EE432 Monetary Theory and Policy

Lecture 5 Financial Industry Structure

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Outline

- Banking Industry Structure
- Nondepository Institutions
- The Sources and Consequences of Runs, Panics, and Crises
- The Government Safety Net
- Regulation and Supervision of the Financial System
- Macro-Prudential Regulation

Chapter 13

Financial Industry Structure

Banking Industry Structure

Financial Innovation and the Decline of Traditional Banking

- **Low-cost source of funds**; *checkable deposits,* **declined**
- *Information technology* has **reduced** need for banks to finance **short-term credit needs**
- *Information technology* has **lowered transaction costs for other financial institutions**, ***increasing competition***

Financial Innovation and the Decline of Traditional Banking

- Banks' Responses
  - **Expand into <u>new and riskier</u> areas of lending**
    - ***Commercial real estate loans***
    - ***Corporate takeovers and leveraged buyouts***
  - Pursue **<u>off-balance-sheet</u>** activities
    - ***Non-interest income***

Are Bank Consolidation Good Things?

- **Benefits**
  - ***Driving inefficient banks out of business***
  - Also, increased efficiency from ***economies of scale and scope***
  - *Lower probability of bank failure* from ***more diversified portfolios***

Are Bank Consolidation Good Things?

- **Costs**
  - *Elimination of small banks* may lead to **less lending to small business**
  - Banks *expanding into new areas* may ***take increased risks and fail***

Nondepository Institutions

Nondepository Institutions

- There are major categories of **nondepository institutions:**
  - *Insurance companies*
  - *Pension funds*
  - *Securities firms,* including brokers, mutual-fund companies, and investment banks
- Nondepository institutions also include an assortment of *alternative intermediaries*

Insurance

- In terms of the financial system as a whole, **insurance companies** specialize in
  - **Pool small premiums** and **make large investment** with them
  - **Diversify risks** across a large population
  - **Screen and monitor policyholders** to *mitigate the problem of asymmetric information*

Life insurance

- **Life insurance** comes in two basic forms.
  - **Term life insurance** provides a ***payment to the policy holder's beneficiaries*** in the event of the *insured's death at any time* during the policy's term.
  - **Whole life insurance** is a combination of ***term life insurance*** and a ***savings account***.
    - The *policyholder pays* a **fixed premium** *over his/her lifetime* in return for a ***fixed benefit when the policyholder dies***.

Property and casualty insurance.

- *Car insurance* is an example of **property and casualty insurance**
  - It is a combination of
    - **Property insurance** on the car itself
    - **Casualty insurance** on the driver, who is protected *against liability for harm or injury* to *other people* or *their property*
- Holders of property and casualty insurance **pay premiums** in exchange for ***protection during the term of the policy***.

Two Types of Insurance

- On the balance sheets of insurance companies, these **promises to policyholders** show up as ***liabilities***.
- On the ***asset side***, *insurance companies* hold a combination of *stocks and bonds*.
- Property and casualty companies **profit from the fees** they *charge for administering the policies they write.*
- Because **assets** are essentially *reserves against sudden claims*, they **have to be liquid**.
- *Life insurance companies* hold assets of **longer maturity** than *property and casualty insurers*.

The Role of Insurance Companies

- Like life insurers, *property and casualty insurers* pool risks to generate ***predictable payouts.***
  - They *reduce risk* by *spreading it across many policies.*
- Although there is no way to know exactly which policies will require payment, the **insurance company** *can accurately estimate the percentage of policyholders who will file claims.*

The Role of Insurance Companies

- **Adverse selection** and **moral hazard** create significant problems in the insurance market.
  - A ***person with terminal cancer*** has an *incentive to buy life insurance* for the largest amount possible - that's **adverse selection**.
  - *Without fire insurance*, ***people would have more fire extinguishers in their houses*** - that's **moral hazard.**

