CHAPTER 8 | Firms, the Stock Market, and Corporate Governance

Solutions to End-of-Chapter Exercises

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| **8.1** | Types of Firms  Learning Objective: Categorize the major types of firms in the United States. |

Review Questions

**1.1** A sole proprietorship is owned by a single individual and isn’t organized as a corporation. A partnership is owned jointly by two or more persons and isn’t organized as a corporation. A corporation is a legal form of business that provides the owners with limited liability.

**1.2** Limited liability is a legal provision that shields owners of a corporation from losing more than they have invested in the firm. The government grants this privilege to corporations because investors are more likely to buy stock in a firm—thereby becoming part owners—if the investors’ losses are limited to the amount they invest. Because, unlike with a sole proprietorship or a partnership, most investors will not have a role in managing a corporation, they will be reluctant to become part owners if they face unlimited liability for the corporation’s losses. Most economists believe that limited liability laws help increase investment and the rate of economic growth.

**1.3** Because the stockholders of a corporation can never lose more than the amount they invested in the firm, firms can raise more funds from a large number of investors.

Problems and Applications

**1.4** It depends on the type of business you are entering. Incorporation has the advantage of limited liability but the disadvantage of additional taxes. If you choose not to form a corporation, then your choice between a sole proprietorship and a partnership will depend on whether you will gain enough by bringing in a partner or partners and sharing control and profits with them.

**1.5** With limited liability, corporations will be able raise more funds for investment, including spending on research and development, thereby shifting the country’s production possibilities frontier to the right over time.

**1.6** The person making this argument does not understand that stockholders in a corporation have limited liability. Limited liability is the legal provision that shields owners of a corporation from losing more than they have invested in the firm. Therefore, this person will not be responsible for any other losses the firm may have. Holding stocks is risky because the value of the stock may go up or down, but the risk is limited to the amount invested.

**1.7** Early in the nineteenth century, state legislatures in the United States began passing general incorporation laws, allowing firms to be organized as corporations. These laws gave owners of incorporated firms limited liability, making it possible for firms to raise funds by issuing shares of stock to large numbers of investors. As a result, firms were able to raise enough funds to operate railroads and other large-scale businesses.

**1.8** Large, existing firms might be more likely to focus on improving existing goods and services because they already have an established market for their products and have more expertise in the goods and services they currently produce. Small new firms may be more likely to introduce new goods to the market because they may find it difficult to compete with the same types of goods and services already being produced by the larger, established firms.

**1.9** Most entrepreneurs in the United States obtain funds to start new firms by using their own or family funds, by borrowing on credit cards, or by taking out loans against the value of their homes. In developing countries, typically entrepreneurs would have considerably less personal and family funds to use to start new businesses, and less or no access to credit cards, and little or no collateral to use to get loans.

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| **8.2** | The Structure of Corporations and the Principal-Agent Problem  Learning Objective: Describe the typical management structure of corporations and understand the concepts of separation of ownership from control and the principal-agent problem. |
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Review Questions

**2.1** In most large corporations the top management, rather than the shareholders, control day-to-day operations. Typically, top management does not own a significant percentage of the stock a large corporation has issued. So the top management controls the firm, in the sense of making the key decisions about how the firm will be run, while the owners—the stockholders—do not exercise active control of the firm.

**2.2** Separation of ownership from control is usually necessary for the firm to make coherent and timely decisions, but it gives rise to the principal–agent problem—the agents (management) may pursue their own interests rather than those of the principals (the shareholders) who own the firm.

**2.3** The outside directors are more likely to represent the interests of shareholders, rather than the interests of top management, and so can act as a check on the decisions of top management**.**

Problems and Applications

**2.4** The principal is the person who wants to get something done and hires the agent to do the job. Seen this way, the students are the principals, along with a state’s taxpayers, at least at public universities. In effect, students hire the instructor to do a job that they can’t easily do by themselves—to teach them about a subject like economics. The principal–agent problem arises if the instructor has her own best interests in mind, rather than those of the students or the taxpayers. For example, the instructor might give exams and assignments that are too easy or too hard from the point of view of the students, or spend time playing video games rather than preparing for class.

