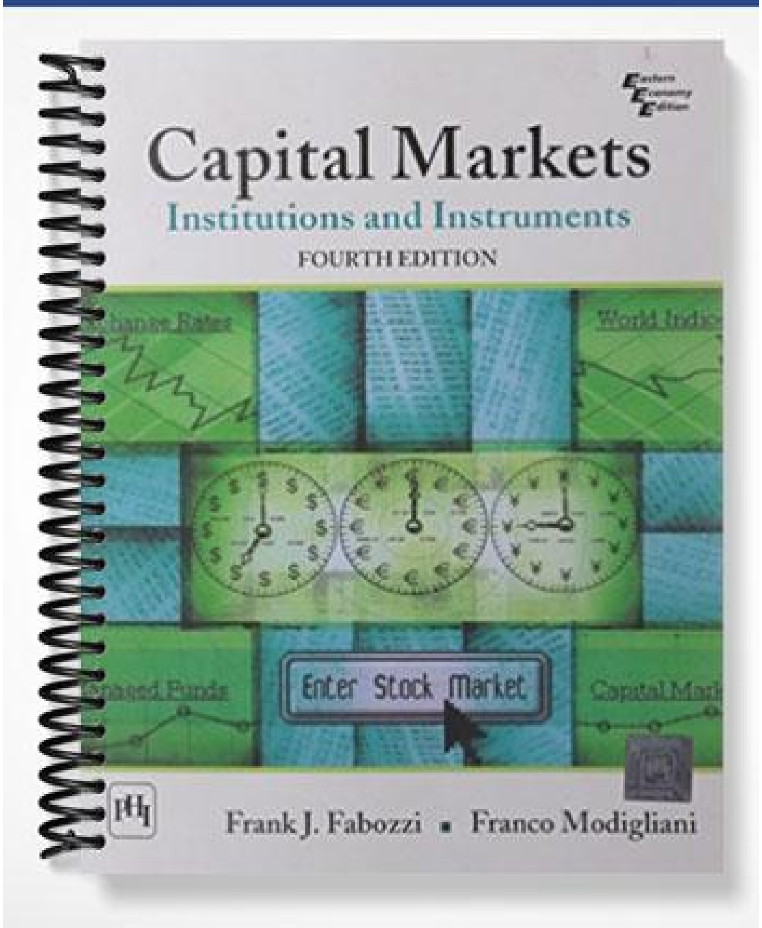
SOLUTIONS MANUAL



CHAPTER 2
OVERVIEW OF MARKET PARTICIPANTS AND FINANCIAL INNOVATION

This chapter discusses participants in financial markets, with a special emphasis on financial intermediaries and regulators.

THE PLAYERS

The Federal Reserve Bank Board publishes **flow of funds accounts**, which show where entities that participate in the financial markets obtain their funds and where they invest those funds.

Governments

The U.S. government raises funds by issuing **Treasury securities**. These securities are issued by the U.S. Department of Treasury. The federal government has agencies that participate in the financial markets by buying and selling securities. There are **government sponsored enterprises (GSE)** that are publicly owned corporations.

State and local governments are also market participants. They can be both issuers, buyers and sellers of securities.

Nonfinancial Corporations

Nonfarm corporations are classified as financial and nonfinancial corporations. Financial corporations include depository institutions, insurance companies, and investment banks. Nonfinancial corporations issue securities. Some corporations have subsidiaries that are involved in the same activities as financial corporations (**captive finance companies**), e.g., Ford Motor Credit.

Depository Institutions

Depository institutions include commercial banks, savings and loans associations, savings banks, and credit unions. These institutions use deposits to make loans to others.

Insurance Companies

Insurance companies include life insurance and property and casualty insurance companies. Insurers take premium in advance of any fortuity, and they invest the premium in between the time of receipt and payout of claims.

Asset Management Firms

Asset management firms manage the funds of individuals, businesses, and state and local governments. Their primary compensation is the fees that they earn. Some asset management firms are subsidiaries of other financial participants such as commercial banks, insurance companies, and investment banks.

Investment Banks

Investment banks perform two general functions: (1) investment banks assist entities in obtaining funds, (2) they act as brokers and dealers in buying and selling of securities. An investment bank can be a subsidiary of a commercial bank or an insurance company.

