Exercises

1. What was the role of the manager in the factory-type firm? What does the manager do in the firms that require cooperation from large numbers of diverse people?
2. Is the corporate form becoming inefficient? Are transaction costs being reduced to the point the firm won't be more efficient than the market?
3. What is the twentieth century firm; the twenty-first century?

Passing along Costs

In 2010, the costs of powdered milk, cocoa, coffee, and wheat rose at double-digit rates.

Wildfires in Russia had caused wheat and other crop prices to shoot up. Cocoa prices reached a 33-year high in July, helped along by speculative activities, including the London-based commodity trading house Armajaro Holdings Ltd.'s move to store 240,000 metric tons of cocoa, worth roughly $1 billion. Tea prices went up significantly on account of higher fuel costs and poor harvests in India.

Big consumer-goods companies often find ways to offset the commodity price increases, sometimes through cost-cutting and sometimes by passing along higher prices to retailers and consumers. J.M. Smucker Co. raised prices about 9 percent on products in its coffee lineup, which includes Folgers, Dunkin' Donuts, and Millstone brands. In response to rising milk prices, Danone, which makes yogurt products, increased prices in markets including Mexico and Poland. Unilever's chief financial officer noted that tea costs have gone up, and Unilever has already sent that higher cost down the chain on its consumer tea products.

Exercises

1. Suppose the price of coffee beans increases by $0.20 per pound. What is the effect of this raw material price increase on the demand for roasted coffee? If one pound produces 50 cups of coffee, would the price of a cup of coffee rise by $0.01? Explain.
2. The article reports that J.M. Smucker Co. plans to increase its coffee prices by 9 percent. If Smucker has a lot of rivals but has a brand name that has value, will this 9 percent increase in retail prices imply that profit will rise by 9 percent?
3. Is it optimal for a firm to slash prices to retain market share? Is cutting prices during a recession and then raising them in a recovery a good strategy?

Competition in the Information Economy

Google's stock price had fallen nearly $150 from January 1, 2010 to August 20, 2010, driven by competition from Apple. Apple's iPhone launched a new wave of Web growth on a platform that largely bypassed the browser and Google's search box. The "app" revolution seemed to spell an end to Google's dominance of Web advertising. The declining stock price led many critics to wonder why Google doesn't give more cash back to shareholders in dividends. They argue that all that cash has led the executives running the company to waste money on gimmicky ideas that never pay off.

But Google's CEO does not sound as if he is running a company in trouble. Google estimated that 200,000 Android smartphones were being activated daily by cell carriers on behalf of customers. That's a doubling in just three months. Since the beginning of 2010,

3. Describe profit maximization in terms of marginal revenue and marginal cost.
4. Use the following information to calculate total revenue, marginal revenue, and marginal cost. Indicate the profit-maximizing level of output. If the price was \$3 and fixed costs were \$5, what would variable costs be? At what level of output would the firm produce?

Output	Price	Total Costs	Total Revenue (P x Q)
1	\$5	\$10	
2	5	12	
3	5	15	
4	5	19	
5	5	24	
6	5	30	
7	5	45	

5. A firm's profits are the difference between its revenues and costs as represented by the function

$$\text{Profit} = P(Q)Q - C(Q)$$

where P is price, which depends on the output to be sold, $P(Q)$; Q is output; and C is costs, which depend on how much output is produced, $C(Q)$. Find the profit-maximizing price and quantity.

6. The demand function is $Q = 100 - .5P$. The cost function is $TC = C = 100 + 60(Q) + (Q)^2$
   a. Find MR and MC.
   b. Demonstrate that profit is maximized at the quantity where $MR = MC$.
   c. Derive the relationship between marginal revenue and the price elasticity of demand, and show that the profit-maximizing price and quantity will never be the unit-elastic point on the demand curve.
   d. Using the information in (b), demonstrate that the profit-maximizing price and quantity will never be in the inelastic portion of the demand curve.
7. Explain the competitive process when a firm earns a positive economic profit.
8. Explain what is different between firms in monopolistic competition and firms in oligopoly. What does this difference mean for prices and quantities and for economic profit?
9. A firm has estimated the following demand function for its product:

$$Q = 8 - 2P + 0.10I + A$$

where Q is quantity demanded per month in thousands, P is product price, I is an index of consumer income, and A is advertising expenditures per month in thousands. Assume that $P = \$10$, $I = 100$, and $A = 20$.