The Role of Insurance Companies

- **Insurance companies** work hard to ***reduce*** *both* ***adverse selection*** *and* ***moral hazard***.
  - A person wanting life insurance needs a **physical exam.**
  - People who want auto insurance **must provide their driving records.**

The Role of Insurance Companies

- **Insurance companies** might also require *deductibles*.
  - These require the **insured** to ***pay the initial cost of repairing accidental damage***, up to some maximum amount.
- Or they may require ***coinsurance***.
  - This is where the *insurance company shoulders a percentage of the claim*, and the *insured assumes the rest.*

Pension Funds

- A **pension fund** offers people the ***ability to make premium payments today*** in exchange for ***promised payments under certain future circumstances***.
  - Provides a way to make sure that a **worker saves** and **has sufficient resources *in old age***.
  - They help savers to **diversify their risk**.
- By *pooling the savings of many small investors*, pension funds **spread the risk**.

Pension Funds

- People can use a *variety of methods to* ***save for retirement***, including *employer sponsored plans* and *individual savings plans*.
- Many **employer-sponsored plans** require a person **work for a certain number of years** *before qualifying for benefits*, a process called **vesting**.

Defined Benefit Plan

- **Retirement benefits** are ***defined by the plan***
- Participants receive a **life-time retirement income** *based on the number of years they worked at the company* and their *final salary*.
- *Employer contributions are adjusted to meet the benefits* and insure the plan is ***fully funded****—enough funds to meet future obligations*

Defined Contribution Plan

- **Contributions** are *defined by the plan*
- **Contribution** may be *made by employees or employers* or a *combination of the two*
- **Employee contributions** are *tax deferred—taxes payable when funds are withdrawn*
- **Benefits** depend on the *performance of the assets in the plan*
- **Avoids the problems of vesting** and funding
- Individual employee has the **ability to choose the assets** in which **to invest**

Securities Firms: Brokers, Mutual Funds, and Investment Banks

- The primary services of **brokerage firms** are:
  - ***Accounting*** (to keep track of customers' investment balances)
  - ***Custody services*** (to *make sure valuable records* such as stock certificates *are safe*)
  - ***Access to secondary markets*** (*in which customers can buy and sell* financial instruments)
- Brokers also **provide loans to customers** who wish to ***purchase stock on margin***.
  - They provide *liquidity*, both by *offering check-writing privileges with their investment accounts* and by *allowing investors to sell assets quickly.*

Securities Firms: Brokers, Mutual Funds, and Investment Banks

- **Mutual-fund companies** offer ***liquidity services*** as well.
- The primary function of mutual funds, is to **pool the small savings of individuals** in diversified portfolios that are composed of a wide variety of financial instruments.

Securities Firms: Brokers, Mutual Funds, and Investment Banks

- **Investment banks** are the channels through which ***firms raise funds in the capital markets***.
- Through their **underwriting services**, these investment banks ***issue new stocks*** and a variety of ***other debt instruments***.

Securities Firms: Brokers, Mutual Funds, and Investment Banks

- The underwriter **guarantees the price of a new issue** and ***then sells it to investors at a higher price.***
  - This is a practice called ***placing the issue***.
- The *underwriter* **profits** from the *difference between the price guaranteed* to the firm that issues the security and the *price at which the bond or stock is sold* to investors.

Securities Firms: Brokers, Mutual Funds, and Investment Banks

- Investment banks also ***provide advice*** *to firms that want to* ***merge*** *with or* ***acquire*** *other firms*.
- In facilitating these combinations, *investment banks perform a service to the economy*.

Chapter 14

Regulating the Financial System

The Sources and Consequences of Runs, Panics, and Crises

The Sources and Consequences of Runs, Panics, and Crises

- ***Banks' fragility arises*** from the fact that they *provide liquidity to depositors*, **allowing depositors to withdraw** their balances on demand.
- Banks also **promise to satisfy depositors' withdrawal requests** on a ***first-come, first-served basis.***

The Sources and Consequences of Runs, Panics, and Crises

- Reports that a **bank has become insolvent** can ***spread fear that it will run out of cash*** and close its doors.
- Such a **bank run** can ***cause a bank to fail***.