Nonprofit Organizations

Nonprofit organizations do not have as their primary purpose profit, but instead have some other purpose that advances the private or public interest, e.g., education or religion. This does not mean that they do not care about profit, since profit funds the activities. **Foundations** or **endowments** are entities mainly set up by wealthy persons or families. The initial bequest and investment income are used to fund the mission of the entities. Qualified foundations are tax exempt.

Foreign Investors

Foreign investors participate in the U.S. financial market, including individuals, firms and governments. Central governments participate in the U.S. market through their **central bank**, which is the country's monetary authority. A central bank participates by buying or selling financial assets in the U.S. financial market in order to either stabilize their currency relative to the U.S. dollar or as an investment vehicle. A **supranational institution** is an organization formed by two or more central governments through international treatises. These entities promote economic development for their member countries.

FINANCIAL INSTITIONS

Financial institutions are financial businesses. They can be some of the world's largest corporations, e.g., Citigroup and JP Morgan Chase. Financial institutions provide a variety of services: (1) transform financial assets into different forms of assets per financial intermediaries, (2) exchange financial assets for customers, (3) exchange financial assets for their own account, (4) assist in creating financial assets and trading them in a market, (5) provide investment advice, (6) manage the portfolios of other market participants.

ROLE OF FINANCIAL INTERMEDIARIES

Financial intermediaries obtain funds by issuing financial claims against themselves to market participants, then investing those funds. Their investments can be in the form of loans or securities, referred to as **direct investments**.

Financial intermediaries transform financial assets that are less desirable for a large part of the public into other financial assets—their own liabilities—which are more widely preferred by the public. This transformation involves at least one of four economic functions: (1) provide maturity intermediation, (2) reduce risk via diversification, (3) reduce the costs of contracting and information processing, (4) provide a payments mechanism.

Maturity Intermediation

Maturity intermediation is the process by which a commercial bank transforms a longer term asset into a shorter term one by giving the borrower a loan for the length of time sought and the investor/depositor a financial asset for the desired investment horizon. There are two implications of maturity intermediation: (1) investors have more choices on maturity of investments; (2) the cost of longterm borrowing is reduced.

Risk Reduction via Diversification

Diversification is the process of transforming more risky assets into less risky ones. Investors may do this as well, but financial intermediaries can reduce the cost.

Reducing the Costs of Contracting and Information Processing

Financial intermediaries reduce the **contracting costs** and **information processing costs** by maintaining an expertise, acquiring information, and standardizing contracting and information processes. In other words, economies of scale can be realized.

Providing a Payments Mechanism

Financial intermediaries provide payment mechanisms such as checks, credit cards, debit cards, and electronic transfer. The ability to make payments without the use of cash is critical for the functioning of a financial market.

OVERVIEW OF ASSET/LIABILITY MANAGEMENT FOR FINANCIAL INSTITUTIONS

To understand why managers of financial institutions invest in particular types of financial assets and the types of investment strategies, it is necessary to have a general understanding of the asset/liability problem.

Nature of Liabilities

The liabilities of financial institutions can be classified into four types.

Type I Liabilities: Both the amount of the expected cash outflows and their timing are known. These are liabilities such as fixed-rate certificates of deposits and **guaranteed investment contracts** (GICs), which provide a guarantee of interest rate up to some specified maturity. The former are among liabilities of depository institutions, and the latter are offered by life insurance companies.

Type II Liabilities: Cash outflows are known, but timing is not (e.g., life insurance policies).

Type III Liabilities: Cash outflows are unknown, but the timing of repayment is known (e.g., floating-rate certificates of deposit).

Type IV Liabilities: Neither cash outflows nor their timing are known with certainty (e.g., most insurance products and pension obligations).

Liquidity Needs

Because of uncertain liabilities amounts and timing, financial institutions must be prepared with sufficient cash to meet their obligations. Additionally, liabilities can be changed as a result of contractual rights of investors, such as early withdraw.

REGULATION OF FINANCIAL MARKETS

Justification of Regulation

The standard explanation for regulation is that the market, left to itself, cannot produce its goods and services in an efficient manner. A **market failure** occurs when it cannot maintain all the requirements for a competitive situation. Most regulatory mechanisms resulted from the stock market crash of 1929 and the Great Depression in the 1930s.

