

Chapter 1

An Overview of Financial Management and The Financial Environment

ANSWERS TO BEGINNING-OF-CHAPTER QUESTIONS

1-1 The primary goal is assumed to be shareholder wealth maximization, which translates to stock price maximization. That, in turn, means maximizing the PV of future free cash flows.

Maximizing shareholder wealth requires that the firm produce things that customers want, and at the lowest cost consistent with high quality. It also means holding risk down, which will result in a relatively low cost of capital, which is necessary to maximize the PV of a given cash flow stream.

This also gets into the issue of capital structure—how much debt should we use? The more debt the firm uses, the lower its taxes, and the fewer shares outstanding, hence less dilution of earnings. However, more debt means more risk. So, it's necessary to consider capital structure when attempting to maximize share prices.

Dividend policy is also an issue—how much of its earnings should the firm pay out as dividends? The answer to that question depends on a number of factors, including the firm's investment opportunities, its access to capital markets, its stockholders' desires (and their tax rates), and the kind of signals stockholders get from dividend actions.

Shareholder wealth maximization is partially consistent and partially inconsistent with generally accepted societal goals. It is consistent because well-run firms produce good products at low costs, sell them at competitive prices, employ people, pay taxes, and generally improve society. However, without constraints, firms would tend to form monopolies and end up charging prices that are too high and not producing enough output. They might also pollute the air and water, engage in unfair labor practices, and so on. So, constraints (antitrust, labor, environmental, etc. laws) should be and are imposed on businesses. **That said, stock price maximization is consistent with a strong economy, economic progress, and “the good life” for most citizens.**

In standard introductory microeconomics courses, we assume that firms attempt to maximize profits. In more advanced econ courses, the goal is broadened to value maximizing, so finance and economics are indeed consistent.

As WorldCom, Enron, and other corporate scandals demonstrated very clearly, managers do not always have stockholders' interests as a primary goal—some managers have their own interests. This point is discussed further below.

Answers and Solutions: 1- 1

- 1-2 See the model for quantitative answers to this question. All of these valuations involve applications of the basic valuation model:

$$\text{Value} = \sum_{t=0}^N \frac{CF_t}{(1+r)^t}.$$

Values for CF_t , r , and N are specified. For bonds, the CF_t s are interest payments and the maturity value, and N is the bond's life. Other things held constant, the higher the going interest rate, r , the lower the value of the bond. Also, if the coupon rate is high, then CF_t s are also high, and that increases the value of the bond. For a stock, the CF_t s are dividends, and for a capital budgeting project, they are operating cash flows.

The main point to get across with this question is that all assets are valued in essentially the same way. The Excel model goes into a little more detail on sensitivity analysis. Much more comes later in the book.

- 1-3 The advantages of a corporate form of ownership are that investor liability is limited to the amount invested, corporations can raise capital through public offerings of stock, and ownership can be easily transferred from person to person by simply selling shares of stock. In a sole proprietorship or partnership, on the other hand, the owner or owners are exposed to potentially unlimited liability, it is difficult to raise equity capital since either new partners must be found or the existing partners must put up additional capital, and it is difficult to transfer ownership between partners or from a sole proprietor to someone else.

The disadvantages of the corporate form are that there are numerous forms that must be filled out and regulations that must be followed that are not required of a sole proprietorship or a partnership, corporations are subject to double taxation of distributed earnings in that the corporation first pays taxes on the pre-tax income, and then the owners must pay tax on the dividend or capital gains income, and the separation of ownership (by the shareholders) and control (by management) can result in management taking actions that are not in the owners' best interests.

- 1-4 The cost of money is affected by (1) production opportunities, (2) the time preference for consumption, (3) risk, and (4) inflation. When production opportunities are good, and assets are earning high rates of return, then interest rates tend to be higher because there is a larger demand for borrowing to finance these projects. Also, investors who are considering lending money recognize that their alternative investments have a high return, and so demand a high return on their investments. When investors have a strong preference for current consumption, then they demand a higher return on their investments to compensate them for having to defer current purchases, and so the cost of money is higher. Investors demand a higher rate of return on riskier investments in order to compensate them for the having to be exposed to more risk, and when investors expect future inflation, then the cost of money increases so that investment returns better cover this future price increase.

Answers and Solutions: 1- 2

If any of these factors change, then the cost of money will change, and hence the yield and the price of a security will change as well. For example, if overall the time preference for consumption increases, then overall interest rates will tend to increase and the yield on debt instruments will tend to increase, and their prices will fall. If the underlying level of inflation declines, as it did through the 1990s, then interest rates on debt instruments will decline, driving up their prices. On the other hand, if a company experiences financial problems, increasing the likelihood of default and bankruptcy and becoming more risky, then the yield on its bonds will increase and their prices will fall.

