **perform** *five functions*:

1. **Pooling the resources** of small savers,
2. **Providing safekeeping** and accounting services, as well as access to **payments system**,
3. **Supplying liquidity** by *converting* savers' balances directly *into a means of payment* whenever needed,
4. Providing ways to **diversify risk**, and
5. *Collecting and processing information* in ways that **reduce information costs**.

# Pooling Savings

- The most straightforward economic function of a financial intermediary is to **pool the resources of many small savers**.
  - By *accepting many small deposits*, banks empower themselves *to make large loans*.
- In order to do this, the intermediary:
  - Must **attract substantial numbers of savers**, and
  - Must **convince** potential depositors of the **institution's soundness**.

# Safekeeping, Payments System Access, and Accounting

- Banks:
  - Are a **place for safekeeping**.
  - Provide access to the **payments system** -- the **network** that ***transfers funds*** from the *account of one person or business* to the *account of another*.
  - *Specialize in handing payments transactions,* allowing them to **offer these services relatively cheaply**.
- Financial intermediaries **reduce the costs of financial transactions**.

# Safekeeping, Payments System Access, and Accounting

- Financial intermediaries **facilitate** the *exchange of goods and services*.
- This principal of comparative advantage leads to specialization so that each of us ends up *doing just one job* and *being paid* in some form of money.
- Financial intermediaries help our economy to function **more efficiently**.

# Safekeeping, Payments System Access, and Accounting

- Financial intermediaries also help us **manage our finances**.
- They provide us with **bookkeeping and accounting services**, *noting all our transactions for us*
- These force financial intermediaries to **write legal contracts** - but *one can be written and used over and over again* - reducing the cost of each.
- Much of what financial intermediaries do takes advantage of ***economies of scale***

# 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
- 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 then lending out the rest.**

# Providing Liquidity

- By **collecting funds** from a large number of *small investors*, the bank can ***reduce the cost of their combined investment***, offering each individual investor both *liquidity* and ***high rates of return***.
- Intermediaries *offer* both individuals and businesses **lines of credit**, which provides customers with **access to liquidity**.
- A financial intermediary must **specialize** in **liquidity management**.
- It **must design its balance sheet** so that it can ***sustain sudden withdrawals***.

# 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

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**Asymmetric information** 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

- **Used cars and the market for lemons; a lemon is a vehicle (often new) that turns out to have several manufacturing defects:**
  - Used car buyers ***can't tell good cars from bad.***
  - **Buyers** will at most **pay the expected value of good and bad cars.**
  - **Sellers** know if they have a good car, so they **won't accept less than the true value.**
  - **If buyers** are only **willing to pay average value**, *good car sellers will withdraw cars from the market.*
  - Then the market has *only the bad cars.*

# Adverse Selection in Financial Markets

- 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
  - **Good bonds** *won't be sold want to do it*.

# Disclosure of Information

- An obvious way to solve the *hidden attributes* problem is to provide more information.
- In most advanced economies, *public companies* are **required to disclose** voluminous amounts of **information**.
  - For example, in the *Securities and Exchange Commission (SEC)* requires firms to **produce public financial statements** that are prepared according to standard accounting practices.

# Disclosure of Information

- In a limited sense, **there is *private information* collected and sold to investors.**
  - *Research services like Moody's , collect information directly from firms and produce evaluations.*
  - *To be credible, companies cannot pay for this research, so **investors have to pay.***

# Collateral and Net Worth

- **Collateral** is something of value *pledged or guaranteed by a borrower* to the lender *in the event of the borrower's default*.
  - It is said to *back* or *secure* a loan.
- **Unsecured loans**, like *credit cards*, are loans made without collateral.
  - Because of this they generally have ***very high interest rates***.

# Collateral and Net Worth

- The **net worth** is the owner's stake in a firm;
  - *the value* of the **firm's assets** minus the value of its 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***.
- **Most small business owners** must ***put up their homes and other property as collateral*** for their business loans.

# Moral Hazard: Problem and Solutions

- **Moral hazard** arises when
  - we *cannot observe people's actions* and therefore *cannot judge whether a poor outcome was intentional* or just a result of bad luck.
  - 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

- If you buy stock in a company, *how* do you know *your money will be used* in the way that is *best for you*, the stockholder?
- It is more likely that the ***managers will use the funds in a way that is most advantageous to themselves***, not you.
- The ***separation of your ownership from their control*** creates what is called a ***principal-agent problem***.

# Solving the Moral Hazard Problem in Equity Financing

- The attempts to *align managers' interests with those of stockholders* were giving stock options as incentives to managers that provided lucrative payoffs if a firm's stock price rose above a certain level.
- When the *managers are the owners*, moral hazard in equity finance disappears.

# Moral Hazard in Debt Finance

- 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.
  - The firm may **have to maintain a certain level of net worth, a minimum credit rating, or a minimum bank balance or home insurance and fire insurance** for mortgages.

# Financial Intermediaries and Information Costs

- To *reduce information costs and minimize the effects of adverse selection and moral hazard*, intermediaries should:
  - **Screen loan applicants, and**
  - **Monitor borrowers**

# Screening and Certifying to Reduce Adverse Selection

- The lender *analyzes credit information* from credit score.
- Every time someone requests a credit score, they **have to pay**, *eliminating the free rider problem*.
- **Banks can collect information on a borrower** that goes beyond their credit report and loan application.

# Monitoring to Reduce Moral Hazard

- Intermediaries **monitor firms** that *issue bonds and stocks* to reduce moral hazard.
  - Many **hold** significant number of **shares** in individual firms.
  - They **may place a representative** on the company's **board of directors**.

# Monitoring to Reduce Moral Hazard

- For **new companies**, a financial intermediary called a ***venture capital firm*** does the monitoring.
  - They **specialize in investing in *risky new ventures*** in return for a ***stake*** (*share of financial involvement*) ***in the ownership*** and a ***share of the profits***.
  - They ***keep a close watch on the managers' actions***.
- The threat of a takeover helps to **persuade managers to act in the *interest of the stock and bondholders***.

End of lecture