**2.5** Top managers know more about how the company is run than do the firm’s shareholders. The principal–agent problem might be overcome if shareholders had all the information about the company and about the consequences of the actions taken by the firm’s managers that the managers themselves possess.

**2.6** Sales personnel have an incentive to receive the highest income possible for the least amount of effort. The owner of the business would like his or employees to make as many sales as possible for the lowest possible pay. Paying sales personnel by commission better aligns the objectives of the employees, whose activities are often difficult to monitor, with the objectives of the owner than does paying a straight hourly wage. When paid by commission, the harder the sales personnel work, the larger their incomes.

**2.7** You should disagree with the argument. Boards of directors, as the shareholders representatives, could easily detect and then remove top managers who work short days, take long vacations, and slack off. The issue isn’t top managers slacking off as much as it is top managers pursuing their own personal goals such as short-run profits and maximizing the value of stock options as opposed to the long-run profitability of the firm.

**2.8** If all members of the boards of directors are elected each year, it may be easier for shareholders to replace members of the board if the shareholders suspect that the board has been ineffective in monitoring the firm’s top managers. If members of the board serve staggered terms, it may take shareholders two or three years before they are able to replace all of the existing board members. A firm is likely to be more profitable if the board of directors can reduce the principal–agent problem by actively monitoring the firm’s top managers.

**2.9** Private equity firms do reduce problems in corporate governance by helping to establish a market for corporate control, which can reduce principal–agent problems by providing a means to remove top management that is failing to carry out the wishes of shareholders.

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| **8.3** | How Firms Raise Funds  Learning Objective: Explain how firms raise the funds they need to operate and expand. |

Review Questions

**3.1** Direct finance occurs when a firm obtains funds directly from savers through the stock or bond market. Indirect finance occurs when firms obtain funds from savers indirectly through an intermediary such as a bank. Borrowing money from a bank to buy a car is indirect finance, as the bank channels the funds from its depositors to you. Borrowing money from your friend to buy a car would be direct finance.

**3.2** A bond is a loan because the firm promises to pay back the principal and interest to the bondholder. Rather than a loan, a share of stock is the purchase of part ownership of the company itself. The firm isn’t obliged to return the investor’s funds at any particular date; instead, the investor owns a share of the firm’s assets and has a claim on the firm’s profits. Corporations must issue some shares, because someone must be the owner. When a corporation wishes to raise more money, it will issue bonds if it believes it will be cheaper to borrow the money than to promise a share of the future profits to an expanded set of owners.

**3.3** Stock and bond markets provide information about what investors expect to happen to the firm. If they are optimistic and think the firm will earn higher profits, then they will bid up the price of its stock. If they are pessimistic, then the price of the stock will fall. If they are pessimistic and fear that the firm might suffer financial losses and default on its bond payments, then investors will be less willing to buy the firm’s bonds, and the prices of the bonds will fall. Optimism about the firm will increase the prices of the firm’s bonds. So, the successes and failures of the firm will result in rising or falling prices for the firm’s stocks and bonds in the stock and bond markets. Changes in investor expectations about the firm’s likely future profitability will also affect the prices of the firm’s stocks and bonds.

Problems and Applications

**3.4** You would rather own the bonds because a firm losing money is unlikely to pay a dividend, and if the firm goes bankrupt, the bondholders are paid off before the stockholders.

**3.5** You would be better off if you had bought the stock because it will have increased in value, while the interest the firm pays on the bonds will have remained the same.

**3.6** Finding someone to borrow your money may be difficult. You would then need to check out that person’s credit, write a loan agreement, and repossess the car if the borrower fails to pay back the loan. Banks specialize in these activities, so they can do them more efficiently than you can.