Based on this information, calculate values for: quantity demanded; price elasticity of demand; income elasticity of demand; and advertising elasticity. (Use the point formulas to complete the required elasticity calculations).

10. The market demand and marginal cost functions for a product sold by a monopolist are as follows:

$$\text{Demand: } QD = 100 - 2P$$

$$\text{Marginal Cost: } MC = 1.5Q$$

Based on this information, calculate the profit-maximizing price and quantity and the revenue-maximizing price and quantity:

11. You have begun a new business of transcential learning. You have fixed costs of \$1,800 a month and a variable cost of \$48. You charge \$16 per session. You can provide sessions at \$66 each. Based on this information, calculate the breakeven level of daily output for the firm. After operating for a while, your variable cost rises to \$50. What does this mean for the breakeven quantity of output.
12. The market supply and demand functions for a product traded on a perfectly competitive market are given below:

$$QD = 40 - P$$

$$QS = -5 + 4P$$

Based on this information, calculate the equilibrium price and quantity in this market.

13. Now, suppose the competitive market in Exercise 12 is monopolized. Calculate the price and quantity for the monopolist.
14. If the (profit-maximizing) level of output that a monopolist produces is such that marginal revenue, marginal cost, and average total cost are equal, then economic profits must be:
    a. negative
    b. positive.
    c. zero.
    d. indeterminate from the given information.
15. Draw a demand curve for a firm with market power. Portray the situation where that firm is earning positive economic profits. Now illustrate what occurs as entry occurs and rivals begin competing with that firm.

Charge higher Price

16. Show that it is possible for a monopolist to earn negative economic profit.

8. Net present value is the present value of the income stream generated by an investment project minus the present value of the cost of that project.
9. Projects expected to generate cash flows with a positive net present value should be undertaken; those with a negative net present value should be forgone.
10. Foreign-exchange exposure can increase the risks of doing business and thus increase the cost of capital.
11. Increased risk increases the cost of capital. A faulty governance system, instability in the countries in which a firm does business, and rules and regulations in different countries that lead to differential costs of doing business can increase the cost of capital.
12. The corporate form—diverse ownership without control, managers, creditors, hierarchy—exists because it is efficient. The existence of diverse ownership enables the risk of ownership to be minimized. The creditor–owner division ensures that the appropriate risks are undertaken and the performance of the firm is maximized.

Key Terms

Weighted average cost of capital (WACC)
Dividend
Capital structure
Bond covenants

Exercises

1. The Benly Company needs to raise funds for a major expansion. The company is debating whether to issue stock or to issue bonds. If the company issues bonds, then its debts will increase and it will be under additional stress to ensure that its revenues can cover the costs of its debt. If it issues stock, the current owners will lose power and influence. What should the company do? Explain your answer.
2. Explain how the corporate form is more efficient than a form in which the owner is also the manager.
3. What is the creditor–owner conflict? Explain why 100 percent equity might be inefficient. Explain why 100 percent debt might be inefficient.
4. Middleton Steel Company is considering whether to temporarily close one of its manufacturing plants. If it does close the plant, it faces the costs of shutting down and then starting back up, the costs of criticism from the city in which the plant is located, and the costs of customer abandonment as some customers purchase products elsewhere. If it does not close the plant, it will experience substantial losses because revenues will not cover variable costs.

   a. What would a net present value analysis say about the decision?
   b. What other strategies might be used?