- 1-5 Securitization is the process by which assets, such as mortgages held by banks, accounts receivables held by companies, or credit card obligations held by banks and finance companies, are packaged together and sold to investors. In the case of mortgages, a bank or savings and loan (S&L) may have a portfolio of mortgages that it has originated (or issued). Typically, a bank will have financed these mortgages with savings and checking account deposits and CDs and once it has used up its loanable funds, it must either stop making new loans, or raise more funds if it wants to make more loans. If the bank packages these mortgages and sells them to investors, then it can make more loans with the funds it receives. The idea is that bank acts as an intermediary in this case, analyzing credit and making loans, and then selling them off so it can make more loans; consumers get more loans, and banks get to do what they (supposedly) do best, which is to analyze risk and originate loans.

If a bank doesn't securitize its loans and, instead, holds them on its books, then it can be exposed to a lot of interest rate risk. Back in the 1980s, S&Ls were raising money with short-term CDs and lending it out long-term as 30-year fixed-rate mortgages. When interest rates skyrocketed, the interest they had to pay on the CDs increased dramatically, but since the mortgages were fixed-rate, the interest income the S&Ls received didn't increase. This caused hundreds of S&Ls to go bankrupt, and cost the federal government, and ultimately, the U.S. taxpayers, hundreds of billions of dollars. If, instead, S&Ls securitized the loans, they would no longer be exposed to the interest rate risk since they would have sold off the loans shortly after originating them. Of course, the interest rate risk doesn't go away! Instead, the investors in the securitized mortgages now receive the fixed interest payments. If these investors have themselves financed the investment with short-term borrowing, then they will be exposed to interest rate risk!

1-6 Just like the Great Depression that preceded it 80 years earlier, the causes of the Global Economic Crisis that began in 2007 and lasted through 2009 will likely be the subject of vigorous debate for years to come. As an example of one small aspect of the crisis, consider how securitized mortgages end up in retirement portfolios, and how a decline in housing prices in, say Florida, can bankrupt investors half a world away: A mortgage company makes a bunch of loans to homeowners in Florida; a bank securitizes these loans and creates tranches consisting interest payments, principal payments, other combinations of payments, and the various tranches have different seniority levels—some get paid first, others are residual claimants; a ratings agency rates some of these pools as investment grade, so pension funds and even individual investors can purchase them; and Norwegian investors purchase some of these to hold in their retirement accounts because they offer good rates of return and were highly rated by the ratings agency.

Now consider what happens when housing prices stop growing and begin to decline in Florida. Many of these loans were floating rate loans with low “teaser rates” initially, but much higher “reset” rates after 1, 2, or 3 years. The idea was when the low teaser rate expired the homeowner would either sell the house or refinance it, in either case paying off the loan. Importantly, the homeowner never intended, and frequently simply could not afford, to pay the much higher “reset” rate. But with housing prices declining, the homeowner can’t sell the house for as much as the outstanding loan. And since the appraised value declines too, the homeowner can’t refinance the house! That leaves only two options: staying in the house and paying the much-higher mortgage payment, or defaulting on the loan if the homeowner can’t pay the higher mortgage payments. Many homeowners choose to default. This causes two apparently independent, but ultimately related problems. First, this stops (or slows down) the cash flows to the Norwegian retirees. Second, it places a foreclosure notice on the house. With lots of houses in foreclosure, other housing prices fall as well, forcing more foreclosures, and more defaults. This still further reduces the payments to the Norwegian retirees. The rating agency, seeing this decline in cash flows, downgrades the investments, which drops it below investment-grade, so pension funds have to sell them off, which causes declines in their values, ultimately bankrupting the retirement fund if it had too many of these mortgage backed securities in its portfolio.