**3.7** Facebook’s initial public offering (IPO) occurred in the primary market because Facebook sold newly issued stocks directly to the public. It was an example of direct finance as Facebook acquired external funds through financial markets, as opposed to going through a financial intermediary.

**3.8 a.** Moody’s top bond rating is Aaa. Moody’s must have had some other concerns about the Thai government’s ability to repay its debt. Such concerns could have included high budget deficits. As a result, Moody’s gave the Thai government a high credit quality (Baa1) but not the highest credit quality (Aaa).

**b.** A lower debt rating would reflect higher risk that the Thai government might not repay its debit, which would raise the interest rate investors would be willing to accept when buying the government’s bonds. The higher interest rate would be required to compensate investors for the higher risk of default.

**3.9** **a.** Google’s stock price will fall because its expected future revenues and profits will have fallen.

**b.** Google’s stock price will rise because Google’s after-tax profits will rise.

**c.** Google’s stock price will fall because expected future profits will fall. In these circumstances, the board of directors is not likely to provide independent supervision of top management, which will make the principal-agent problem worse.

**d.** Google’s stock price will rise because expected revenues and profits will rise.

**e.** Google’s stock price will fall because profits were lower than expected. The higher expected profits were already reflected in Google’s stock price and the lower actual profits will cause Google’s stock price to fall.

**3.10 a.** For emerging markets, it had been about whether governments will be able to continue to make interest payments and principal payments on their bonds.

**b.** The extra penalties include the higher interest rates the developed countries would have to pay on the bonds they sell to finance government spending.

**3.11** The statement is false. These shares were traded in the secondary market (the NASDAQ), so the money went from the new shareholders to the previous shareholders. The money didn’t go to Microsoft.

**3.12** Stock ownership has become widespread in the United States in the past 20 years. As a result, many people own stock, either directly or through a mutual fund or pension plan. In these circumstances, swings in stock prices can have a substantial effect on the wealth of many people, and changes in stock prices reveal information about investor expectations concerning the future profitability of firms.

**3.13** **a.** Starbucks stock price went up $0.01, as indicated by the net change, from the day before.

**b.** Starbucks stock price varied $1.68 (between the high price of $65.09 and the low price of $63.41).

**c.** Starbucks stock price varied (over 52 weeks) from $43.04 to $65.09.

**d.** 6,794,623 shares, as indicated by the volume, of Starbucks stock were traded on that day.

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| **8.4** | Using Financial Statements to Evaluate a Corporation  Learning Objective: Understand the information provided in corporations’ financial statements. |
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Review Questions

**4.1** An asset is anything of value that a firm owns (such as a building). A liability is a debt or obligation owed by a firm (such as an unpaid electric bill).

**4.2.** A firm’s balance sheet is a snapshot of the firm’s assets and liabilities on a particular day (such as the end of a quarter). A firm’s income statement summarizes its revenues, costs, and profit over a period of time (such as during a year).

**4.3** An explicit cost is a cost that involves spending money; an implicit cost is a nonmonetary opportunity cost. A firm has both explicit costs, such as the rent it pays for a warehouse, and implicit costs, such as the opportunity cost of the services a sole proprietor supplies to her own firm. Accounting profit is a firm’s revenue minus its operating expenses and taxes paid (explicit costs); economic profit is a firm’s revenue minus all of its implicit and explicit costs.

**4.4** Regardless of its accounting profit, a firm making a negative economic profit is not likely to survive in the long run because it is not covering all of its implicit costs, such as the minimum amount that investors must earn on the funds they have invested in the firm.

Problems and Applications

**4.5** Paolo has forgotten to take into account the opportunity cost of keeping the money invested. If he were to keep the money invested in bonds, he would earn an interest rate of 10 percent per year. So, the opportunity cost of selling the bonds and using the funds to start a pizza restaurant is 10 percent per year. Therefore, selling the bonds is a *more* costly way of gaining funds to start his business than is taking out a bank loan with a 7 percent interest rate.