5. The marketing director of National Midland Mortgage has been arguing with senior management about building a $50 million publishing facility. Other managers worried about the assumptions in the analysis that support the investment—an increase in the number of mortgages processed and a reduction in processing costs. What if the mortgage market did not grow as expected?

   a. Should National Midland invest in the publishing facility?
   b. What assumptions might the marketing director have made to make the investment look worthwhile?

6. Bob Davies must decide whether to invest $100,000 in his own business or in another local business. Both investment projects have an expected life of five years. The cash flow of each is as follows:

Year	Davies	Other
1	$20,000	$10,000
2	30,000	10,000
3	40,000	30,000
4	10,000	40,000
5	5,000	50,000

Suppose the risk of the projects is the same and is accounted for by a risk premium of 6 percent per year. Would either investment make sense? Which would be better?

7. An oil company recently evaluated a proposed investment for improvements in a particular type of refining equipment. According to the analysis, such improvements would require an investment of $15 million and would result in an incremental after-tax cash flow of $2 million per year for nine years following the year of the investment.
   a. If the discount rate is 10 percent, what is the net present value of this project?
   b. If the discount rate is 15 percent, what is the net present value of this project?
   c. What discount rate would you argue makes most sense in evaluating this project?
8. What discount rate is most appropriate for net present value calculations of large-scale projects? Of small projects? Of the quantity of inventories to hold?
9. What would the effect be of a law that makes shareholders personally liable for debt the firm acquires?
10. In 2009, the U.S. government took over Chrysler. It gave about 25 percent of the equity to the UAW and kept the rest. It eliminated the claims of the bondholders. The corporate form provides bondholders first claim on assets if the firm goes under; stockholders receive what is left after everyone else is paid off. What does the government's actions mean? What effect is the action likely to have on other firms that might be struggling?
11. Explain what the incentives of bondholders and stockholders are. Are they the same? How do they differ? Will a firm with no debt act differently than a firm with a significant amount of debt?
12. Unlike equity, debt is unforgiving if the firm performs poorly. If a firm goes bankrupt, debtholders have the right to repossess funds and exercise their residual control rights about how the funds will be spent. Thus, under debt financing, debtholders possess a larger set of control rights than managers. Does this mean that a manager that wants to maintain control should finance more with equity?
13. What is the effect on a firm's cost of capital when a CEO is found to have engaged in unethical behavior? Explain.
14. How would country risk affect a firm's cost of capital?
15. Use the CAPM to explain whether a firm that is diversified to perform exactly as the stock market performs would be a better investment for an individual than a firm that is not diversified.
16. In 2010 few firms were investing in new projects or expanding. Yet, interest rates were extremely low. Why, with this very low cost of capital would firms not be investing in new projects?
17. What happens to the cost of capital when inflationary expectations are high? Explain. (Inflationary expectations are high when expectations that inflation in coming months and years will increase.)
18. What happens to the cost of capital when expectations of deflation are high? Explain. (Deflation occurs when prices decline.)

CHAPTER NOTES

1. www.i2.com/assets/pdf/705DFA04-7A09-4FF9-A1D636E8AD51E1DD.pdf
2. www.redback.com/Redback/Home/Products/SmartEdge.html
3. www.crm2day.com/news/crm/114696.php
4. www.level5networks.com/prod_features.htm
5. Under certain assumptions there is no optimal capital structure. This is referred to as the M and M result after the economists who defined it, Modigliani and Miller; see F. Modigliani and M. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," *American Economic Review* (June 1958). [The primary assumptions that are necessary for the M&M result are that there are no tax consequence differences between debt and equity and that an investor can borrow money at the same cost as the firm. Neither of these assumptions is generally valid—debt cost can be written off against taxes while dividends (equity costs) can not and, typically, firms can borrow at a lower rate than individual investors.
6. *Ease of Doing Business*, 2008, http://www.nationmaster.com/graph/eco_eas_of_doi_bus_ind-economy-ease-doing-business-index.
7. Kurt Eichenwald, *Conspiracy of Fools* (New York: Basic Books, 2005), p. 194.
8. Ibid., *Conspiracy of Fools*, p. 388.
9. Michael C. Jensen, *A Theory of the Firm* (Cambridge, MA: Harvard University Press, 2000).
10. Liz Peek, "Why Private Equity Is through the Roof," December 5, 2006; Business, *New York Sun*, March 8, 2008, www.nysun.com/article/44594?page_no=1, accessed January 15, 2008.

