

**Topic 1**  
(Tuesday morning)

**Financial Intermediation in  
Perspective**

Boot and Thakor, "The Accelerating Integration Of Banks And Markets  
And Its Implications For Regulation", chapter 3 of *Oxford Handbook of  
Banking* (forthcoming)

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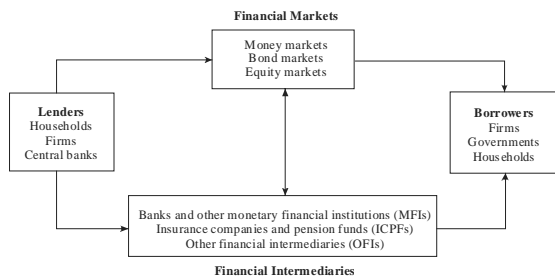
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**Figure 1. An overview of the financial system**



Source: Allen, Chui, and Maddaloni (2004) p. 491.

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The general problem of funding new investment (ideas)

Costly state verification → debt generally optimal for outside claims.

Inalienability of human capital → lender cannot extract maximum (optimal) effort without giving up something.

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So a saver with excess cash confronts problems:

- a) how does lender assess risk of repayment?
  - Moral hazard
  - Information asymmetries
  - Economies of information collection, evaluation
- b) how does lender confirm ability to repay (ex post)?

Principal-agent problem. Solutions offered by

- Diamond (1984)
- Williamson (1986)

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The relative importance of the different roles of banks varies substantially across countries and times but, banks are always critical to the financial system.

Product mix varies across firms and across nations.

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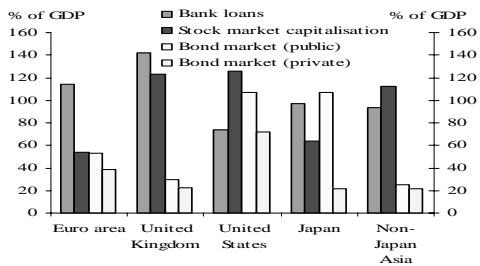


Figure 2. Size of the financial markets by country/region (2003)  
Source: Allen, Chui, and Maddaloni (2004) p. 492. Original sources: CEIC Data Ltd, International Financial Statistics, and national sources.

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## Main Roles of Banking Firms

1. Ameliorate the information problems
2. Corporate governance
  - a. Monitoring and control
  - b. M&A
    - i. knowledge about asset pricing
    - ii. financing
3. Payments
4. Risk management services
5. OTC derivatives
6. Asset management
7. Provide investors with a safe asset

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"[L]iquidity production has always been, and continues to be, the *core function of banking*, but its form has changed in response to development of financial technology and deepening of securities markets."

Phil Strahan, *Oxford Handbook of Banking*, forthcoming  
(emphasis added)

- Strahan and Gatev (JF 2006)
- Pennachi (JME 2006)
- Kayshap, Ragan and Stein (JF 2002)
- Maturity mismatch

Banks provide a safe claim

- Gorton and Pennacchi (JF 1990)
- Amihud and Mendelson (JFE 1986)

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## Diamond 1984

Entrepreneurs have ideas, but no savings  
Savers have no ideas

Imperfect (costly) information makes debt  
collection non-trivial.

Nonpecuniary penalty for default

A lender can "monitor" by paying  $K$  when the  
loan is first extended.

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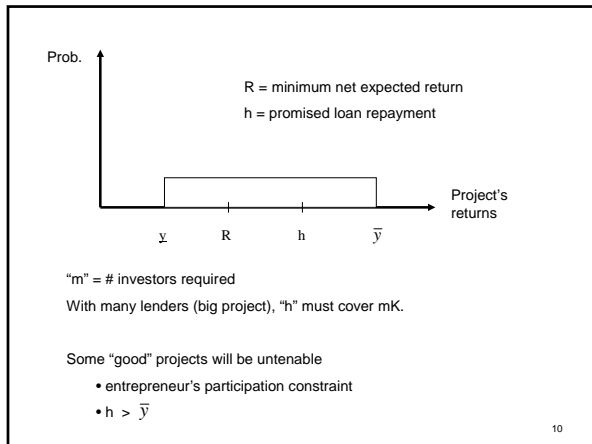
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A single monitor?

- A rating agency
- Incentives to perform

Diamond shows that one banker will properly monitor all borrowers on behalf of depositors.

- pay K for each borrower
- set contract loan rate to cover expected project shortfalls iff banker actually monitors

LLN permits banker to pay depositors "R" with ever-greater certainty as # projects  $\rightarrow \infty$

- If banker doesn't monitor as promised, s/he'll suffer non-pecuniary bankruptcy costs.

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Diamond yields:

- Important insight about delegation
- Not your typical banking system
- Motive to hedge observable risks
- Loans are illiquid (a purchaser must re-pay K).
- Bank's equity may replace the nonpecuniary default costs.

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Williamson (JME 1986)

Collection problem again (Townsend 1979, Gale and Hellwig 1984)

Unlike Diamond

- Pay to monitor ex post
- Fixed cost permits lender to collect what is available from project.
- Given output dist'n, there's some chance lender must monitor.
- Nonprice rationing

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Why is Williamson's delegation feasible?

- Depositor's best contract with intermediary is like the latter's with entrepreneur.
- Intermediary makes many loans
- Pr (depositors will need to monitor) smaller, the larger is the intermediary.

With sufficient bank diversification, depositors get higher expected return than if bought bonds. Bank return is almost a sure thing.

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Ex post monitoring

- does not create a "relationship"
- makes the loans less illiquid

Williamson generates nonprice rationing

Relates to macro credit conditions, real economy

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## “Monitoring”

Diamond: pay up front, detect final under-reporting.

