

# Essex EC248-2-SP

## Lecture 9

### Financial Innovations: Nonbank Finance and Electronic Money

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# Plan of Talk

- **Introduction**
  1. Disintermediation
  2. Nonbank Finance: Types and Innovations
  3. Electronic Funds Transfer: Types and Innovations
  4. Seigniorage
- **Wrap-up**

# Aims and Learning Outcomes

- **Aim:**
  - Discuss the blurring boundary between banks and nonbank financial intermediaries as well as electronic money from the perspective of financial innovation
- **Learning outcomes**
  - Define and discuss the process of disintermediation
  - Compare the various forms of nonbank finance
  - Distinguish the major types of electronic money
  - Define and discuss seigniorage in the light of financial innovation

# Banks vs. Nonbanks in US: Disintermediation

**Table 1 Relative Shares of Total Financial Intermediary Assets, 1960–2002 (percent)**

|                                        | 1960  | 1970  | 1980  | 1990  | 2002  |
|----------------------------------------|-------|-------|-------|-------|-------|
| <b>Insurance Companies</b>             |       |       |       |       |       |
| Life insurance                         | 19.6  | 15.3  | 11.5  | 12.5  | 13.6  |
| Property and casualty                  | 4.4   | 3.8   | 4.5   | 4.9   | 3.7   |
| <b>Pension Funds</b>                   |       |       |       |       |       |
| Private                                | 6.4   | 8.4   | 12.5  | 14.9  | 14.7  |
| Public (state and local government)    | 3.3   | 4.6   | 4.9   | 6.7   | 7.9   |
| <b>Finance Companies</b>               | 4.7   | 4.9   | 5.1   | 5.6   | 3.2   |
| <b>Mutual Funds</b>                    |       |       |       |       |       |
| Stock and bond                         | 2.9   | 3.6   | 1.7   | 5.9   | 10.6  |
| Money market                           | 0.0   | 0.0   | 1.9   | 4.6   | 8.8   |
| <b>Depository Institutions (Banks)</b> |       |       |       |       |       |
| Commercial banks                       | 38.6  | 38.5  | 36.7  | 30.4  | 29.8  |
| S&L and mutual savings banks           | 19.0  | 19.4  | 19.6  | 12.5  | 5.6   |
| Credit unions                          | 1.1   | 1.4   | 1.6   | 2.0   | 2.3   |
| Total                                  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Federal Reserve Flow of Funds Accounts.

# Insurance Companies

## **Life Insurance Companies**

1. Regulated by states, not federal government, as no widespread failures
2. Hold illiquid long-term assets, as death rates predictable: mortgages
3. Since 1970s, restructure to become also managers of pension funds
4. Recently, OCC encourages banks to enter the insurance field

## **Property & Casualty Insurance Companies**

1. Losses from fire, theft, auto-accident, negligence, natural disaster
2. Regulated by states
3. Hold more liquid assets: 50% US Government securities
4. **Reinsurance:** a portion of the risk is allocated to another insurance company in exchange for a portion of the premium, *Lloyd's* association of insurers

Insurance Management: *adverse selection* (1.-2.) and *moral hazard* (3.-8.)

1. *Screening:* (medical) evaluation; similar to *credit score* in lending
2. *Risk-based premiums:* young males more likely to have auto-accidents
3. *Restrictive provisions:* helmets when renting motor scooters; *covenants*
4. *Prevention of fraud:* claim when restrictive provisions not complied with
5. *Cancellation of insurance:* a driver gets too many speeding tickets
6. *Deductible:* a fixed amount by which the insured's loss is reduced
7. *Coinsurance:* 80% of medical bills covered by insurer, 20% by insured
8. *Limits on amounts of insurance:* cannot insure a car more than its value

# Institutional Investors

**Pension Funds:** ensure income payments on retirement

1. Rapid growth: contributions tax-deductible for both employers and employees
2. Bigger role in stock market: payments predictable => buy LT securities
3. Problem of underfunding: *contributions* and earnings less than *benefits*
4. *Private*
  - regulated by Department of Labor
  - insured by the Pension Benefit Guarantee Corporation (Penny Benny) under the Employment Retirement Income Security Act (ERISA) of 1974
5. *Public*
  - A. Social Security
    - since 1935, covers all individuals employed in the private sector
    - “pay as you go” ⇔ benefits paid out of current contributions => underfunding
  - B. State and local pension plans