6. (2s) ECONOMIC PROFIT $= \left\{ (1 - \text{tax rate}) * \frac{\text{Revenue} - \text{COGS} - \text{SG\&A}}{\text{Revenue}} \right\}$

$$- \text{WACC} * \frac{\text{Capital}}{\text{Revenue}} * \left\{ \frac{\text{Revenue}}{\text{market size}} * \text{market size} \right\}$$

Formulation (2s) of economic profit is called the *strategic formulation of economic profit*. It enables us to look at strategic actions that the firm can undertake to affect economic profit.

7. (3s) ECONOMIC PROFIT $= \frac{\text{Revenue} - \text{variable costs}}{\text{Revenue}} - \frac{\text{fixed costs}}{\text{Revenue}}$

$$* \left\{ \frac{\text{Revenue}}{\text{market size}} * \text{market size} \right\}$$

Formulation (3s) changes the focus on costs by classifying them as fixed and variable. It requires that we understand the relationship between revenue and fixed and variable costs.

Key Terms

Net operating profit after taxes (NOPAT)
Cost of goods sold (COGS)
Selling and general and administrative costs (SG&A)
Income statement
Earnings before interest and taxes (EBIT)
Decay rate

Exercises

1. Calculate the added value for each of the following firms.

Microsoft:	
Value of output	$2,750
Wages and salaries	400
Cost of capital	40
Cost of materials	1,650
Barclays Bank:	
Value of output	$5,730
Wages and salaries	3,953
Cost of capital	916
Cost of material	556
General Motors:	
Value of output	$50,091
Wages and salaries	29,052
Cost of capital	15,528
Cost of materials	7,507

2. Following is some standard accounting information for each of the firms shown. Can you tell which firm is the most successful? Explain.

	Boeing	Good year	Liz. Claiborne	Circuit City
Sales	5601	423	622	1767
Profits	254	26.9	56.2	31.6
Return on sales	4.5%	5.2%	9%	1.8%
Return on equity	10.2	13.9	15	14.5

3. A cost of capital figure for each of the firms is listed below. Explain what this figure means.

Motorola	11.6
Hershey Foods	12.8
Home Depot	12.2
Dillard Department Stores	10.5
Coca-Cola	12.0

4. Listed below are financial figures for Abbott Labs. How well is Abbott doing? Explain your answer.

	89	90	91	92	93	94	95	96
Sales ($mil)	5,380	6,159	6,877	7,852	8,408	9,156	10,012	11,014
Net income	860	966	1,089	1,239	1,399	1,517	1,689	1,882
Capital per share (book value/share)	3.08	3.30	3.77	4.00	4.48	5.04	5.58	6.15

5. Explain why economic profit provides a better measure of profit than accounting profit.
6. The manager of Global X is contemplating the purchase of a new machine that will cost $300,000 and has a useful life of five years. The machine is expected to yield cost reductions to Global X of $50,000 in year 1, $60,000 in year 2, $70,000 in year 3, and $80,000 in each year in years 4 and 5. Will the acquisition of the machine add value?