The Sources and Consequences of Runs, Panics, and Crises

- This phenomenon of **spreading panic** *on the part of depositors in banks* is **called contagion**.
- ***Information asymmetries*** are the reason that *a run on a single bank* can *turn into* a *bank panic*
- Depositors **cannot tell the difference between a good bank and a bad bank.**

The Government Safety Net

The Government Safety Net

There are three reasons for the **government to get involved in the financial system**:

1. To **protect investors**.
2. To **protect bank customers** *from monopolistic exploitation*.
3. To **safeguard the stability** of the *financial system.*

The Government Safety Net

1. The government is **obligated to protect small investors.**
   - Many are ***unable*** *to judge the* ***soundness*** ***of their financial institution.***
   - Only the ***force of law*** can **ensure a bank's honesty**.

The Government Safety Net

2. The growing tendency for ***small firms to merge into large ones*** **reduces competition**.
   - **Monopolies** are ***inefficient***, so the government intervenes to ***prevent*** *the firms in an industry from* ***becoming too large***.

The Government Safety Net

3. The mix of **liquidity risk and information asymmetries** means that the financial system is ***inherently unstable***.
   - A *single firm's failure* can *bring down* the *entire system.*

The Government Safety Net

- Government officials **protect investors** and **ensure stability** of the financial system.
  - ***lender of last resort***, *making loans to banks* that face *sudden deposit outflows*.
  - ***deposit insurance***, *guaranteeing* that *depositors receive the full value of their accounts* if the institution fails.
- However, the safety net causes bank managers to take on too much risk.

Problems Created by the Government Safety Net

- Government officials are worried about the **largest institutions** because they can ***pose a threat to the entire financial system*** if they fail.
- Some intermediaries are treated as ***too big to fail*** or ***too interconnected to fail***.
  - ***too complex to shut down***
  - ***too big to resolve***
  - special legal definition to such a firm: **systemically important financial institution (SIFI).**

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Systemically important financial institution (SIFI)

BANK OF THAILAND

BOT Press Release

Communications and Relations Office, Corporate Communications Department
Tel. 0-2283-5016-7 Fax. 0-2281-5648 www.bot.or.th

No. 47/2017

Regulations on Supervision of Domestic Systemically Important Banks

Mr. Somboon Chitphentom, Assistant Governor, Financial Institutions Policy Group, added that, BOT uses 4 main indicators to identify D-SIBs i.e. (1) the size of the financial institution, (2) the interconnectedness between financial institutions as measured by interbank transactions, (3.) the role as provider of financial infrastructure, and (4.) the complexity of financial products or business/operational structure. These indicators are widely adopted by other foreign regulators.

Based on the above indicators, 5 commercial banks are identified as D-SIBs, namely Bangkok Bank, Krung Thai Bank, Bank of Ayudhya, Kasikornbank, and the Siam Commercial Bank.

Problems Created by the Government Safety Net

- Whenever the government ***provides a safety net <u>without charging an appropriate fee in advance of the protection</u>***, they create an **incentive** for financial institutions **to take risks** that can **threaten the system as a whole**.
- It compounds the problem of **<u>moral hazard</u>**.

Government Deposit Insurance

- When a **banks fails**, the **Government Deposit Insurance** resolves the insolvency either by ***(i) closing the institution*** or ***(ii) finding a buyer***.
- **Closing the bank** is called the ***payoff method***.
  - ***pay all the bank's depositors***, then ***sell all the bank's assets.***
- The more commonly applied, is called the ***purchase-and-assumption method***.
  - ***finds a firm willing to take over*** the failed bank.