Forms of Federal Government Regulation of Financial Markets

Government regulation can take four general forms: (1) disclosure regulation; (2) financial activity regulation; (3) regulation of financial institution; and (4) regulations of foreign participants.

Disclosure Regulation: The problem of "asymmetric information" between investors and managers requires regulation of disclosure. The "agent" manager invariably has better information than the investors. The U.S. has disclosure regulation in the form of the Securities Act of 1933 and the Securities Exchange Act of 1934. These acts require certain disclosure by issuers, and the 1934 Act created the Securities and Exchange Commission (SEC). The regulatory scheme is one of disclosure, and not one of evaluating investment opportunities.

Financial Activity Regulation: This consists of rules about traders of securities and trading on financial markets, e.g., insider trading rules and the regulations of exchanges.

Regulation of Financial Institutions: This consists of governmental monitoring of lending, borrowing, and funding. Historically, the U.S. government imposed an extensive array of regulations on financial institutions. Most of this legislation traces its historical roots to the Great Depression in the 1930s.

Regulation of Foreign Participants: Government regulation of foreign participants limits the roles of foreign firms can play in domestic markets and their ownership or control of financial institutions. The U.S. extensively reviews and changes its policies regarding foreign firms' activities in the U.S. financial markets on a regular basis.

FINANCIAL INNOVATION

Categorizations of Financial Innovations

Since the 1960s, there has been a surge of financial innovations. One way to classify these innovations is based on a functional approach. The Economic Council of Canada has classified financial innovations into the three broad categories: (1) market-broadening instruments, (2) risk-management instruments, and (3) arbitraging instruments and processes.

The following classification system is more specific and it was suggested by the Bank for International Settlements: (1) price-risk transferring innovations, (2) credit-risk transferring instruments, (3) liquidity-generating innovations, (4) credit-generating instruments, and (5) equity-generating instruments.

According to the economist Joseph Schumpter, **process innovation** is one in which an existing product can be produced or service provided more efficiently than that of a current existing product or service. A **product innovation** means the introduction of a new product or service that does not currently exist in the market. Stephen Ross suggests the following two classes of financial innovation: (1) new financial products, (financial assets and derivative instruments) better suited to the circumstances of the time (e.g. to inflation) and the markets in which they trade; and (2) dynamic trading strategies that primarily use these financial products.

Motivation for Financial Innovation

There are two extreme views of financial innovation: (1) innovation represents efforts to circumvent (or "arbitrage") regulation and find loopholes to tax rules; or (2), innovation provides more efficient vehicles or processes for redistributing risks among market participants. Many innovations ultimately result in greater efficiencies.

The fundamental causes of financial innovation are: (1) increased volatility of interest rates, inflation, exchange rates, and/or equity prices, (2) advances in computer and telecommunications technologies, (3) greater sophistication and educational training of professional market participants, (4) financial intermediary competition, (5) incentives to get around regulations and/or tax laws, (6) changing global patterns of financial wealth.

Securitization and Financial Innovation

One of the most important innovations is **securitization**. This process has two meanings. In the broadest sense, securitization is a process by which a financial relationship is converted into a financial transaction. A financial transaction is the coming together of two or more entities; a financial relationship is their staying together. Corporate bonds is an example of the result of a securitization, i.e., the process of borrowing moving from banks (financial relationship) to the issuance of bond (financial transaction).

In today's capital markets, securitization is a process by which a corporation pools together its interest in identifiable future cash flows, transfers the claims on those future cash flows to another entity that is specifically crated for the sole purpose of holding those financial claims, and then utilize those future cash flows to pay off investors over time.

In essence, assets that were once intermediated (such as credit card loan receivables) can be packaged and sold to investors as securities, allowing institutions to free up valuable capital for other investments and allowing investors to participate in the desired amount of risk. Securitization represents the evolution of financial markets beyond the role of the traditional banking firm. In addition, because securitized assets are no longer attributed to the bank or institution itself, securitization can help institutions manage their capital adequacy.

The more general movement in the financial markets is in the direction of using the public market rather than relying on financial intermediaries to take on risks, including insurance risks. For example, catastrophe-linked bond ("cat bond") can be sold by a corporation to protect against risks that would normally be covered by an insurance company. The payment made to the investors in cat bonds would depend on whether the insured catastrophe occurred.