7. Using the following balance sheet and income statement information, calculate accounting profit and economic profit:

Balance Sheet	**Jan 01**
Cash	57
Net receivables	547
Inventories	3,364
Other current assets	332
Total current assets	4,300
Net fixed assets	9,622
Other noncurrent assets	2,156
Total assets	16,078
Accounts payable	2,163
Short-term debt	82
Other current liabilities	1,150
Total current liabilities	3,395
Long-term debt	5,942
Other noncurrent liabilities	931
Total liabilities	10,384
Total equity	5,694
Shares outstanding (mil)	405
Income Statement	
Revenue	36,762
Cost of goods sold	25,335
Gross profit	11,427
Gross profit margin	31.1%
SG&A expense	8,740
Depreciation & amortization	1,001
Operating income	1,686
Nonoperating expenses	385
Income before taxes	1,274
Income taxes	509
Net income after taxes	765

8. Explain what occurs when a new technology makes another one obsolete in terms of economic profit. Consider firm A to be an existing firm using the old technology. Firm B is the new firm with the new technology. Firm A earned positive profits for years, but with the entrance of Firm B, Firm A's goods and services are no longer desired.
9. In measuring economic profit:
   a. How do you deal with a one-time event?
   b. How do you deal with money provided by relatives to get the business started?
   c. How do you handle off-balance-sheet expenses—that is, expenses that are incurred by the firm but are not measured as part of the firm's balance sheet?
10. The following type of report occurs each quarter as firms announce their earnings:
    Weaker-than-expected results last week from Exxon Mobil have set a gloomy backcloth for results on Thursday from Royal Dutch/Shell. A consensus of Wall Street analysts polled by Thomson Financial/ First Call had projected ChevronTexaco would report earnings of 70 cents per share. However, the company said that after excluding special items and merger-related expenses in both periods, operating earnings were $931 million (88 cents). Using that math, the company beat the analysts' figure by 18 cents. The company said it lost $154 million in the first quarter, compared with the year-ago quarter, in refining, marketing, and transportation operations. The company said its profit margins in that sector were at their lowest levels since the mid-1990s. Chevron stock closed up 90 cents, to $85.90, yesterday on the New York Stock Exchange.
    a. Why does the stock market react to earnings reports?
    b. What do the earnings reports mean?
11. The manager of Global X is contemplating the purchase of a new machine that will cost $300,000 and has a useful life of five years. The machine is expected to yield cost reductions to Global X of $50,000 in year 1, $60,000 in year 2, $70,000 in year 3, and $80,000 in each year in years 4 and 5. Will the acquisition of the machine add value?
12. You have just been hired as a consultant to help a firm determine which of three options to take to increase shareholder wealth. The following table shows year-end profits for each option. Assume that the risk-free cost of capital is 5 percent and the risk premium is 8 percent.

Option	**Profit in Year 1**	**Profit in Year 2**	**Profit in Year 3**
A	$70,000	$80,000	$90,000
B	$50,000	$90,000	$100,000
C	$30,000	$100,000	$115,000

    a. Calculate the economic profit for each option.
    b. Suppose that the profit figures are based on earnings figures of 10 times profits and that there are 100,000 shares of stock outstanding. What are the earnings per share for each option?
13. It is often stated that free cash flow is the same as economic profit. Define *free cash flow*. Demonstrate whether it is or is not the same as economic profit.
14. Using the formula given in the text for stock price determination, explain why stock prices move up or down in response to quarterly earnings reports.

The Coffin Cartel

A recent *Wall Street Journal*[12] article discussed the cartel of mortuaries and how it attempts to use the government to restrict entry. Benedictine monks at St. Joseph Abbey near New Orleans decided they would hand-craft and sell caskets. But local funeral directors decided to put a stop to the monks' activities. A Louisiana law makes it a crime for anyone but a licensed parlor to sell "funeral merchandise." Violators can land in jail for up to 180 days.

In the past, funeral homes were monopoly suppliers of caskets. But this monopoly is dissipating. Costco Wholesale Corp. and Wal-Mart Stores Inc. jumped into the casket trade last fall. Some states actively restrict third-party casket sales, but federal law prohibits funeral homes from refusing caskets brought in from elsewhere. So these other suppliers are cutting into funeral home profits.