Answers and Solutions: 1- 4

ANSWERS TO END-OF-CHAPTER QUESTIONS

- 1-1
- a. A proprietorship, or sole proprietorship, is a business owned by one individual. A partnership exists when two or more persons associate to conduct a business. In contrast, a corporation is a legal entity created by a state. The corporation is separate and distinct from its owners and managers.
 - b. In a limited partnership, limited partners' liabilities, investment returns and control are limited, while general partners have unlimited liability and control. A limited liability partnership (LLP), sometimes called a limited liability company (LLC), combines the limited liability advantage of a corporation with the tax advantages of a partnership. A professional corporation (PC), known in some states as a professional association (PA), has most of the benefits of incorporation but the participants are not relieved of professional (malpractice) liability.
 - c. Stockholder wealth maximization is the appropriate goal for management decisions. The risk and timing associated with expected earnings per share and cash flows are considered in order to maximize the price of the firm's common stock.
 - d. Production opportunities are the returns available within an economy from investment in productive assets. The higher the production opportunities, the more producers would be willing to pay for required capital. Consumption time preferences refer to the preferred pattern of consumption. Consumer's time preferences for consumption establish how much consumption they are willing to defer, and hence save, at different levels of interest.
 - e. A foreign trade deficit occurs when businesses and individuals in the U. S. import more goods from foreign countries than are exported. Trade deficits must be financed, and the main source of financing is debt. Therefore, as the trade deficit increases, the debt financing increases, driving up interest rates. U. S. interest rates must be competitive with foreign interest rates; if the Federal Reserve attempts to set interest rates lower than foreign rates, foreigners will sell U.S. bonds, decreasing bond prices, resulting in higher U. S. rates. Thus, if the trade deficit is large relative to the size of the overall economy, it may hinder the Fed's ability to combat a recession by lowering interest rates.
- 1-2 Sole proprietorship, partnership, and corporation are the three principal forms of business organization. The advantages of the first two include the ease and low cost of formation. The advantages of the corporation include limited liability, indefinite life, ease of ownership transfer, and access to capital markets.

Answers and Solutions: 1- 5

The disadvantages of a sole proprietorship are (1) difficulty in obtaining large sums of capital; (2) unlimited personal liability for business debts; and (3) limited life. The disadvantages of a partnership are (1) unlimited liability, (2) limited life, (3) difficulty of transferring ownership, and (4) difficulty of raising large amounts of capital. The disadvantages of a corporation are (1) double taxation of earnings and (2) requirements to file state and federal reports for registration, which are expensive, complex and time-consuming.

- 1-3 A firm's fundamental, or intrinsic, value is the present value of its free cash flows when discounted at the weighted average cost of capital. If the market price reflects all *relevant* information, then the observed price is also the intrinsic price.
- 1-4 Earnings per share in the current year will decline due to the cost of the investment made in the current year and no significant performance impact in the short run. However, the company's stock price should increase due to the significant cost savings expected in the future.
- 1-5 In a well-functioning economy, capital will flow efficiently from those who supply capital to those who demand it. This transfer of capital can take place in three different ways:
1. Direct transfers of money and securities occur when a business sells its stocks or bonds directly to savers, without going through any type of financial institution. The business delivers its securities to savers, who in turn give the firm the money it needs.
 2. Transfers may also go through an investment banking house which underwrites the issue. An underwriter serves as a middleman and facilitates the issuance of securities. The company sells its stocks or bonds to the investment bank, which in turn sells these same securities to savers. The businesses' securities and the savers' money merely "pass through" the investment banking house.
 3. Transfers can also be made through a financial intermediary. Here the intermediary obtains funds from savers in exchange for its own securities. The intermediary uses this money to buy and hold businesses' securities. Intermediaries literally create new forms of capital. The existence of intermediaries greatly increases the efficiency of money and capital markets.

Answers and Solutions: 1- 6

MINI CASE

Assume that you recently graduated and have just reported to work as an investment advisor at the brokerage firm of Balik and Kiefer Inc. One of the firm's clients is Michelle Dellatorre, a professional tennis player who has just come to the United States from Chile. Dellatorre is a highly ranked tennis player who would like to start a company to produce and market apparel that she designs. She also expects to invest substantial amounts of money through Balik and Kiefer. Dellatorre is also very bright, and, therefore, she would like to understand, in general terms, what will happen to her money. Your boss has developed the following set of questions which you must ask and answer to explain the U.S. financial system to Dellatorre.

a. Why is corporate finance important to all managers?

Answer: Corporate finance provides the skills managers need to: (1) identify and select the corporate strategies and individual projects that add value to their firm; and (2) forecast the funding requirements of their company, and devise strategies for acquiring those funds.

b. Describe the organizational forms a company might have as it evolves from a start-up to a major corporation. List the advantages and disadvantages of each form.

Answer: The three main forms of business organization are (1) sole proprietorships, (2) partnerships, and (3) corporations. In addition, several hybrid forms are gaining popularity. These hybrid forms are the limited partnership, the limited liability partnership, the professional corporation, and the S corporation.

The proprietorship has three important advantages: (1) it is easily and inexpensively formed, (2) it is subject to few government regulations, and (3) the business pays no corporate income taxes. The proprietorship also has three important limitations: (1) it is difficult for a proprietorship to obtain large sums of capital; (2) the proprietor has unlimited personal liability for the business's debts, and (3) the life of a business organized as a proprietorship is limited to the life of the individual who created it.