**Mutual Funds:** pool resources of many small investors selling them shares

1. Regulated by SEC
2. Open-end vs. closed-end: shares can be *redeemed* at a price tied to the asset value of the fund or not
3. Load vs. no-load: *commission* paid to selling broker or not
4. *Money market* mutual funds: shares function as checkable deposits
5. *Hedge* funds: 1998, near collapse of *Long-Term Capital Management*

# Finance Companies, Governments, Markets

**Finance Companies:** borrow in large amounts to lend in small amounts

- Minimal regulation by states
- Rapid growth
- Three types
  1. *Sales* finance companies: loans to buy items from a particular company
  2. *Consumer* finance companies: loans for furniture, home improvements
  3. *Business* finance companies
    - *factoring*: form of specialised credit by making loans and purchasing accounts receivable (bills owed to the firm) at a discount
    - *leasing*: railroad cars, jet planes, computers

## **Government Financial Intermediation**

1. Federal credit agencies: mostly, helping residential housing and agriculture
2. Government guarantees to private loans: moral hazard problem

**Securities Market Institutions:** all are regulated by SEC

1. *Investment bank(er)s*: *primary* markets, initial public offerings (IPOs) vs seasoned issues, underwriters guarantee a price and sell to the public
2. *Securities* brokers (*agents* for investors), dealers (hold inventories of securities and trade *on their own account*) and specialists: *secondary* markets
3. *Brokerage* firms: investment bank(er)'s, broker's and dealer's activities
4. *Organised* exchanges (NYSE, AMEX) vs *OTC* markets (NASDAQ)

# Trust Services

- A **trust institution**: a legal entity that can hold and manage assets for one or more beneficiaries over time
  - *Grantor* is the creator of the trust
  - *Trustee* is the manager of the trust
  - *Beneficiaries* receive the benefits of the trust
- **Business trusts** historically were formed among firms in the same industry to avoid competition and gain monopoly power
  - The *Sherman Antitrust Act* of 1890 in US and other legislation struck down such anti-competitive behavior
  - Today *holding companies* (ownership of affiliated firms) and *consortiums* (association or partnership of financial institutions but no cross ownership) have replaced trusts as a common form of business organisation
- Trust institutions *now handle* employee benefit programmes, personal trusts and estates, and corporate trusts
  - *Real estate investment trusts (REITs)* is a trust that purchases real estate and offers shares of ownership to investors
  - *Trust companies* can be within or outside a bank for purposes of estate planning to distribute assets of an individual after death and reduce taxes for beneficiaries: US federal estate tax rates range from 37% to 55%!



# End of Separation of Banking in US

- **1933:** *Glass-Steagall Act*, which was part of the 1933 *Banking Act*, **separated** *commercial* banking from *investment* banking
- **1987:** the Federal Reserve **reinterpreted** this Act to mean that *bank* holding companies could own nonbank securities subsidiaries if approved by the Fed
- **1999:** the *Financial Services Modernization (Gramm-Leach-Bliley) Act* **dropped barriers** under *Glass-Steagall*: now *financial* ( $\neq$  *bank*) holding companies can offer securities and insurance services
- Some **related financial innovations**
  - *Sweep accounts* (at banks or nonbanks) for temporary transfer of funds from non-interest bearing accounts into an investment account earning higher yields
  - *Private banking* provides custom-tailored services to high net worth individuals: wealth management (tax optimisation), art banking (jewellery)

# Electronic Banking

- Any banking activity accessed by **electronic means**
  - *bank* and *nonbank* providers
  - *three distinct areas*
    1. *retail* (small-value) payments/services
    2. *wholesale* (large-value) payments/services
    3. *other* payments/services
- **1870s:** began with transfer of funds by **telegraph** in US
- **1968: ATMs** appear
  - as the most visible example of electronic banking
  - now about 250,000 in number in US
- **1990s: Internet** => rapid growth of electronic financial services
- In **1998** in US
  - cash (87%) dominates the *volume* of payments transactions, but
  - the *value* of transactions is dominated by electronic transfers (89%)

