Essex EC248-2-SP
Lecture 3

Financial Intermediation: Rationale, Competition, Regulation

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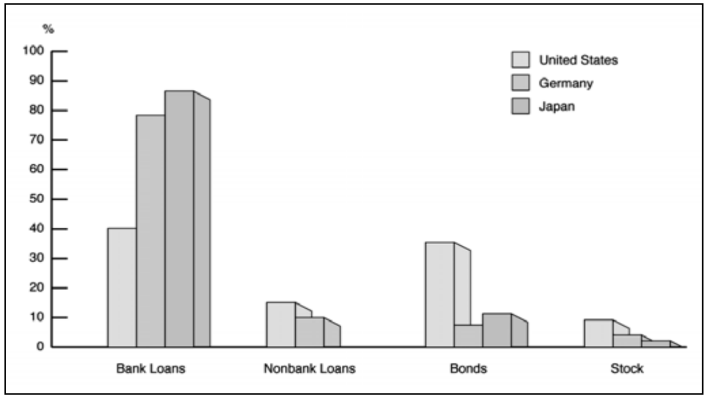
Plan of Talk

- **Introduction**
1. Analysing financial structure
2. Economic rationale for financial intermediation
   - Transaction costs
   - Asymmetric information (agency theory)
     1. Adverse selection
     2. Moral hazard
3. Banking industry: B/S, competition, regulation
- **Wrap-up**

Aims and Learning Outcomes

- **Aims**
  - Discuss the trends in financial structure and banking
  - Relate them to theories and regulations
- **Learning outcomes**
  - Explain the stylized facts (puzzles) of financial structure
  - Justify the existence of financial intermediaries
  - Characterise recent tendencies in banking competition
  - Understand the theoretical underpinnings for regulation

Sources of *External* Finance for Firms



Puzzles of Financial Structure

1. *Stocks* (marketable *equity* securities) are not the prime source of external finance for businesses
2. Neither is issuing marketable *debt* securities (*bonds*)
3. *Indirect* finance (financial *intermediation*) is far more important than direct finance (marketable *securities*)
4. *Banks* are the most important source of external finance
5. The financial system is among the most *heavily regulated* sectors of the economy
6. Only large, *well established* firms have access to securities markets
7. *Collateral* is a prevalent feature of debt contracts (to households and smaller firms:e.g. automobile loans, home/farm/commercial mortgages)
8. Debt contracts are complicated legal documents with *restrictive covenants* on borrower's behavior (e.g. to insure the car/house purchased by loan)

Economic Rationale for Financial Intermediation: *Transaction Costs*

Transaction costs hinder flow of funds to people with productive investment opportunities

Financial intermediaries make profits by reducing transaction costs

1. Take advantage of **economies of scale**
   Example: Mutual Funds
2. Develop **expertise** to lower further transaction costs
   Explains Puzzle 3

Economic Rationale for Financial Intermediation: *Agency Theory*

Asymmetric Information: one party has insufficient knowledge about the other party involved in a transaction to make accurate decisions

2 types:

a) Adverse Selection (hidden *information*)

1. Before transaction occurs
2. Potential borrowers most likely to produce adverse outcomes are most likely to seek loans and be selected

=> Lenders may decide not to make any loans at all

b) Moral Hazard (hidden *action*)

1. After transaction occurs
2. Hazard (risk) that borrower has incentives to engage in undesirable (immoral) activities making it less likely that loan will be repaid

=> Lenders may decide not to make any loans at all

Adverse Selection and Financial Structure: *Lemons Problem*

Akerlof (1970, QJE): "peaches" and "lemons" in *used-car* market => Myers and Majluf (1984, JFE) and Greenwald, Stiglitz and Weiss (1984, AER): lemons problem in *securities* market

