EE432 Monetary Theory and Policy

Lecture 4 The Economics of Financial Intermediation

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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

The Role of Financial Intermediaries

- **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 <u>***new***</u> ***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 <u>many small savers</u>**.
  - 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 **<u>institution's soundness</u>**.

Safekeeping, Payments System Access, and Accounting

- Banks:
  - Are a **place for safekeeping**.
  - Provide access to the **payments system** -- the **<u>network</u> 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 <u>***comparative advantage***</u> leads to <u>**specialization**</u> 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 **<u>liquidity management</u>**.
- 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 <u>*make thousands of loans*</u> 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 <u>diversify</u> 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 Asymmetries and Information Costs

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 <u>several manufacturing defects</u>*:
  - 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 ***<u>won't accept less than the true value</u>***.
  - **If buyers** are only **willing to pay average value**, *good car sellers will* <u>withdraw</u> *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 <u>sold to investors</u>**.
  - *Research services* like Moody's , *collect information <u>directly from firms</u>* and *produce evaluations*.
  - *To be credible, companies <u>cannot pay</u>* 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 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