The major advantage of a partnership is its low cost and ease of formation. The disadvantages are similar to those associated with proprietorships: (1) unlimited liability, (2) limited life of the organization, (3) difficulty of transferring ownership, and (4) difficulty of raising large amounts of capital. The tax treatment of a partnership is similar to that for proprietorships, which is often an advantage.

Mini Case: 1-7

The corporate form of business has three major advantages: (1) unlimited life, (2) easy transferability of ownership interest, and (3) limited liability. While the corporate form offers significant advantages over proprietorships and partnerships, it does have two primary disadvantages: (1) corporate earnings may be subject to double taxation and (2) setting up a corporation and filing the many required state and federal reports is more complex and time-consuming than for a proprietorship or a partnership.

In a limited partnership, the limited partners are liable only for the amount of their investment in the partnership; however, the limited partners typically have no control. The limited liability partnership form of organization combines the limited liability advantage of a corporation with the tax advantages of a partnership. Professional corporations provide most of the benefits of incorporation but do not relieve the participants of professional liability. S corporations are similar in many ways to limited liability partnerships, but LLPS frequently offer more flexibility and benefits to their owners.

c. How do corporations “go public” and continue to grow? What are agency problems? What is corporate governance?

Answer: A company goes public when it sells stock to the public in an initial public as the firm grows, it might issue additional stock or debt. An agency problem occurs when the managers of the firm act in their own self interests and not in the interests of the shareholders. Corporate governance is the set of rules that control a company’s behavior towards its directors, managers, employees, shareholders, creditors, customers, competitors, and community.

d. What should be the primary objective of managers?

Answer: The corporation’s primary goal is stockholder wealth maximization, which translates to maximizing the price of the firm’s common stock.

d. 1. Do firms have any responsibilities to society at large?

Answer: Firms have an ethical responsibility to provide a safe working environment, to avoid polluting the air or water, and to produce safe products. However, the most significant cost-increasing actions will have to be put on a mandatory rather than a voluntary basis to ensure that the burden falls uniformly on all businesses.

Mini Case: 1- 8

d. 2. Is stock price maximization good or bad for society?

Answer: The same actions that maximize stock prices also benefit society. Stock price maximization requires efficient, low-cost operations that produce high-quality goods and services at the lowest possible cost. Stock price maximization requires the development of products and services that consumers want and need, so the profit motive leads to new technology, to new products, and to new jobs. Also, stock price maximization necessitates efficient and courteous service, adequate stocks of merchandise, and well-located business establishments--factors that are all necessary to make sales, which are necessary for profits.

d. 3. Should firms behave ethically?

Answer: Yes. Results of a recent study indicate that the executives of most major firms in the United States believe that firms do try to maintain high ethical standards in all of their business dealings. Furthermore, most executives believe that there is a positive correlation between ethics and long-run profitability. Conflicts often arise between profits and ethics. Companies must deal with these conflicts on a regular basis, and a failure to handle the situation properly can lead to huge product liability suits and even to bankruptcy. There is no room for unethical behavior in the business world.

e. What three aspects of cash flows affect the value of any investment?

Answer: (1) amount of expected cash flows; (2) timing of the cash flow stream; and (3) riskiness of the cash flows.

f. What are free cash flows?

Answer: free cash flows are the cash flows available for distribution to all investors (stockholders and creditors) after paying expenses (including taxes) and making the necessary investments to support growth.

$$\text{FCF} = \begin{array}{l} \text{sales revenues} - \text{operating costs} - \text{operating taxes} \\ - \text{required investments in operating capital.} \end{array}$$

Mini Case: 1- 9

g. What is the weighted average cost of capital?

Answer: The weighted average cost of capital (WACC) is the average rate of return required by all of the company's investors (stockholders and creditors). It is affected by the firm's capital structure, interest rates, the firm's risk, and the market's overall attitude toward risk.

h. How do free cash flows and the weighted average cost of capital interact to determine a firm's value?

Answer: A firm's value is the sum of all future expected free cash flows, converted into today's dollars.

$$\text{Value} = \frac{\text{FCF}_1}{(1 + \text{WACC})^1} + \frac{\text{FCF}_2}{(1 + \text{WACC})^2} + \dots + \frac{\text{FCF}_\infty}{(1 + \text{WACC})^\infty}$$

i. Who are the providers (savers) and users (borrowers) of capital? How is capital transferred between savers and borrowers?

