# Solution Manual for Fundamentals of Corporate Finance 3rd Edition by Parrino Kidwell Bates ISBN 1118845897 9781118845899

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## Chapter 2

## The Financial System and the Level of Interest Rates

## **Learning Objectives**

- 1. Describe the role of the financial system in the economy and the two basic ways in which money flows through the system.
- 2. Discuss direct financing and the important role that investment banks play in this process.
- **3.** Describe the primary, secondary, and money markets, explaining the special importance of secondary and money markets to business organizations.
- **4.** Explain what an efficient market is and why market efficiency is important to financial managers.
- **5.** Explain how financial institutions serve the needs of consumers and small businesses.
- **6.** Compute the nominal and the real rates of interest, differentiating between them.

## **Chapter Outline**

#### 2.1 The Financial System

- A. The Financial System at Work
  - It is competitive.
  - Money is aggregated in small amounts and loaned in large amounts.
  - Directs money to the best investment opportunities in the economy.
  - Banks earn much of their profits from the spread which involves borrowing at a low rate from depositors and lending at a higher rate.

#### B. How Funds Flow through the Financial System

- The primary concern of the financial system is funneling money from lenderssavers to borrowers-spenders.
  - Direct funds flow, or
  - Indirect funds flow (intermediation)

#### 2.2 Direct Financing

Financial markets perform the important function of channeling funds from lenderssavers directly to borrowers-spenders.

#### A. A Direct Market Transaction

- A Direct Market Transaction—wholesale market transaction in which the borrower raises capital from the market rather than borrowing from another institution.
- **Investment Banks and Direct Financing**—firms that specialize in helping companies sell new debt or equity issues directly in the public or private security markets.
  - Money Center Banks—large commercial banks located in major U.S. financial centers that transact in both the national and international money markets.
  - Origination is the process of preparing a security issue for sale.
  - Underwriting—a basic investment banking service is to assist firms in the sale of debt or equity in the primary market. To underwrite a new security issue, the investment banker buys the entire issue at a guaranteed price from the issuing firm and resells the securities to institutional investors and the public.
  - Distribution is the process of marketing and reselling the securities to investors.

#### 2.3 Types of Financial Markets

- A. **Primary and Secondary Markets** any financial market in which new security issues are sold for the first time is a primary market while a financial market in which the owners of outstanding securities can resell them to other investors is a secondary market.
  - Investors are willing to pay higher prices for securities in primary markets if the securities have active secondary markets.
  - The ease with which a security can be sold and converted into cash is called **marketability**.
  - The ability to convert an asset into cash quickly without loss of value is called **liquidity**.
  - **Brokers**—market specialists who bring buyers and sellers together in secondary markets.

- They execute transactions for their clients and are compensated for their services with a commission fee.
- They bear no risk of ownership of the securities in the transactions; their only service is that of a "matchmaker."
- **Dealers**—"make markets" for securities and do bear risk. They make a market for a security by buying and selling from an inventory of securities they own. The risk is that they will not be able to sell a security for more than they paid for it.

#### B. Exchanges and Over-the-Counter Markets

- Organized Exchanges—provide a physical meeting place and communication facilities for members to conduct business under a specific set of rules and regulations. Only members can use the exchange, and each exchange has a limited number of seats.
- Over-the-Counter (OTC) Markets—have no central trading location, as the NYSE has. Instead, investors can execute OTC transactions by visiting or telephoning an OTC dealer or by using a computer-based electronic trading system linked to the OTC dealer.
- **C. Money and Capital Markets** money markets where short-term debt instruments, which have maturities of less than one year, are traded.
  - Money markets are wholesale markets in which the minimum transactions \$1 million.
  - Capital markets transact equity and debt instruments with maturities of greater than one year are traded.

#### D. Public and Private Markets

- Public markets are organized financial markets where the general public buys and sells securities through their stockbroker.
- Private markets involve direct transactions between two parties. Transactions in private markets are called private placements.
- **E.** Futures and Options Markets—are often called derivative securities because they derive their value from some underlying asset.
  - Futures Contracts—contracts for future delivery of securities, foreign currencies, interest rates, or commodities.
  - Options Contracts—call for one party (the option writer) to perform a specific act if called upon to do so by the option buyer or owner.

#### 2.4 Market Efficiency

#### A. Overview

• The supply and demand for securities are better reflected in organized markets.