**4.6** Their costs are the same. Even though Alfredo receives the pizza ovens for free, as the owner of the restaurant he incurs an opportunity cost by using the ovens in his own business. There is an opportunity cost because he is giving up the funds he could receive by leasing the ovens or by selling them to some other pizza restaurant owner. Paolo’s costs of using the ovens are the same as Alfredo’s. Once Paolo has purchased the ovens, his decision as the restaurant owner to use the ovens in his own business means he incurs an opportunity cost equal to the funds he gives up by not leasing or selling the ovens. As an *individual*, Alfredo is better off than Paolo because he was given the ovens rather than having to buy them. But as a restaurant owner, Alfredo’s costs are no lower than Paolo’s.

**4.7** **a.** Accounting profit = revenues – explicit costs. Explicit costs are those that involve spending money, which include $75,000 paid to assistants and $10,000 for utilities. Accounting profit = $200,000 – $85,000 = $115,000.

**b.** Economic profit = revenue – opportunity cost (explicit cost + implicit cost). Implicit cost for Dane includes $200,000 in forgone wages, $20,000 in forgone rent on his duplex, and interest forgone by not selling his $1,000,000 in extraterrestrial gear and investing the funds. His economic profits are negative because his opportunity costs vastly exceed his revenues.

**4.8** The balance sheet provides the information needed to calculate a firm’s net worth, which is what the firm’s owners would be left with if the firm were to close, its assets sold, and its liabilities paid off. The income statement shows the firm’s accounting profits and, therefore, provides information on what the owners might expect to receive on their investment in the firm. An investor is more likely to buy a firm’s stock if the firm’s income statement shows a large after-tax profit and if its balance sheet shows a large net worth.

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| **8.5** | Corporate Governance Policy and the Financial Crisis of 2007–2009  Learning Objective: Discuss the role that corporate governance problems may have played in the 2007–2009 financial crisis. |
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Review Questions

**5.1** The Sarbanes-Oxley Act of 2002 attempts to strengthen the reliability of corporate financial reports. It was passed in reaction to the accounting fraud at companies like Enron and WorldCom.

**5.2** The primary source of the problems was that financial firms began securitizing home mortgages from “subprime” borrowers, who are borrowers with flawed credit histories, and “Alt-A” borrowers, who did not document their incomes when applying for mortgages. When housing prices began falling in 2006, many of these borrowers began to default on their mortgages, causing some financial institutions to suffer heavy losses as the securitized bonds plummeted in value.

Problems and Applications

**5.3** Corporate governance is the way in which a corporation is structured and the effect a corporation’s structure has on the firm’s behavior. Stronger corporate governance laws may reduce the principal–agent problem and increase a corporation’s value and profitability for shareholders**.**

**5.4** Having members of the boards of director serve for longer periods could be bad news for corporate governance if it means that stockholders now exert less influence on the board and the functioning of the firm. Members of the board of directors may be less attentive to stockholder desires if there is lower turnover of board members. Having members of the board of directors serve for longer periods could be good news for corporate governance if it is the result of stockholders being pleased with the oversight of management by the current board.

**5.5** Though difficult to estimate, it would be possible to put a dollar value on the benefits to the economy of corporations complying with Sarbanes-Oxley. If Sarbanes-Oxley succeeds in reassuring investors, thereby increasing the flow of funds through financial markets, then economic growth should increase, raising living standards, and benefiting society as a whole. The benefits to corporations include the reduction in risk, which may reassure investors, and thereby make it easier for firms to raise funds. Investors benefit to the extent that Sarbanes-Oxley reduces accounting fraud. Identifying the benefits does not necessarily mean that they exceed the costs to corporations of complying with the Sarbanes-Oxley Act.

**5.6** **a.** By stating that a stock is “overvalued,” a person means that in their opinion the stock price is higher than the firm’s expected future profitability would justify.