Government Deposit Insurance

- Depositors ***prefer*** the *purchase-and-assumption method.*
  - The transition is typically ***seamless***.
  - ***No depositors suffer a loss***.
- Deposit insurance *clearly helped* to **prevent runs** on commercial banks.
- Nonetheless, most economic historians *believe government insurance* ***led to rise in risk***.

Government Deposit Insurance

- Insurance *only* *covers* ***depository institutions***.
- However, as the system developed, **shadow banks** *gained importance*.
  - They face the *risk of runs* by their *short-term creditors*
  - Nonetheless, these nonbanks ***lack the benefits of deposit insurance.***

Problems Created by the Government Safety Net

- In the aftermath of the crisis, *limiting the unintended consequences* of the ***government safety net*** is the *leading problem facing regulators*.
  - Some argue that **too big to fail institutions** are *just too big* and *need to be broken up*.
  - This does *not eliminate the bad incentives from deposit insurance* and *government guarantees to smaller institutions*.

Problems Created by the Government Safety Net

- The conflict between crisis prevention and crisis mitigation exemplifies the problem of ***time consistency***.
  - *In good times*, governments and central banks say ***they will not bail out financial intermediaries***
  - The intermediaries know that *in a time of crisis*, policymakers will have an ***incentive to bail them out***.
  - Promises in the good times ***lack credibility***.

Regulation and Supervision of the Financial System

Regulation and Supervision of the Financial System

- Government officials employ *three strategies to ensure that the* ***risks created by the safety net*** *are* ***contained***.
  - ***Regulation*** establishes a *set of specific rules for intermediaries to follow*.
  - ***Supervision*** provides *general oversight of financial institutions.*
  - ***Examination*** of an *institution's books by specialists* provides *detailed information on the firms' operation*.

Regulation and Supervision of the Financial System

Regulatory requirements designed to **minimize the cost of failures** to the public:

1. *New banks must obtain* a **charter (license)**.
2. Once open, **regulations**
   - **Restricts competition**
   - Specifies what **assets the bank cannot hold**
   - Requires the bank to **hold a minimum level of capital**
   - Makes **public information** about the bank's balance sheet

Minimum level of capital

Bank of Thailand

1 February 2017

To Managers

All finance companies

Circular No. BOT.RPD. (21) C.186/2560 Regulations on Supervision of finance companies

Finance companies shall hold capital, at the end of the day[1], at least equal to the ratios in the following table as from 1 July 2017 onwards:

Capital ratio	(Percent)
Common equity tier 1 ratio: CET1 ratio	4.5
Tier 1 ratio	6.0
Total capital ratio	8.5

The **tier 1 capital ratio** measures a bank's **core equity capital against its total risk-weighted assets** – *which include all the assets the bank holds that are systematically weighted for credit risk*. For example, mortgage loans would be assigned a 50% weighting.

Restrictions on Competition

- ***Bank mergers require government approval***.
- One long-standing goal of financial regulators has been *to* ***prevent*** *banks from growing* ***too big and too powerful***.
- Before *granting a merger, officials must be convinced* on two points.
  1. The new bank must **not constitute a monopoly**.
  2. The *small bank's customers* must be ***well served by the merger***.

Restrictions on Competition

- *Competition* ***reduces the prices*** customers must pay.
- **Lower interest margins** and **reduced fee income** cause bankers to ***look for other ways to turn a profit.***
  - Some may be temped to assume ***more risk*** than advisable**, to increase leverage, or to rely excessively on short term funding**.
- Thus, government officials can explicitly **restrict competition.**

Asset Holding Restrictions and Minimum Capital Requirements

- One way to prevent bankers from exploiting their safety net is **to restrict banks' balance sheets.**
- **Minimum capital requirements** complement those limitations on bank assets.
- Capital requirements take two basic forms:
  1. Most banks are required to keep their ***ratio of capital to assets above some minimum level***, regardless of the structure of their balance sheets.
  2. Banks are required to ***hold capital*** in proportion to the ***riskiness of their operations***.