- Any price that balances the overall supply and demand for a security is a market equilibrium price.
- A **security's true** (**intrinsic**) **value** is the price that reflects investors' estimates of the value of the cash flows they expect to receive in the future.
- In an **efficient capital market**, security prices fully reflect the knowledge and expectations of all investors at a particular point in time.
  - If markets are efficient, investors and financial managers have no reason to believe the securities are not priced at or near their true value.
  - The more efficient a security market, the more likely securities are to be priced at or near their true value.
- The overall efficiency of a capital market depends on its operational efficiency and its informational efficiency.
  - Market Operational efficiency focuses on bringing buyers and sellers together at the lowest possible cost.
  - Markets exhibit informational efficiency if market prices reflect all relevant information about securities at a particular point in time.
  - In an informationally-efficient market, market prices adjust quickly to new information about a security as it becomes available.
  - Competition among investors is an important driver of informational efficiency.

#### B. Efficient Market Hypotheses

- Prices of securities adjust as the buying and selling from investors lead to the price that truly reflects the market's consensus. This reflects the market's efficiency.
- Market efficiency can be explained at three levels—strong form, semistrong form, and weak form.
- **Strong-form** market efficiency states that the price of a security in the market reflects all information—public as well as private or inside information.
  - Strong-form efficiency implies that it would not be possible to earn abnormally high returns (returns greater than those justified by the risks) by trading on private information.
- **Semistrong-Form** market efficiency implies that only public information that is available to all investors is reflected in a security's market price.
  - Investors who have access to inside or private information will be able to earn abnormal returns.
  - Public stock markets in developed countries like the United States have a semistrong-form of market efficiency.
  - New information is immediately reflected in a security's market price.
- In **weak-form** market efficiency, all information contained in past prices of a security is reflected in current prices.

It would not be possible to earn abnormally high returns by looking for
patterns in security prices, but it would be possible to do so by trading on
public or private information.

#### 2.5 Financial Institutions and Indirect Financing

- A. Indirect Market Transactions—when a financial intermediary such as a commercial bank or insurance company stands between the borrower and the lender.
- B. Financial Institutions and Their Services
  - 1. Commercial Banks—are the most prominent and largest financial intermediaries in the economy and offer the widest range of financial services to businesses.
    - The major services commercial banks offer consumers are checking accounts, and a variety of credit and loan arrangements.
    - They also do a significant amount of equipment lease financing.
  - 2. Life and Casualty Insurance Companies—life insurance companies obtain funds by selling life insurance policies that protect individuals against the loss of income from a family member's premature death while casualty insurance companies sell protection against loss of property from fire, theft, accidents, negligence, and other predictable causes.
  - **3.** *Pension Funds*—provide retirement programs for businesses as part of their employee benefit programs. They obtain money from employee and employer contributions during the employee's working years, and they provide monthly payments upon retirement.
  - **4.** *Investment Funds*—sell shares to investors and use the funds to purchase securities.
  - 5. Business Finance Companies—sell short-term debt, called *commercial paper*, to investors in the direct credit markets, where these funds are used to make a variety of short- and intermediate-term loans and leases to small and large businesses.

#### **2.6** The Determinants of Interest Rate Levels

- A. The Real Rate of Interest—an interest rate determined in the absence of inflation.
  - The **nominal rate of interest** is the rate that we actually observe in the market place at a given time and is unadjusted for inflation.
  - The determinants of the real rate are a firm's return on investment as well as
    the time preference for consumption. In equilibrium, the desired level of
    borrowing by borrower-spenders equals the desired level of lending by lendersavers.
  - Fluctuations in the Real Rate

- Any economic factor that causes a shift in the desired lending or desired borrowing will cause a change in the equilibrium rate of interest.
- The real rate of interest reflects a complex set of forces that control the desired level of lending and borrowing in the economy.
- **B.** Loan Contracts and Inflation—the real rate of interest ignores inflation.
- C. The Fisher Equation and Inflation
  - How do we write a loan contract that provides protection against loss of purchasing power due to inflation?
  - To incorporate "inflation expectations" into a loan contract we need to adjust the real rate of interest by amount of inflation expected during the contract period.
  - The mathematical formula for this is called the Fisher Equation.
  - (1 + Nominal Rate) = (1 + Real Rate of interest) x (1 + Expected Price Level Change)
  - Simplified Fisher Equation: Nominal Rate = Real Rate of Interest + Expected Price Level Change.
- D. Cyclical and Long-Term Trends in Interest Rates
  - Inflationary expectations have a major impact on interest rates.
  - Interest rates tend to follow the business cycle—during periods of economic expansion, interest rates tend to rise; during a recession, the opposite tends to occur.