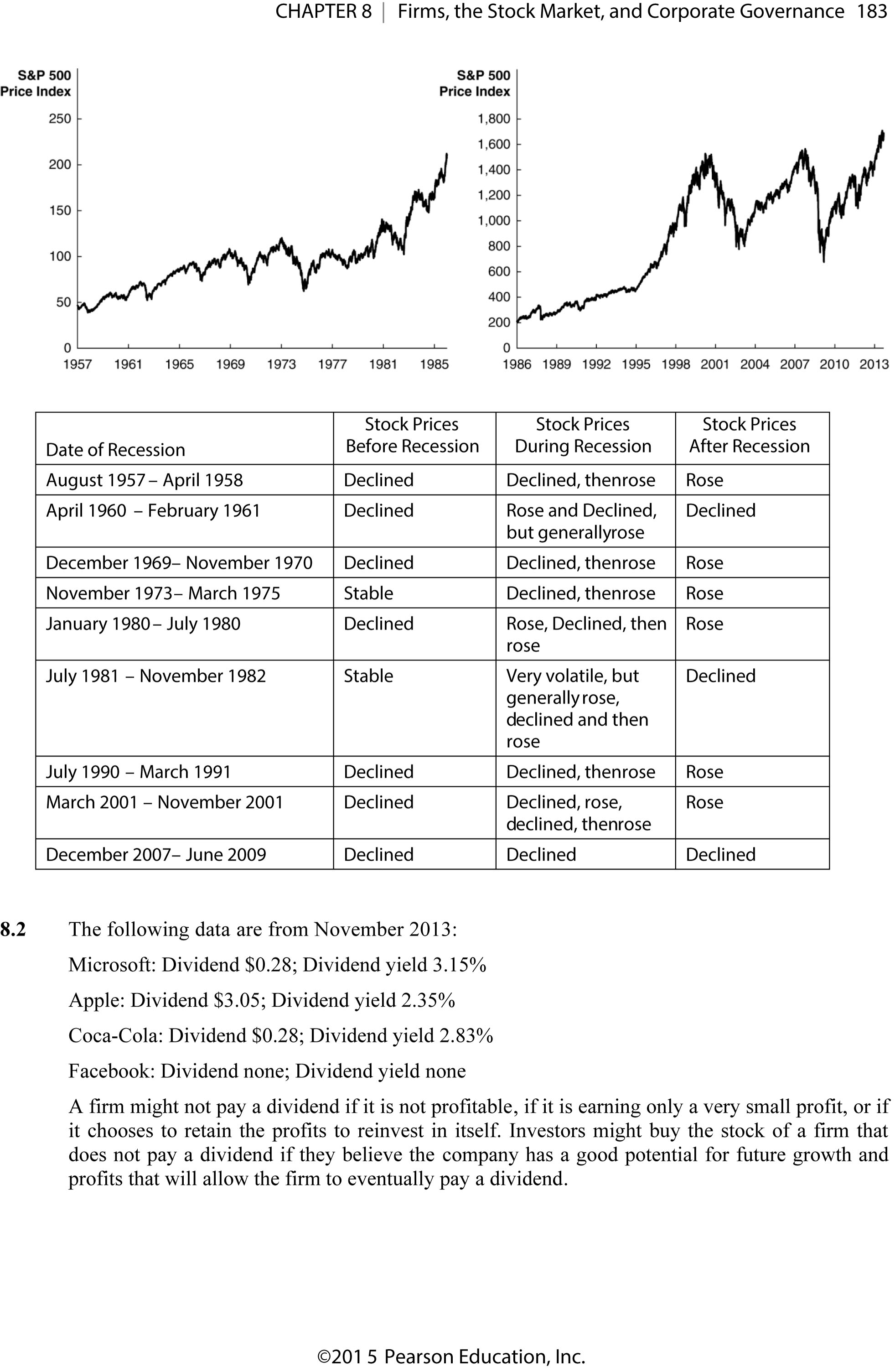
**b.** A firm’s stock might be overvalued despite the firm having “solid growth prospects” if investors are too optimistic about the future profitability of the firm, for example expecting exceptional growth instead of solid growth.