1. If a potential buyer cannot distinguish b/n good and bad securities, (s)he is willing to pay only the average of securities' quality
2. Result: Good securities undervalued and firms won't issue them; bad securities overvalued, so too many issued
3. Investors won't want to buy bad securities, so market won't function well (if at all)
   Explains Puzzle 2 and Puzzle 1.
   Also explains Puzzle 6: Less asymmetric information for well known firms, so smaller lemons problem

In the absence of asymmetric information, lemons problem goes away

Tools to Help *Solve Adverse Selection* (Lemons) Problem

1. ***Private* Production and Sale of Information**: S&P, Moody's
   Free-rider problem: use of information for which one hasn't paid
2. ***Government* Regulation to Increase Information**: SEC
   Politically difficult to release negative information about firms
   Explains Puzzle 5
3. ***Financial Intermediation***
   A. Analogy to solving lemons problem by *used-car dealers*
   B. Avoid free-rider problem by making *private loans* (and not purchasing securities traded in financial markets)
   Explains Puzzles 3 and 4
4. ***Collateral* and *Net Worth /Equity Capital/*** = firm's A (what it owns or what is owed to it) – firm's L (what it owes)
   Explains Puzzle 7

Moral Hazard in *Equity* Contracts and Financial Structure

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*

would not arise under complete information

Tools to help *solve the principal-agent problem*

1. Monitoring of firm's activities: production of information (auditing, checking), but *expensive (time and money) = costly state verification*: makes equity contracts less desirable
2. Government regulation to increase information (laws): accounting principles (make profit verification easier), criminal penalties (fraud)
3. Financial intermediation => *venture capital* firms (members of boards)
4. Debt contracts => lender cares for *fixed* (periodic) payment, not profits

Explains Puzzles 1 and 2: Why debt used more than equity

Moral Hazard in *Debt* Contracts and Financial Structure

(Borrower wants to take on) Too much risk: fixed payment for *lender*, huge profit to *borrower* with a tiny probability

Tools to help *solve moral hazard of too much risk*

1. High net worth: borrowers have also more to lose, making contract *incentive-compatible* (by *aligning* incentives of borrower with those of lender)
2. Monitoring and enforcement of restrictive covenants: 4 types (desirable and undesirable actions, collateral value, information)
   Explains Puzzle 8
3. Financial intermediation: banks and other intermediaries have advantages/incentives to monitor/enforce *private* (nontraded) loans, thus solving the *free-rider problem* of direct finance
   Explains Puzzles 1–4

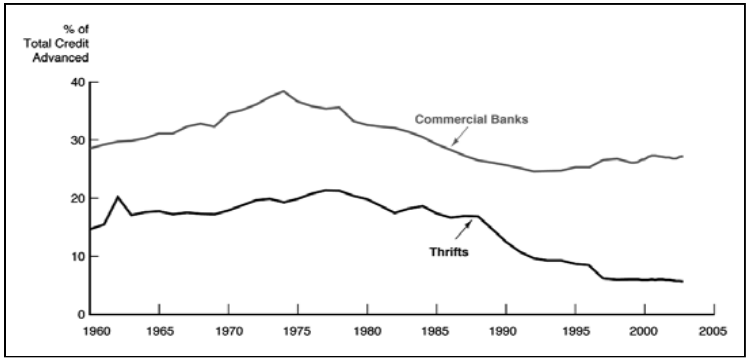
The Bank Balance Sheet

Table 1 Balance Sheet of All Commercial Banks (items as a percentage of the total, January 2003)

Assets (Uses of Funds)*		Liabilities (Sources of Funds)	
Reserves and cash items	5	Checkable deposits	9
Securities		Nontransaction deposits	
U.S. government and agency	15	Small-denomination time deposits	
State and local government and other securities	10	(< $100,000) + savings deposits	42
Loans		Large-denomination time deposits	14
Commercial and industrial	14	Borrowings	28
Real estate	29	Bank capital	7
Consumer	9		
Interbank	4		
Other	8		
Other assets (for example, physical capital)	6		
Total	100	Total	100

*In order of decreasing liquidity.
Source: www.federalreserve.gov/releases/h8/current/.

