

Topic 7 : Banking and the Management of Financial Institutions

EE431/438

Federic Mishkin, The Economics of Money, Banking and Financial Markets Chapter 9, pp
219 - 238

(available at the reserve section of the library, HG173 .M57 2007)

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- What is financial intermediary?
- Why does financial intermediary exist?
- What are the outcomes of the existence of financial intermediaries?
- The answers to these questions are the main focus of the second part of the course.
- In the second part of the course, we are going to deal with economic models with asymmetric information.
- This topic focuses on the first question, what is financial intermediary?
- (note that I do not use the whole chapter, only from page 219 to page 238 is required.)

Introduction

- Financial intermediaries are entities that intermediate between providers and users of financial capital . They borrow on one hand and lend on the other.
- Two main functions
 - ① to match transactors (like marriage brokers do)
 - ② to manage risk and transform the nature of claims (qualitative asset transformation)
 - produce information, qualitative asset transformation
- Why do we need financial intermediaries? “asymmetric information” , “transaction cost”, “economy of scale” (topic 8)
- Financial intermediaries are “firms” which produce “financial services”
- manufacturing firms hold inventories, machines, patents
- financial intermediaries hold large quantities of financial claims

Introduction

- Both finance their assets by issuing “debt” or “equity”
- One distinction between financial institutions and manufacturing business is that FIs are highly financial leveraged. In other words, their debt to equity ratio is very high.
- Industrial organization of banking: hardly to define “production”
 - ① deposits as inputs, loans as output
 - ② deposits and loans are output, inputs are human capital and physical capital
- To understand banking business, the simplest way is to look at the bank balance sheet
- Balance sheet : the source of funds = the use of funds, total liabilities + capital = total assets
- Liabilities : deposits, borrowings
- Asset : loans, vault cash (required reserves + excess reserves), securities

- Basic banking operation: Mr Johny opens a checking deposit account with Baht 100, the reserve requirement ratio is 10%.

Bangkok Bank Plc.

Assets	Liabilities
required reserves	checkable deposits
excess reserves	

- Assume that the bank choose not to hold any excess reserves but to make loans

Bangkok Bank Plc.

Assets	Liabilities
required reserves	checkable deposits
loans	

- Suppose that deposit rate is 1 percent and loan rate is 10% and the operation cost is 1 Baht. Then the bank is making a profit of $10\%(\dots\dots) - 1\%(\dots\dots) - 1 \text{ Baht}$
- Banking business is making profits by borrowing at low interest rate and then lending at high interest rate
- Is this an easy money making? liquidity risk, interest rate risk and default risk (credit risk)

1. Liquidity management and the role of reserves

- Banks borrow short terms to lend for long terms (maturity mismatch)
- They need to hold enough cash for their depositors to withdraw
- Why don't hold a large amount of reserve to prevent liquidity risk?
- Normally banks retain only some fractions of their customer's deposits as reserve
- In a normal situation, there is no problem in doing this. Why?
- Large number of depositors → the amount withdrawals become more predictable, interbank lending
- If a bank does not have enough cash to pay back their depositors on demand, there will be panics. Large number of depositors withdraw their deposits, not because they need to use the money, but because they fear the bank will fail. The effect is contagious. Interbank lending cannot help. Liquidity problem → bank failures → economy. (Bank runs and deposit insurance - Topic 10)

- How a bank can deal with deposit outflows : reserve requirement ratio = 10%

Bangkok Bank Plc. (million Baht)

Assets		Liabilities	
Reserves	20	checkable deposits	100
Loans	80	bank capital	10
Securities	10		

- Suppose there is a deposit outflow of 10 Baht

Bangkok Bank Plc.

Assets		Liabilities	
Reserves		checkable deposits	
Loans		bank capital	
Securities			

- Suppose there is a further deposit outflow of 10 M.Baht

Bangkok Bank Plc.	(million Baht)
Assets	Liabilities
Reserves	checkable deposits
Loans	bank capital
Securities	

- Now the bank has a problem. It does not have enough reserves as required.
- Basically, the bank has four options: there is a cost associated with all the four options.
 - 1 borrow in the interbank market
 - 2 sell some of its securities
 - 3 borrowing from the central bank
 - 4 reducing its loans

2. Credit risk management

- banks try to find borrowers who will pay high interest rates and unlikely to default on their loans
- this job is hard : it is very difficult to predict the riskiness of each borrower
- asymmetric information in the financial market
- adverse selection :
 - the bank should charge high(low) interest rate to high(low) risk customers
 - screening, credit analysis, long-term customer relationship
 - if the bank cannot separate high risk from low risk customers, it cannot price its financial products correctly
 - equilibrium discussed in topic 9
- moral hazard
 - monitoring, collateral requirement

3. Capital Adequacy Management

- What will happen if there is a default?

Bangkok Bank Plc.

Assets		Liabilities	
Reserves	20	checkable deposits	100
Loans	80	bank capital	10
Securities	10		

- Suppose that the bank find that 5 M.Baht of their loans become worthless.

Bangkok Bank Plc.

Assets		Liabilities	
Reserves		checkable deposits	
Loans		bank capital	
Securities			

- If the bank has held only 4 M.Baht capital, what will happen?

Bangkok Bank Plc.

Assets		Liabilities	
Reserves	20	checkable deposits	106
Loans	80	bank capital	4
Securities	10		

- Suppose that the bank find that 5 M.Baht of their loans become worthless.

Bangkok Bank Plc.

Assets		Liabilities	
Reserves		checkable deposits	
Loans		bank capital	
Securities			

- The bank would fail. It does not have enough asset to pay back its liability
- A bank maintains bank capital to lessen the chance that it will become insolvent.

- Why don't hold a large amount of capital?
- Large equity capital → lower return on equity for the bank's shareholders
- Returns on assets: $ROA = \frac{\text{net profit after taxes}}{\text{assets}}$
- Returns on equity: $ROE = \frac{\text{net profit after taxes}}{\text{equity}}$
- Equity multiplier: $EM = \frac{\text{assets}}{\text{equity}}$
- $ROE = ROA \times EM$
- As equity ↑, ROE
- “limited liability” → shareholders of the bank want to hold minimum amount of equity capital
- Bank equity capital is important to prevent banks from the risk of failures.
- Regulators has to set “minimum capital adequacy regulations” ; as suggested by BIS