Answer: Households are net savers. Non-financial corporations are net borrowers. Governments are net borrowers, although the U.S. government is a net saver when it runs a surplus. Non-financial corporations (i.e., financial intermediaries) are slightly net borrowers, but they are almost breakeven. Capital is transferred through: (1) direct transfer (e.g., corporation issues commercial paper to insurance company); (2) an investment banking house (e.g., IPO, seasoned equity offering, or debt placement); (3) a financial intermediary (e.g., individual deposits money in bank, bank makes commercial loan to a company).

j. What do we call the price that a borrower must pay for debt capital? What is the price of equity capital? What are the four most fundamental factors that affect the cost of money, or the general level of interest rates, in the economy?

Answer: The interest rate is the price paid for borrowed capital, while the return on equity capital comes in the form of dividends plus capital gains. The return that investors require on capital depends on (1) production opportunities, (2) time preferences for consumption, (3) risk, and (4) inflation.

Production opportunities refer to the returns that are available from investment in productive assets: the more productive a producer firm believes its assets will be, the more it will be willing to pay for the capital necessary to acquire those assets.

Mini Case: 1- 10

Time preference for consumption refers to consumers' preferences for current consumption versus savings for future consumption: consumers with low preferences for current consumption will be willing to lend at a lower rate than consumers with a high preference for current consumption.

Inflation refers to the tendency of prices to rise, and the higher the expected rate of inflation, the larger the required rate of return.

Risk, in a money and capital market context, refers to the chance that the future cash flows will not be as high as expected--the higher the perceived default risk, the higher the required rate of return.

Risk is also linked to the maturity and liquidity of a security. The longer the maturity and the less liquid (marketable) the security, the higher the required rate of return, other things constant.

k. What are some economic conditions that affect the cost of money?
--

Answer: The cost of money will be influenced by such things as fed policy, fiscal deficits, business activity, and foreign trade deficits.

The cost of money for an international investment is also affected by country risk, which refers to the risk that arises from investing or doing business in a particular country. This risk depends on the country's economic, political, and social environment. Country risk also includes the risk that property will be expropriated without adequate compensation, as well as new host country stipulations about local production, sourcing or hiring practices, and damage or destruction of facilities due to internal strife.

The cost of money for an international investment is also affected by exchange rate risk. When investing overseas the security usually will be denominated in a currency other than the dollar, which means that the value of the investment will depend on what happens to exchange rates. Changes in relative inflation or interest rates will lead to changes in exchange rates. International trade deficits/surpluses affect exchange rates. Also, an increase in country risk will also cause the country's currency to fall.

l. What are financial securities? Describe some financial instruments.

Answer: Financial assets are pieces of paper with contractual obligations. Some short-term (i.e., they mature in less than a year) are instruments with low default risk are u.s. treasury bills, banker's acceptances, commercial paper, negotiable CDs, and eurodollar deposits. Commercial loans (which have maturities up to seven years) have rates that are usually tied to the prime rate (i.e., the rate that U.S. banks charge to their best customers) or LIBOR (the London Interbank Offered Rate, which is the rate that banks in the U.K. charge one another. U.S. treasury notes and bonds have maturities from two to thirty years; they are free of default risk. Mortgages have maturities up to thirty years. Municipal bonds have maturities of up to thirty years; their interest is exempt from most taxes. Corporate bonds have maturities up to forty years. Municipal and corporate bonds are subject to default risk. Some preferred stocks have no maturity date, some do have a specific maturity date. Common stock has no maturity date, and is riskier than preferred stock.

m. Briefly explain mortgage securitization and how it contributed to the global economic crisis.

Answer: Homeowners wanted better homes than they could afford. Mortgage brokers encouraged homeowners to take mortgages that would reset to payments that the borrowers might not be able to pay because the brokers got a commission for closing the deal. Appraisers thought the real estate boom would continue and over-appraised house values, getting paid at the time of the appraisal. Originating institutions (like Countrywide) quickly sold the mortgages to investment banks and other institutions. Investment banks created CDOs and got rating agencies to help design and then rate the new CDOs, with rating agencies making big profits despite conflicts of interest. Financial engineers used unrealistic inputs to generate high values for the CDOs. Investment banks sold the CDOs to investors and made big profits. Investors bought the CDOs but either didn't understand or care about the risk. Some investors bought "insurance" via credit default swaps.

When mortgages reset and borrowers defaulted, the values of CDOs plummeted. Many of the credit default swaps failed to provide insurance because the counterparty failed. Many originators and securitizers still owned sub-prime securities, which led to many bankruptcies, government takeovers, and fire sales, including New Century, Countrywide, IndyMac, Northern Rock, Fannie Mae, Freddie Mac, Bear Stearns, Lehman Brothers, and Merrill Lynch.

Mini Case: 1- 12