Essex EC248-2-SP
Lecture 9

Financial Innovations: Nonbank Finance and Electronic Money

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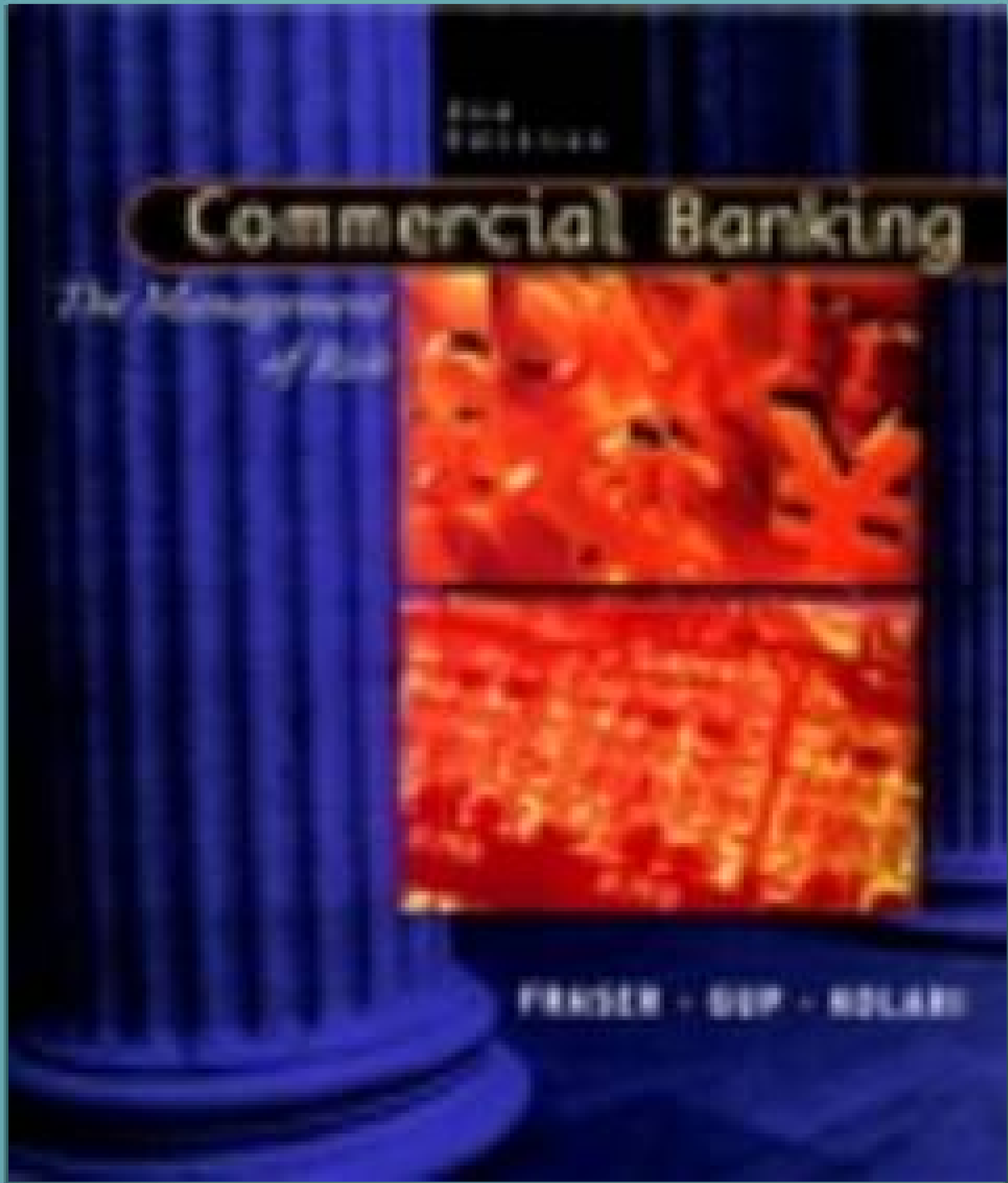

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Plan of Talk

- **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
Insurance Companies					
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
Pension Funds					
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
Finance Companies	4.7	4.9	5.1	5.6	3.2
Mutual Funds					
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
Depository Institutions (Banks)					
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* (≠ *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 standarising 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