Williamson: pay only if loan goes bad.

Generalize:

- lender’s ability to watch firm decisions and interfere with those that harm the lender’s interests
- instrument of corporate governance/control

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Both Diamond and Williamson produce more credit to investors than the bond market would supply.

- More good ideas get funded
- Entrepreneurs earn more
- More entrepreneurs thinking up new ideas

Are there no drawbacks to this solution?

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## The Dark Side: Rajan (1992)

Bank learns about borrower during the loan.

- ex ante: competition for customers
- ex post: some monopoly power

Holdup potential causes entrepreneur to withhold some productive effort.

The *raison d’etre* for intermediaries (concentration of expensive information) generates some additional costs/ consequences.

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## Defensive Responses

- Maintain multiple bank relationships
- Borrow in the market as well as from banks
- Why do firms change their “main” banks?
  - DeGryse and van Cayseele (JFI 2000): loan terms worsen with relationship’s duration
  - U.S. studies find the opposite

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## Another Dark Side

Potential for illiquidity and bank runs.

Next time (mostly).

Diamond and Rajan (JF 2001)

- recognizes bank manager becomes informed
- might try to hold up depositors
- re-contracting is harder with more depositors
- demandable claims make everyone run, rather than tolerate a detrimental re-negotiation.

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## Benefits of Bank Lending

Fama (JME 1985): there must be something “special” about bank loans, to offset reserve requirements

- a) else commercial finance companies would dominate
- b) “Functional” perspective on financial services.

Black (JFE 1976) argues that managing payments provides banks with a comparative advantage in information production.

The value of deposit information to a lender:

- Berlin and Mester (JFI 1992)
- Norden and Weber (2008 wp)

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## Evidence

- Megginson and Partch (JFE 1986), James (JFE 1987)
- Many others find positive announcement effects.
- Lummer and McConnell (JFE 1989): new vs. renewed
- Billett-Garfinkel-Flannery (JF 1995) find that the announcement effect varies with lender's credit rating.

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- What's the news in an announced bank loan?
  - Firm will get financing, perhaps because bank sees positive information about it
  - Firm will be monitored.
    - Who benefits from this monitoring?
    - If bank senior and/or secured, what can s/h (or outside bondholders) infer from this?
- Why doesn't the bank expropriate benefits to the borrower?

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## Evidence (cont'd)

Fields, Fraser, Kolari (JMCB 2006): Positive announcement effect disappears.

Billett-Flannery-Garfinkel (JFQA 2006): negative long-run returns.

- Like only PVEQ, opposite SR and LR signs
- Billett et al. (2008 wp) confirms that BL per se have negative LR returns

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## Loans Sales/Syndications

Diamond and Williamson: the bank is viable only because the “monitor” has his own wealth at risk.

Yet the “underwrite and hold” model seems less relevant over time ...

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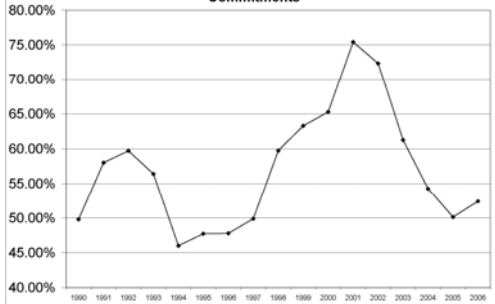
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Figure 3: Commitments in Syndicated Lending / Total Commitments



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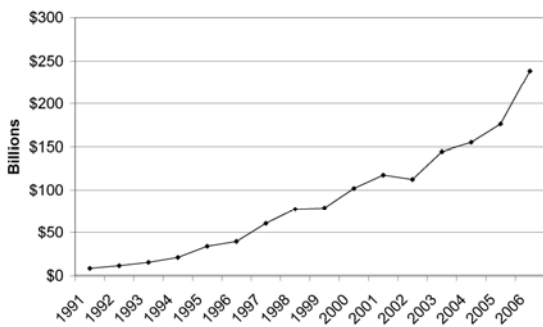
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Figure 4: Volume of Syndicated Loan Sales



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## How, then, do loans get sold?

If lenders gain information during relationships, there's a lemons problem

- In trying to "steal" loan customers
- In purchasing loans from someone else

Pennacchi (JF, 1995): keep a junior claim.

But this is rare, perhaps due to capital requirements.

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## Benefits of trading loans

- Liquidity
- Portfolio diversification

To obtain these benefits, there must be a mechanism to offset the lemons problem.

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## Skin in the Game

- Lead underwriter's future profits
- Mortgage GSEs will cut off an originator whose loans perform poorly.
- Hedge fund principals invest much of their own wealth (also, Bear Stearns employees).
- Grameen Bank or credit unions

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## Other Bank Activities: natural outgrowths?

- Risk management for self. Others too?
- OTC derivatives:
  - Credible counterparty
  - Relate to risk management
- Asset management services
  - For others
  - For bank's own account

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These models of banking firms raise two basic questions

1. Opacity (do this now)
2. Instability (next session)

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## Are Banks Opaque?

How can outsiders evaluate a firm holding illiquid, information-intensive assets?

Who cares?

- Supervisors
- Conclusions about market's efficiency and effectiveness

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## Evidence on Opacity

- Morgan (AER, 2002)
- Iannotta (JFSR, 2006)
- Flannery, Kwan and Nimalendran (JFE, 2004)
- 2007-8 markets

Opacity conclusion?

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## Summary

1. The problem
2. Some solutions
3. Problems with the solutions
4. Empirical evidence
5. Loan Sales
6. Opacity
7. Real sector effects  
(leave for Friday)

What else were  
you hoping to hear  
about???

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