The monks continued to peddle the caskets while lobbying for the official right to sell them. Their state representatives tried twice, unsuccessfully, to pass legislation broadening casket distribution. But the state board argued that only licensed directors have the training to sell caskets; after all, these are very complicated transactions.

Exercises

1. What rationale might the funeral homes have used to get the legislature to pass a law providing them a monopoly in selling caskets?
2. How much money would the funeral homes devote to fighting the monks?
3. Why would the funeral homes attack the monks but not go after CostCo and Wal-Mart?
4. Most crematories require that the body at least be enclosed and in an acceptably rigid container. The container or casket must be strong enough to assure the protection of the health and safety of the operator. It should provide a proper covering for the body and meet reasonable standards of respect and dignity. Why would crematories require the body be enclosed in "an acceptably rigid container"?
5. Explain how a small group like the funeral home directors can get government to provide them monopoly rights to various transactions.

Business Myths[13]

Several blogs have pointed out what they called "business myths." Some of these are:

1. **To be successful you have to be first.** This is also sometimes reworded as "the first in, wins" or "first mover advantage.".
2. **To be successful, you have to be cheaper.** Take an SBA (Small Business Administration) course, and they will tell you that if your only competitive point is to be cheaper, don't bother starting your business.
3. **I'm a good cook so I should start a restaurant.** "Hey, this meal is fantastic! You should start a restaurant!"
4. **The customer is always right.** You should never tell a customer that you don't want them as a customer any more.
5. **I'll just open my store, and people will stream in off the sidewalks and buy from me.** This is also known as the "If you build it, they will come" approach to business.
6. **It's a cool idea. Everyone will love this.** Often focus groups provide such input to marketers—we love the idea.

7. **Ours is better so we'll be successful.** Quality always wins.
8. **Adding more people to the project will make it go faster.** This is a very common view in the software world.
9. **Failure is bad. Failure is the opposite of success.** This is why dodge ball has been banned in schools and soccer teams are penalized if they get more than five goals ahead of their competitors.
10. **Knowledge is Power.** In the knowledge economy, knowledge is the distinct capability that is necessary for success.
11. **Cash flow is what really matters in business.** Profit can just be a trick of accounting whereas cash flow controls whether you can stay in business. Many companies go out of business due to cash flow challenges, even though they were profitable on paper.
12. **Having more customers is better than having fewer customers.** Would you believe that some companies go out of business because they have too many customers or too much demand for their product?

Exercises

1. Are these myths? Explain why each is either true or a myth.
2. Is it true that: YOU CAN WIN CUSTOMERS JUST by LOWERING YOUR PRICES? Explain.
3. Would you say that you should never form a partnership or a new business with close friends? Explain.

Creative Destruction

Foster and Kaplan,[14] drawing on research they've conducted at McKinsey & Company on more than 1,000 companies over 36 years show that even the best-run and most widely admired companies are unable to sustain market-beating levels of performance for more than 10 to 15 years. They write: "Corporations are built on the assumption of continuity; their focus is on operations. Capital markets are built on the assumption of discontinuity; their focus is on creation and destruction."

They argue that corporations do not change or create value at the pace and scale of markets or entrepreneurs who drive the markets. The philosophy of continuity means that their governance, their control processes, and other aspects that have enabled them to survive over the long haul, deaden them to the vital and constant need for change. Corporations, they argue, must learn to be as dynamic and responsive as the market itself if they are to sustain superior returns and thrive over the long term.

Exercises

1. How can corporations be as dynamic and responsive as the market itself if they are not markets?
2. Does the argument of the book make any sense? How can corporations learn to be as dynamic as markets without experiencing creative destruction as well as creatively destroying?
3. Can a company be an entrepreneur? Explain.
4. What does the following mean? *Corporations are built on the assumption of continuity; their focus is on operations. Capital markets are built on the assumption of discontinuity; their focus is on creation and destruction.*
5. Can any firm "sustain superior returns and thrive over the long term"?