**5.7** **a.** Investors in primary and secondary markets make decisions on which firms to invest in, when to invest, how much to invest, and when to sell based on information about firms. If the information is misleading, investors will invest less or, possibly, stop investing. Capital markets depend on accurate information and can function poorly when information is misleading.

**b.** Corporate boards of directors sometimes link top managers’ compensation to the corporations’ stock price to lessen the principal-agent problem caused by the separation of ownership from control. Linking compensation to stock prices provides managers with an additional incentive to maximize shareholder profits. But tying compensation too closely to stock prices can cause management to maximize short-run profits over long-run profits and to commit corporate fraud (“cook the books”) to make the firm appear to be more profitable than it is with the intention of increasing the firm’s stock price.

Solutions to Real-Time Data Exercises

**8.1** The two graphs on the next page show the S&P 500 stock index from 1957 to 1985 and from 1986 to 2013. Dividing the period into two graphs allows us to see more clearly changes in S&P 500 stock index during the earlier years when the values were much smaller. The table below describes how stock prices moved just before, during, and just after recessions from 1957 to the present. Stock prices have typically declined before recessions. Immediately following the ends of recessions, stock prices have typically fallen, although there are several exceptions. The movement of stock prices during recessions has been quite varied.

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| **Date of Recession** | **Stock Prices Before Recession** | **Stock Prices During Recession** | **Stock Prices After Recession** |
| August 1957 – April 1958 | Declined | Declined, then rose | Rose |
| April 1960 – February 1961 | Declined | Rose and Declined, but generally rose | Declined |
| December 1969 – November 1970 | Declined | Declined, then rose | Rose |
| November 1973 – March 1975 | Stable | Declined, then rose | Rose |
| January 1980 – July 1980 | Declined | Rose, Declined, then rose | Rose |
| July 1981 – November 1982 | Stable | Very volatile, but generally rose, declined and then rose | Declined |
| July 1990 – March 1991 | Declined | Declined, then rose | Rose |
| March 2001 – November 2001 | Declined | Declined, rose, declined, then rose | Rose |
| December 2007 – June 2009 | Declined | Declined | Declined |

**8.2** The following data are from November 2013:

Microsoft: Dividend $0.28; Dividend yield 3.15%

Apple: Dividend $3.05; Dividend yield 2.35%

Coca-Cola: Dividend $0.28; Dividend yield 2.83%

Facebook: Dividend none; Dividend yield none

A firm might not pay a dividend if it is not profitable, if it is earning only a very small profit, or if it chooses to retain the profits to reinvest in itself. Investors might buy the stock of a firm that does not pay a dividend if they believe the company has a good potential for future growth and profits that will allow the firm to eventually pay a dividend.

Solutions to Chapter 8 Appendix

Review Questions

**8A.1** Money received at some future date is worth less than money received today because if you have the money today, you can use it today to buy goods and services and receive enjoyment from them. In addition, prices are likely to rise, so money received later won’t buy as much. Finally, there is some risk that you will not receive the money in the future. Present value = Future value/(1 + interest rate). So, if the interest rate rises, the present value goes down.

**8A.2** Present Value =  +  + ... +  + 

=  +  + ... +  + 

**8A.3** The present value of bond payments is generally much more certain. The coupon payments and the face value are part of the bond contract, but the future dividends of the firm are not known with certainty. In addition, the bond payments are spread out over a specific number of years, but the stock dividends extend out toward infinity (or the life of the firm). The main similarity is that both sets of future payments are discounted by dividing by (1 + interest rate) raised to the number of years in the future that the payment will be received.

**8A.4** Operating income = revenue – operating expenses. Operating income differs from net income because it excludes both investment income (or loss) and income taxes. Net income and after-tax accounting profit are the same.

**8A.5** An income statement reflects the revenues, costs, and profits of a firm *during one year* (or some other period of time). A balance sheet reflects the assets, liabilities, and equity of a firm *at one moment in time*. Assets are listed on the left side of a balance sheet; liabilities and stockholders’ equity are listed on the right side.