## Suggested and Alternative Approaches to the Material

This chapter provides useful background for the material presented later in the course. At some universities, this material has already been covered in a previous course, and therefore the chapter will serve as an optional review to ensure that the students are comfortable with the nomenclature and general workings of the financial markets. In that event, this chapter can be covered in a single lecture or a portion of a single lecture.

If the students have not had a previous course in Money and Banking, then the text offers a proper introduction of the material. This might provide non-Finance majors with the only source of this important material, such as the relationship between real and nominal interest rates. In addition, the chapter introduces many definitions and concepts that will be used later in the text.

### **Summary of Learning Objectives**

1. Describe the primary role of the financial system in the economy and the two basic ways in which money flows through the system.

The role of the financial system is to gather money from people and businesses with surplus funds to invest (lender-savers) and channel that money to businesses and consumers who need to borrow money (borrower-spenders). If the financial system works properly, only investment projects with high rates of return and good credit are financed and all other projects are rejected. Money flows through the financial system in two basic ways: (1) directly, through financial markets, or (2) indirectly, through financial institutions.

# 2. Discuss direct financing and the important role that investment banks play in this process.

Direct markets are wholesale markets where large public corporations transact. For example, corporations sell securities, such as stocks and bonds, directly to investors in exchange for money, which they use to invest in their businesses. Investment banks are important in the direct markets because they help firms sell their new security issues. The services provided by investment bankers include origination, underwriting, and distribution.

# 3. Describe the primary, secondary, and money markets, explaining the special importance of secondary and money markets to business organizations.

Primary markets are markets in which new securities are sold for the first time. Secondary markets provide the aftermarket for securities that were previously issued. Not all securities have secondary markets. Secondary markets are important because they enable investors to convert securities easily to cash. Business firms whose securities are traded in secondary markets are able to issue securities at a lower cost than they otherwise could because investors are willing to pay a premium price for securities that have secondary markets.

Large corporations use money markets to adjust their liquidity because cash inflows and outflows are rarely perfectly synchronized. Thus, on the one hand, if cash expenditures exceed cash receipts, a firm can borrow short-term in the money markets. If that firm holds a portfolio of money market instruments, it can sell some of these securities for cash. On the other hand, if cash receipts exceed expenditures, the firm can temporarily invest the funds in short-term money market instruments. Businesses are willing to invest large amounts of idle cash in money market instruments because of their high liquidity and their low default risk.

# 4. Explain what an efficient market is and why market efficiency is important to financial managers.

An efficient market is a market where security prices reflect the knowledge and expectations of all investors. Public markets, for example, are more efficient than private markets because issuers of public securities are required to disclose a great deal of

information about these securities to investors and investors are constantly evaluating the prospects for these securities and acting on the conclusions from their analyses by trading them. Market efficiency is important to investors because it assures them that the securities they buy are priced close to their true value.

# 5. Explain how financial institutions serve the needs of consumers, small businesses, and corporations.

One problem with direct financing is that it takes place in a wholesale market. Most small businesses and consumers do not have the expert skills, financing requirements, or the money to transact in this market. In contrast, a large portion of the indirect market focuses on providing financial services to consumers and small businesses. For example, commercial banks collect money from consumers in small dollar amounts by selling them checking accounts, saving accounts, and consumer CDs. They then aggregate the funds and make loans in larger amounts to consumers and businesses. The financial services bought or sold by financial institutions are tailor-made to fit the needs of the markets they serve. Exhibit 2.3 illustrates how corporations use the financial system.

# 6. Compute the nominal and the real rates of interest, differentiating between them. Equations 2.1 and 2.2 are used to compute the nominal (real) rate of interest when you have the real (nominal) rate and the inflation rate. The real rate of interest is the interest rate that would exist in the absence of inflation. It is determined by the interaction of (1) the rate of return that businesses can expect to earn on capital goods and (2) individuals' time preference for consumption. The interest rate we observe in the marketplace is called the nominal rate of interest. The nominal rate of interest is composed of two parts: (1) the real rate of interest and (2) the expected rate of inflation.

## **Summary of Key Equations**

Equation	Description	Formula
2.1	Fisher equation	$i = r + \Delta P_e + r \Delta P_e$
2.2	Fisher equation simplified	$i = r + \Delta P_e$