# Retail vs Wholesale Electronic Payments

- **Retail (*small-value*)**
  - individual payments for goods and services (by cash and checks)
  - electronic payments will lower the costs of operating the payments system
  - geographic boundaries for delivering retail banking services practically eliminated by electronic services
  - privacy issues and potential for fraud and theft
- **Wholesale (*large-value*)**
  - payments between businesses, banks, governments
- ***Internet banking*: both retail and wholesale services**
  - retail services for bill payments and brokerage services
  - also wholesale services for corporate customers, such as derivatives trading, foreign exchange, letters of credit, and global treasury services
- **Automatic Teller Machines (ATMs): *retail* services**
  - full-service ATMs to merely cash dispensers available
  - proprietary systems
  - shared/regional systems
  - national/international systems: network externalities

# EBPP and EFT

- **Electronic bill presentment and payment (EBPP)**
  - Recurring bills and preauthorised debits to checking accounts: e.g., utility, insurance, and credit card bills
  - More convenient to customers
  - Decreases transactions costs to banks as well as time to process payments
  - System operator (e.g., bank or computer company) posts bills to customers, who direct payments to be made immediately or later
  - 1970s: *Automated Clearing House (ACH)* network established to provide an electronic alternative to the traditional paper-based check clearing systems
  - With Internet, paper based systems are further diminishing in importance
- **Electronic funds transfer (EFT)**
  - *Debt Collection Improvement Act* of 1996 required that all US government payments to individuals be made by EFTs
  - *Electronic Funds Transfer Act* of 1978 provides guidelines for financial institutions use of EFT

# Electronic (Digital) Money

- **Many forms**
  - *Online accounts*: for transfer over the *Internet*
  - *Stored value cards*
    - contain a magnetic strip recording its value
    - belong to a closed system: can only be used at specific locations
    - can be reloaded with additional funds for payment
  - *Smart cards* (also called an *electronic purse*)
    - contain a computer chip recording its value
    - belong to an open system: can be used at multiple locations
    - can be reloaded with additional funds for payment
  - *Credit cards*
    - “read” by Electronic Data Capture (EDC) terminals at PoS
    - thanks to a cryptographic standard, known as secure electronic transactions (SET), can also be used over the Internet
  - *Debit cards*: more recently
- **Advantages and disadvantages**
  - Fast, convenient, used in stores and over Internet (network externalities)
  - Not all merchants accept all forms of electronic money
  - Security and privacy could be problems: need to verify identity
  - Government policy is unclear on deposit insurance, who can “coin” digitised money, and control of this money supply

# Wholesale (Large-Value) Transfers

- **Fedwire**
  - a *real-time gross settlements (RTGS) system*: processes each transaction individually rather than in batches (over time)
  - the Fed grants *finality*: assumes credit risk of the funds transfer
- **CHIPS: Clearing House Interbank Payments System**
  - operated in New York since 1970 as an electronic replacement for paper checks in international dollar payments
  - *multilateral netting* is provided to get each participant's single net position vis-à-vis other participants: *same-day settlement*
  - largest privately operated payments system, never failed to settle
  - settlement risk: credit + unwinding (order reversal) + liquidity risk
- **SWIFT: Society for Worldwide Interbank Financial Telecommunications (in Belgium)**
  - cooperatively owned by banks around the world
  - used primarily for communications, and CHIPS and Fedwire handle payments transfers

# Seigniorage

- *Seigniorage* **originates** from *seigneur*, ruler in French
  - the fee that merchants paid to the king to have their bullion made into coins
  - another fee, *brassage*, was charged to coin the bullion thereby standardising it
  - difference b/n face value and cost of production of money: e.g., \$0.25 coin costs \$0.05 to produce, so seigniorage is \$0.20
- **Today** in US, seigniorage is considered to be
  - the interest saved by the Treasury from having currency, i.e. non-interest bearing debt, circulate as medium of exchange
  - or, similarly, the profit for the Treasury resulting from the difference b/n the interest earned on assets financed by issuing currency and the cost of issuing and redeeming it
- New, **electronic forms of money**
  - are the latest version of private money (competing with the Treasury)
  - which will diminish, when widespread, the Treasury's profit on seigniorage
  - Boeschoten and Hebbink (1996) estimate this loss for G10 at 0.7% of GDP

# Concluding Wrap-Up

- **What have we learnt?**
  - What is meant by disintermediation
  - Which the principal nonbank financial institutions and services are
  - How the various forms of electronic money differ
  - Why seigniorage declines with electronic financial innovation
- **Where we go next:** to the overall effect of financial innovations on monetary control