Problems and Applications

**8A.6** To find the present value of the bond, you must find the present value of each payment and add them together. At an interest rate of 10 percent, the present value of the bond is:

 = $85/(1.10) + $1,085/(1.10)2 = $77.27 + $896.69 = $973.96

**8A.7 a.** Hamilton’s contract was not worth $125 million in present-value terms because most of the money will be received in future years and is therefore worth less in present-value terms. This statement would be correct only if the interest rate equaled zero.

**b.** To find the present value of the contract, you must find the present value of each year’s payment and add them together. At an interest rate of 10 percent, the present value of the contract is:



= $10,000,000 + $13,636,364 + $12,396,694 + $17,280,240 + $20,490,404 + $18,627,640

= $92,431,342

**c.** At an interest rate of 5 percent, the present value of the contract is:



= $10,000,000 + $14,285,714 + $13,605,442 +$19,868,265 + $24,681,074 + $23,505,785

**8A.8** **a.** If the winner had opted for the 25 annual payments, she would have received:

25 × $1,440,000 = $36,000,000.

**b.** At an interest rate of 10 percent the present value of the 25 payments would be calculated as the sum of the present value of each of the 25 payments:

 = $13,070,938.

In this case, the lump sum payment of $18,000,000 has a greater present value than the 25 annual payments.

**c.** At an interest rate of 5 percent the present value of the 25 payments would be calculated as the sum of the present value of each of the 25 payments:

 = $20,295,280.

In this case, the 25 annual payments have a greater present value than the lump sum payment of $18,000,000.

**d.** 6.24% gives a present value of almost exactly $18 million.

**8A.9** The decision of which is more valuable depends on the rate of interest used in calculating the present value. At a 10 percent interest rate, the present value in 2011 of the 25 one-year payments of $1,193,248.20 would equal:



= $10,831,162.

The present value in 2000 of this $10,831,162 in 2011 would equal:



So, at a 10 percent interest rate, Bonilla would have been wise to take the $5.9 million lump sum in 2000.

At a 5 percent interest rate, the present value in 2011 of the 25 one-year payments of $1,193,248.20 would equal $16,817,573.98. The present value in 2000 of this $16,817,573.98 in 2011 would equal $9,832,887. At a 5 percent interest rate, Bonilla would have been wise to take the 25 one-year payments.

**8A.10** Stock price =  = = $2/0.08 = $25. If the interest rate is 5 percent, then the maximum price you would pay is $2/0.03 = $66.67. Following this pattern, a lower interest rate means that stock prices should rise.

**8A.11** Interest rates on newly issued bonds are likely to rise as a result of inflation. This will cause the price of your bond to fall.

**8A.12** Values are in millions of dollars.

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| **Revenue** | | $27,568 |
|  | Revenue from company restaurants | 18,603 |
|  | Revenue from franchised restaurants | 8,965 |
| **Operating expenses** | |  |
|  | Cost of operating company restaurants | 15,224 |
|  | Interest expense | 517 |
|  | General and administrative cost | 2,455 |
|  | Cost of restaurant leases | 1,527 |
| **Total operating expenses** | | 19,723 |
| **Operating income** | | 7,845 |
| **Income before income taxes** | | 7,845 |
| **Income taxes** | | 2,614 |
| **Net income (accounting profit)** | | $5,231 |

**8A.13** Values are in millions of dollars.

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| Assets | Liabilities |
| Current assets $4,220  Property and equipment 2,659  Goodwill 399  Other assets 962  Total assets $8,240 | Current liabilities $2,210  Long-term liabilities 895  Total liabilities 3,105  Stockholder’s equity 5,135  Total liabilities and  stockholder’s equity $8,240 |

**8A.14** Facebook’s current ratio (values are in millions of dollars) =



Firms with a low current ratio may have difficulty raising cash quickly if they need to pay off their current liabilities.