The Decline in Banks as a Source of Finance



Decline in Traditional Banking

Loss of *Cost* Advantages in *Acquiring* Funds (*Liabilities*) since late 1960s, $\pi \uparrow$ and $i \uparrow$ => *disintermediation* because

1. Reserve requirements and deposit rate ceilings under Regulation Q in US, until 1986 (=> deregulation)
2. *Domestic* money market mutual funds (<=> financial innovation)
3. *Foreign* banks have cheaper source of funds: Japanese banks can tap large savings pool (<= deregulation)

Loss of *Income* Advantages on *Uses* of Funds (*Assets*)

1. Easier for firms to use directly securities markets to raise funds: e.g. commercial paper market (<=> financial innovation)
2. *Securitization* (<=> financial innovation)
   - computers enable *other* financial institutions to accurately evaluate credit risk with statistical methods

   => illiquid financial assets such as bank loans and mortgages are bundled and *transformed* into marketable securities

Banks' Response

Loss of

- cost advantages in raising funds
- and income advantages in making loans

causes *reduction in profitability* in traditional banking =>

1. expand lending into **riskier** areas: e.g. commercial real estate loans
2. pursue more profitable **off-balance sheet** activities

hence, creating problems for bank **regulators** (banking crises)

Similar trends/problems for banking industry in other countries

How Asymmetric Information Explains Banking Regulation (I)

1. Government Safety Net: Deposit Insurance (FDIC)

A. Prevents bank runs due to asymmetric information: depositors cannot tell good from bad banks

B. Creates moral hazard incentives for banks to take on too much risk

C. Creates adverse selection problem of crooks and risk-takers wanting to control banks

D. Too-Big-to-Fail doctrine increases moral hazard incentives for big banks: May 1984, Continental Illinois insolvent, bailed out

2. Restrictions on Asset Holdings

Reduces moral hazard of too much risk taking

How Asymmetric Information Explains Banking Regulation (II)

3. **Bank Capital Requirements** (BIS, Basel) take two forms:
- ***leverage* ratio** = bank capital (bank's net worth) / bank *total* assets: > 5%
- ***risk-based* capital requirements** (4 *categories* of assets and respective *weights*: 0%, 20%, 50%, 100%) = bank capital / bank *risk-weighted* assets: > 8%
   A. Reduces moral hazard: banks have more to lose when have higher capital
   B. Higher capital means more collateral for FDIC
4. **Bank Supervision: Chartering and Examination**
   A. Reduces adverse selection problem of risk takers or crooks owning banks
   B. Reduces moral hazard by preventing risky activities
5. **New Trend: Assessment of *Risk* Management**
6. **Disclosure Requirements**
   Better information reduces asymmetric information problem

How Asymmetric Information Explains Banking Regulation (III)

7. **Consumer Protection**
   A. Standardised interest rates: annual percentage rate (APR)
   B. Prevent discrimination in credit markets
8. **Restrictions on Competition to Reduce Risk-Taking**
   A. Branching restrictions
   B. Separation of banking and securities industries: in US, Glass-Steagall Act (until 1999)

***International* Banking Regulation**

1. Non-US bank regulation (largely) similar to US
2. Particular problem of regulating *international* banking, e.g. BCCI scandal:
   – BCCI operated in 70+ countries but was supervised by Luxembourg
   – massive fraud discovered, BoE closed BCCI down, but huge losses

Concluding Wrap-Up

- **What have we learnt?**
  – What the stylized facts (puzzles) of financial structure are and how we can explain them
  – Why financial intermediaries exist, in addition to financial markets
  – What the trends in their evolution and competition are
  – How regulation helps prevent problems of asymmetric information
- **Where we go next:** to understanding the role of central banks and monetary policy