Supervision and Examination

- The government *enforces banking rules and regulations* through an elaborate **oversight** process called **supervision**.
  - This relies on a combination of **monitoring** and **inspection**.
  - It is done both **remotely** and through **on-site examination**.

Supervision and Examination

- The most important part of bank examination is the **evaluation of past-due loans**.
- The examiner's job is to make sure that ***when borrowers stop making payments***, ***loans are written off*** and the ***bank's balance sheet properly reflects the losses***.

Supervision and Examination

- Supervisors use what is called the **CAMELS criteria** to *evaluate the health of the banks* they monitor.
  - **Capital adequacy**
  - **Asset quality**
  - **Management**
  - **Earnings**
  - **Liquidity**
  - **Sensitivity to risk**

Macro-Prudential Regulation

Micro-Prudential Versus Macro-Prudential Regulation

- The government official's job is *not to stabilize the profits of an* ***individual bank*** or *insurance company.*
- The regulator's goal should be to **prevent large-scale catastrophes.**

Micro-Prudential Versus Macro-Prudential Regulation

- Regulators are ***broadening*** *their focus* ***beyond micro-prudential oversight*** to encompass ***macro-prudential regulation***.
- Micro-prudential regulation aims at **limiting the risks *within* intermediaries** in order to ***reduce the possibility of an individual institution's failure***.

Micro-Prudential Versus Macro-Prudential Regulation

- *Micro-prudential* oversight is *insufficient to prevent* ***systemic risks***.
- **Macro-prudential regulation** treats ***systemic risk*** *taking by an intermediary* as a kind of ***pollution*** that **spills over** *to other financial institutions and markets*.

Micro-Prudential Versus Macro-Prudential Regulation

- Common Exposure
  - When ***many institutions*** have an ***exposure to the same specific risk factor***, it can make the **system vulnerable** *to a shock to that factor*.
  - Intermediaries may be ***directly*** **exposed** to a *fragile institution through financial contracts*.

Micro-Prudential Versus Macro-Prudential Regulation

- Common Exposure
  - They may be **exposed *indirectly*** and unknowingly *through their counterparties*, who are themselves *directly exposed to a fragile institution*.
  - *All institutions may be vulnerable* to the same underlying risks.

Micro-Prudential Versus Macro-Prudential Regulation

- Pro-Cyclicality
  - *Financial activity* is prone to *vicious cycles.*
  - The **interaction** between **financial** and **economic** activity can be ***mutually reinforcing*** leading to ***unsustainable booms and busts***.

Micro-Prudential Versus Macro-Prudential Regulation

- Macro-Prudential Policy
  - This aims to **make intermediaries** bear, or ***internalize***, **the costs that their behavior imposes on others**.
  - *To be effective in limiting systemic threats*, a **systemic capital surcharge** probably would be disproportionately ***larger for firms that contribute the most to systemic risk***
  - Intermediaries would have an *incentive to limit the systemic risks* they create.

Micro-Prudential Versus Macro-Prudential Regulation

- Macro-prudential regulators *could also make capital requirements vary* with the business cycle.
- In **good times**, **capital requirements would rise** *above the long-run average* to create a *capital buffer against adverse shocks* and to *discourage euphoria*.

Micro-Prudential Versus Macro-Prudential Regulation

- Regulators could *require banks* to buy **catastrophe insurance**.
- Could also have banks issue so-called **contingent convertible bonds** that *convert to equity in the event of a capital shortfall*.

Micro-Prudential Versus Macro-Prudential Regulation

Ultimately, addressing *systemic risk* will require a *broad framework* of **macro-prudential supervision** that includes

1. **Rules and mechanisms** that ***promote better risk management*** on the part of intermediaries, and
2. **Reforms** that ***reduce the vulnerability of the financial system*** to the liquidation of any single financial firm.

End of lecture