ANSWERS TO QUESTIONS

1. The household sector acts as a borrower when it takes a car loan or home mortgage. It is a lender of funds by providing deposits to financial institutions. These deposits are financial assets to the household, but liabilities of the intermediary.

2. The entities included in the nonfinancial business sector are nonfinancial business corporations, farms and nonfarm businesses.

3. Some nonfinancial businesses have subsidiaries that provide financial services, e.g., General Motors Acceptance Corporation.

4. Government agencies participate in the buying and selling of securities. Government sponsored entities such as Fannie Mae and Freddie Mac enlarge the residential mortgage market by buying and selling mortgages. Government regulatory agencies were created to regulate the financial markets. In particular, the government created the Securities and Exchange Commission in response to the stock market crash of 1929 and the Great Depression of the 1930s.

5. The European Investment Bank is neither a local government entity nor a financial business entity. It can be classified as a supranational institution to promote economic growth for its member European countries.

6. (a) Since the individual's funds have in essence been passed through the intermediary to the firm, the individual has an indirect claim on the borrower firm. If the borrowing firm fails to provide the return to the intermediary, the individual may be exposed to this financial risk.

(b) An individual's account at a financial intermediary is a direct claim on that intermediary. In turn, the intermediary pools individual accounts and lends to another firm. As a result, the intermediary has a direct contractual claim on that firm for the expected cash flows.

7.

(a) Car insurance: neither the time nor the amount of required payoff are certain (Type IV liability)

(b) Variable rate certificates of deposit: times of payments are certain, the amounts are not (Type III liability)

(c) Fixed-rate certificate of deposit: both the timing of payments and the amount of the cash outflows are known (Type I liability)

(d) Life insurance policy: the date of the payout is not known, but the amount is known (Type II liability)

8. The bank has a Type I fixed obligation. A common stock is a risky, variable return. There is the possibility of a mismatching of liability with asset. The bank may not be able to meet its

obligation.

9. A depositor of funds may need short term maturity, but a borrower may need longterm maturity. There is a mismatch of maturities of liabilities and assets. Financial intermediaries provide maturity intermediation by pooling deposits that can be withdrawn any time and thus have shorter maturity, but the maturity of a loan made may be considerably longer.

10. Financial intermediaries use expertise and economies of scale in contracting for financial assets. This reduces the cost of contracting.

11.

(a) Disclosure enhances the price efficiency within markets by making price information available for evaluation by all investors. This mitigates the adverse effect of information asymmetry between managers and investors, and promotes trust in the markets.

(b) Some economists deny the need for disclosure regulation. They do not believe in market failure, and believe that markets will price information and lack information in a way that does not require government intervention.

12. Financial activity regulation refers to the rules about traders and trading of securities on financial markets. Examples include insider-trading rules and regulations which govern the structure and operations of exchanges to avoid collusion and fraud.

13.

(a) This means that the amount of loans made by commercial banks will decline. This means that the bank must earn a return from other sources to compensate for the reduction in interest income. One such source is to underwrite securities issued by corporations, which may explain some of the mergers between commercial and investment banks.

(b) Market intermediation requires that financial instruments be designed to make them more acceptable to types of investors besides other financial intermediaries. The chief obstacle is to make the transactions more efficient, which means reducing their cost.

14.

(a) Process innovation is where an existing product is made more efficient. Product innovation is the creation of a new product.

(b) Securitization is an example of a process innovation that resulted in a product innovation.

15. In general, securitization is a process by which a financial relationship is converted into a financial transaction. Specifically, securitization is a process by which a corporation pools together its interest in identifiable future cash flows, transfers the claims on those future cash flows to another entity that is specifically crated for the sole purpose of holding those financial claims, and then utilize those future cash flows to pay off investors over time.

16.

(a) A cat bond is a bond issued by a company that seeks to protect itself against an insurance risk. The bond is funded by public market investors, who are paid a return based on the rate offered by the issuer. If the insurance fortuity does not occur by maturity, the bondholder gets the principal back. But if an insurance claim results, the principal funds the loss.

(b) The company can issue a cat bond that is based on the future price index of used Toyota cars, and based on the price of this index at maturity any loss can be funded by the bondholder. This is a way in which the public market can provide an insurance product, which is traditionally the business of insurance companies.